THE IRISH AND THE JAPANESE APPRENTICESHIP SYSTEMS: A COMPARATIVE STUDY

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Abstract

The benefits of vocational education and, more specifically, the apprentice paradigm for the individual, the employer and for society as a whole have been accepted widely across many nations. These benefits have been delivered through a structured apprenticeship which has persisted for centuries, evolving from the early Guild system of indentured apprenticeship to the modern apprenticeship models operating in Japan and Ireland, on which this study has focused. This research examines the mechanics of the apprenticeship model in Japan and in Ireland, charting and analysing how both systems have evolved and adapted to economic, political and cultural challenges, exploring how both systems have responded in very different ways with some parallel outcomes. The five themes explored in this research emerged from an initial literature review of the topic, these themes are echoed throughout the various chapters to offer a multi-dimensional examination of the apprenticeship model. These themes frame the key areas of investigation explored through interviews which were conducted in both Japan and Ireland.

The volume of extant research conducted on apprenticeship in each country was found to be surprisingly low, considering the long tradition of these august systems in both Ireland and Japan. A mix of documentary research and qualitative semi-structured interviews were employed to fully examine the paradigm of apprenticeship from an objective macro policy viewpoint down to the micro level narrative of those who had direct experience with the apprenticeship model. The sample consisted of educators, apprentices, Master crafts people and industry representatives to reflect the variance of views and experience of the actors involved in the delivery of apprenticeship.

The main findings of the research demonstrated that the structure of the apprenticeship paradigm was not a formidable, durable, monolith which could weather the unrelenting march of progress through future generations, but, rather, the research revealed a delicate and fragile lacework of stakeholders, each of whom contributed to the overall form and shape of a training system embedded in societies who's confidence in vocational education has changed quickly and without warning as the winds of fortune and taste have changed.

The recommendations outlined offer a potential new model of apprenticeship which reinforces the view that this important form of education requires careful and constant curation through strong stewardship built on uncompromising quality assurance. Apprenticeship can only exist with an active public appreciation of the tangible

historical value of past practices which can incubate the development of the highest levels of craft skills that the apprenticeship model can deliver to a nation. In this way the potential economic value of an idealised apprenticeship model can be realised to the benefit of the apprentice, employer and to society for centuries to come.

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Contents

List of tables and figures

List of acroymns

AnCO	An Chomhairle Oiliuna
C & J	Carpentry and Joinery
CAP	Competence Assessment Programmes
CIF	Construction Industry Federation
CSO	Central Statistics Office
DFEi	Dun Laoghaire Further Education Institute
DES	Department of Education and Skills
ETUC	European Trade Union Confederation
EEC	European Economic Community
EGFSN	Expert Group on Future Skills Needs
EQAVET	European Quality Assurance for Vocational Education and Training
ESF	European Social Fund
ESRI	Economic and Social Research Institute
ETBI	Educational Training Board Ireland
EU	European Union
FÁS	Foras Áiseanne Saothair
FETAC	Further Education and Training Awards Council
GDP	Gross Domestic Product
HETAC	Higher Education Training and Awards Council
ILO	International Labour Organization
INAP	International Network on Innovative Apprenticeship
IoT	Institute of Technology
ITAC	Institutes of Technology Apprenticeship Committee
JAVADA	Japanese Vocational Ability Development Association
NAAC	National Apprenticeship Advisory Committee
NALA	National Adult Literacy Agency
NARC	National Apprentice Review Committee
NFQ	National Framework of Qualifications
NQAI	National Qualifications Authority of Ireland
NSB	National Skills Bulletin
OECD	Organisation for Economic Co-operation Development
Ofsted	Office for Standards in Education
PESP	Programme for Economic and Social Progress
PIAAC	Programme for the International Assessment of Adult Competencies
PLA	Programme Led Apprenticeship
QQI	Quality and Qualifications Ireland
RAPS	Redundant Apprentice Placement Scheme
SBA	Standards Based Apprenticeship
SOLAS	Seirbhísí Oideachais Leanúnaigh agus Scileanna
VEC	Vocational Education Committee
VET	Vocational Education and Training
TVET	Technical Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization

Chapter 1 Introduction

1.1 Introduction

This introductory chapter will outline the researchers' background motivation for undertaking this comparative study. The research framework outlines the aims and methodology used in the research of education and training followed by a thick description of apprenticeship and its function in society through the five themes that frame this research to include the development of the characteristic of the two apprenticeship models, the influence of cultural values on apprenticeship, followed by an examination of the apprenticeship model from a pedagogical viewpoint. This is contrasted with a review of global trends in apprenticeship to view the potential outcomes of either training system in Ireland and Japan, bookended with an economic evaluation of the apprenticeship system to the individual and to society. The research questions are outlined along with a brief discussion of how the separate themes which underpin the questions used in the questionnaire relate to the status and value of apprenticeship in both societies.

The terms '*trade'* and '*craft'* are used interchangeably throughout the research matching the nomenclature of craft skills in Ireland, where an apprentice can be engaged in a trade but earn an Advanced Craft Certificate in that trade, which entitles a newly qualified apprentice to be called a '*craftsperson'*. The Japanese equivalent was more unambiguous with the title of '*Master'* conferred upon any craftsperson with the occasional use of the word '*Artisan'* used to separate the craftsperson from an '*Artist'* in the view of those interviewed for this research. A summary of the introduction to the methods and current research discussed concludes the chapter.

1.2 Motivation and origin of the study

Bates (2011) presented the definition of apprenticeship as set out by the Irish Department of Education and Science in 2010 as;

> "*A method by which a person works for an employer in a chosen occupation and learns the necessary skills, knowledge and attitudes to become a qualified craftsperson."* (Bates, 2011:12)

However the experience of the researcher of apprenticeship from all aspects, revealed that it is a much more complex and fragile interplay of characters and contexts that

coalesce to form that learning experience of skills, knowledge and attitudes defined by Bates (2011). The slow decline in the status of apprenticeship and of craft skills generally in society, with an increase in the negative perception toward vocational education (Meer, 2007:561) became an area of interest for the researcher with the relatively recent introduction in Ireland of the Standards Based Apprenticeship. Within one generation in Ireland the status of apprenticeship and vocational education generally appeared to have declined dramatically, relegated to the lowest rung of education (Descy & Barabasch, 2014:22, Lee, 1998:2-6, O'Hare, 2013:4) often referred to as a "*dumping ground*" only suitable for low academic achievers in the view of those interviewed for this research and by the general public (McGuire, 2016:3, Ó Murchadha, 2013:22, Dún Laoghaire Further Education Institute, 2013:16). At the same time higher level education developed a reputation as a secure pathway into an idealised professional career (McCrone, 2014:3). Most surprisingly, this occurred as the apprenticeship model itself had evolved from a time served model with no formal examinations to a structured standards based apprenticeship paradigm in 1993 with mandatory examinations at the end of each of the seven sequential phases (Buck & McGinn, 2005:33). The Standards Based Apprenticeship model required an apprentice to achieve a passing grade of seventy percent in each phase before the apprentice could progress into the next phase.

A preliminary exploration of the fundamental contributing pressures of this apparent paradox focused initially on other cultures in Western Europe that enjoyed a robust reputation of vocational pedagogy enabling a credible social status of industrial heritage generally which potentially offered a model to contrast, dissect and examine. Initially examining countries such as Germany and the Scandinavian countries, progressing to and widening the parameters into developed countries in Asia and in particular Japan. The apprenticeship paradigm in Germany proved to be too similar to Ireland in two key aspects, one, the newly established Standards Based Apprenticeship was adopted from the German '*dual'* system incorporating a mix of on-the-job and off-the-job training (See Appendix E and I) and second, Germany had a culture very similar to Ireland and had also suffered similar challenges in the recruitment of new entrants to the apprenticeship system, in 1990 the registration rate of applicants was 70%, this fell to 62% in 2002 out of the 16-20 year old cohort (Steedman, 2005:16). Repetition of this decline was also observed in Scandinavian countries which also operated a variant of the dual training system. The Japanese culture and tradition of craft knowledge and skills transfer provided a distinct and independent anthropological resource for

comparison (See Appendix D and H). Japan had a strong tradition of craft appreciation through social, government and international recognition of craft skills through national policies (Philip, 1989:54, Sarashima, 2013:149) such as awarding individual craftspeople the title of '*National Living Treasure'* which suggested that Japan would be worthy of detailed study to potentially offer lessons for the Irish apprenticeship system.

1.3 Research framework

1.3.1 Aim of the study

The intention of the researcher was to develop a full understanding of two apprenticeship systems as culturally diverse as possible, on opposite sides of the world in order to compare and contrast both educational training systems without proximal contamination, anthropologically speaking, in the expectation of a comprehensive understanding of the character of each model independently. This reductionist approach of both apprenticeship systems to their respective critical fundamental elements was essential to develop a greater understanding of vocational education methodologies generally. As outlined in more detail in the Literature Review chapter, the researcher investigated these practices from five different perspectives of structure, cultural values, user experience, international perspectives and potential opportunities and challenges which the apprenticeship model had weathered in both countries. An exploration of the historical evolution of the apprenticeship model offered a context to the formation of the character of an apprenticeship system. This atomisation and reconstitution of one of the oldest paradigms of pedagogical knowledge transfer revealed that regardless of the diversity of culture, distance or principle objectives of apprenticeship that may exist, three fundamental core elements have determined the success or demise of the industrial training model that is apprenticeship.

1.3.2 Methodology used

The fundamental research framework of this thesis was underpinned by the desire to analyse two distinct systems of craft skills training to determine deficits and solutions which could contribute to a relevant and sustainable apprenticeship model, free of context. The objective examination of two independent systems was conducted using the same key metrics to collect data objectively including both documentary research as

well as qualitative research, from which meaningful conclusions may suggest a potential new model of apprenticeship. Any potential new model would have to be founded on core philosophical tenets that could adapt and compliment the culture and character of the country it operated in. A common research method that was deliberately avoided in this research was to directly compare the content or objectives of vocational education with general education which Meer (2007) argued was a source of contention as it was not an absolute or fair comparison (Meer, 2007:565). The central difference posited by this argument was that vocational education was job specific, concerned with the transmission of exploitable knowledge where general education was democratic, egalitarian, collaborative (Gonczi, 2010:404) and while this was an interesting area of debate it was not the core focus of this research.

Established research methodologies were adhered to throughout the research and careful triangulation of data was rigorously adopted. Documentary analysis was employed to examine; firstly, the historical origins as well as a review of modern apprenticeship models, secondly, to explore any major changes in the character in apprenticeship systems in various cultures and thirdly, consider the context of current and longer term trends within apprenticeship as it applies to both the Irish and Japanese apprenticeship systems (Cohen *et al*, 2011:248) in the Literature Review and qualitative semi-structured interviews were employed as the constituents of a recognised ethnographic approach. An issue that occurred in vocational education research generally, according to Unwin (2014), was that those who are actively involved in new practices of pedagogy in vocational education have not published their methods or results (Unwin, 2014:4) and of those who have published Beutner *et al* (2000) warned, the standards of comparison were inevitably characterised by the cultural backgrounds of the researcher (Beutner *et al*, 2000:7).

Documentary analysis of apprenticeship systems in other countries examining the factors that shaped those paradigms produced the distinct emerging themes that were investigated during the interviews and were also the guide by which candidates were identified for semi-structured interviews. The techniques described were used to factorise the parts of the apprenticeship model under five separate themes, which were examined individually before being reconstructed to give a picture of the whole training system actively avoiding the risk of missing the interaction of the parts within a system (Cohen *et al*, 2011:29). The researcher wishes to argue that the strength of the ethnographic approach was that it allowed flexibility in the study of the parts of the system (objective) but it also has the rigour to reveal the relationship of the parts to the

whole (subjective) in cultural terms that allow comparisons to be made by those not directly involved in that particular system. The investigation of the Japanese and Irish apprenticeship programmes involved three languages which will be seen throughout the research and every effort has been made to translate these words or phrases as accurately as possible into English and keeping the use of Japanese and Irish languages to a minimum. It must be recognised that concepts may be misinterpreted even when reading English written research of non-English countries (Unwin, 2014:3) and the baseline for research in apprenticeship varies from country to country, by region and by sector (Shoesmith, 2009:4).

1.3.3 Originality

The study of vocational education was not new and considerable research in this area has been done in many Western countries, although the study of learning in the workplace is a recent phenomenon with an increase of research in this area expanding from the 1990's (Tynjala, 2008:131). Many variations of apprenticeship have existed without a single agreed or accepted definition of what an apprenticeship actually is (Bridgford, 2013:12). The amount of qualitative research conducted on the Irish apprenticeship system and further education in Ireland was extremely low compared to most Western countries (McGuinness *et al*, 2014:xii, Tierney & Clarke, 2007:130, McSweeney, 2013:80). The amount of empirical data of on-the-job training in Japan by private and public bodies was equally low (Kito, 2014:65). The absence of research or qualitative data in English of the Japanese industrial or traditional craft area was equally apparent, research into the Japanese vocational system by Western researchers was extremely unusual. The reasons for this became apparent when one attempted to penetrate the language and cultural barrier of Japan, being a non-Japanese native trying to engage with Japanese people from the other side of the globe proved a great challenge. These challenges of multi-national research comparisons into apprenticeships was described by Mazenod (2014) who attempted to compare France, Finland and England (Mazenod, 2014:7).

Vickerstaff (2003) stated that despite the long history of apprenticeship, very little has been written from the perspective of the apprentice (Vickerstaff, 2003:270). It became apparent in this research how unique it was to have compared the Irish and Japanese apprenticeships systems and thus this research is original in nature and content and will add to the general body of knowledge of vocational education.

It is useful to provide a contextual background to current apprenticeship models by reviewing their development and evolution in developed countries including both Ireland and Japan, to understand how the methodologies and philosophies of industry, society and governments have changed and moulded the structure and ultimate objectives of apprenticeship through successive generations.

1.4 The role of apprenticeship in society

Apprenticeship has prevailed through the centuries as a credible framework to develop individuals, primarily young people, in a process of knowledge transfer and understanding in occupational skills (Fuller & Unwin, 1998:154). As the trade guilds regulated the standards and the numbers entering the trades from the twelfth century to the latter half of the eighteenth century in many countries, a standardized model of apprenticeship became established across the developed world. The core purpose and focus of apprenticeship varied greatly from country to country as did the quality and it was interesting to note the increased use of the term *'quality apprenticeship*' in international reports (Smith *et al*, 2013:v), government papers and in the media. In his study of Ghanaian youths, Foster (1965) argued strongly that the returns on investment in vocational education were a lot lower than the returns from general education and that vocational education should be restricted to industry led training (Oketch, 2007:222).

Vocational education and apprenticeship was naturally anchored to industry and as such it was developed in a reactionary way in both Ireland and Japan that saw the pendulum swing in the primary function of the apprenticeship model from education to instruction and back again. In broad terms the Irish model of apprenticeship, which was similar to those in Western Europe, could be termed '*prescriptive'* instruction or as Dore and Sako (1998) described it, formed out of '*procrustean moulds'* (Dore & Sako, 1998:4), since it was task oriented, rigid, formalized and easily described in term length. There was a key and important distinction between '*Instruction*' and '*Teaching*' in vocational pedagogical aims according to Gagné *et al* (1992) that was central to this thesis, Gagné *et al* (1992) outlined the difference by asking;

> *"Why do we speak of instruction rather than teaching? It is because we wish to describe all of the events that may have a direct effect on the learning of a human being, not just those set in motion by an individual who is a teacher."*

And further added;

> "*The purpose of designed instruction is to activate and support the learning of the individual student.*" (Gagné *et al*, 1992:3-4)

Designed instruction was more holistic than the lesson plan, it included the learning environment and the group, and it included internal knowledge and external information over a long term. The environment or '*habitus'* and the '*field'* was a theory developed by Bourdieu (1990) which highlighted how learners learn in a peripheral way from the setting and context of the learning environment whether that be in a classroom or in a workplace. The learner also learned from group, a '*community of practice'* in essence which was a theory developed by Lave and Wenger (1991) to demonstrate how legitimate peripheral learning occurred within varying contexts. The line between vocational training and vocational education in Western education was often blurred, with an irregular focus being placed on either the transfer of technical information (Vocational training) or enabling the apprentice through the zone of proximal development into developing tacit knowledge which could be adapted and developed into new knowledge (Vocational education). The Japanese pedagogical model was a reflection of the culture, based upon Zen principles of repetition of exercises in a difficult environment of having to '*steal the knowledge'* in the expectation of internalizing information into knowledge enabling the novice to self-transcend to a higher level of cognitive ability, a process termed '*ba'* and described by Nonaka and Konno (1998).

In Ireland, apprenticeship evolved in parallel to the economy, which developed from an agricultural to an industrial based economy. New legislation was introduced, constantly improving the educational standards and the structure of the apprenticeship model. From humble beginnings in the late nineteenth century, where the standard of education and training was exclusively the remit of the employer, up until the recent model of the Standards Based Apprenticeship which, as the name suggested was based on standards, regulated by the State. Japan also developed its apprenticeship model in reaction to military and industrial change that transformed an inward looking country into a modern export based economy, adapting the apprenticeship system as it did so. Formal regulated apprenticeship began with the naval threat of the United States of America in 1854, causing the Japanese Government, with the help of the French, to set up an apprenticeship school in the newly established naval base in Edo Bay (Now Tokyo Bay) in 1865. Apprenticeship was then used to adopt and develop new technologies in industry in the early nineteen hundreds leading up to the Second World

War. After the war, apprenticeship became standardised and regulated by the Ministry of Education and was later diluted into the Junior High School system. The attraction of vocational education began to decline dramatically in the early 1990's in Japan with less than 25% of students choosing vocational subjects in high schools.

As of 2013, there were twenty seven recognised trades in Ireland (Ó Murchadha, 2013:109), although the entire apprenticeship system under went review in 2013. All trades involved the same constituent representatives of; an employer, apprentice, training authority and an educational body, all of whom worked in social partnership to train a school leaver over a set number of years to produce a qualified craftsperson that could perform a particular role in industry. In Japan there were one hundred and twenty-five (2008) different trades and two-hundred and twenty-two recognised crafts (2015). The variance in philosophies could be demonstrated using the example craft of Carpentry and Joinery. In Ireland there was one trade called Carpentry & Joinery and another called Cabinetmaking, while in Japan the tradition of specialization created three sectors of craft areas; (1) Construction Sector, (2) Manufacturing Sector, and (3) Service Sector with woodworking in two of the three sectors with trades such as: Carpentry, Lumbering Saw Setting, Maintenance of Woodworking Machines, Wood Pattern Making, Mechanical Woodworking, and Bamboo Craft. Japanese vocational training was typically begun in the last three years of secondary school but this training was not necessarily related to a specific craft. Job specific training was done usually but not exclusively on-the-job with varying lengths of time and levels of achievement. Qualifications could also be achieved through correspondence but this was mainly in written subjects. The Japanese values of '*Kaizen*' or constant incremental improvement, which had derived from Confucian principles permeated all aspects of Japanese industry and was commonly rewarded through promotion and bonus packages, it put the focus of training upon the individual and removed that obligation from Government which led to the current Japanese apprenticeship system without any formal structure in national standards.

1.4.2 Recent research in vocational education

The changing purpose of apprenticeship generated a multiplicity and variance of opinions and views, including the primary function of vocational education as demands changed at differing phases of economic cycles. A review of recent academic research in apprenticeship offered a clear baseline of understanding, upon which was added to in

a more comprehensive exploration of the subject in the literature review chapter through the five themes of; (1) Structure, (2) Cultural Value, (3) User Experience, (4) International Perspectives and (5) Opportunities and Challenges facing apprenticeship. The professional identity of apprenticeship emerged from a distinct set of conditions which occurred in Japan and Ireland characterising similar models of apprenticeship, but these twin structures quickly diverged in the advance of global events.

Apprenticeship structure

The formal structure of apprenticeship as regulated and documented by the Guilds in Ireland and the United Kingdom remained largely unchanged up until the 1970's, however the length of time required to become a recognised craftsperson was reduced from nine years, seven as an indentured apprentice and two as a journeyman in 1563 to four years by 1976 (O'Hare, 2013:8, McGuinness *et al*, 2014:12). The experience of apprentices also remained largely unchanged from the medieval period up to modern times according to a study conducted by Vickerstaff (Vickerstaff, 2003:271). In Ireland the apprenticeship period was reduced from five to four years in 1976 and later progressed to a Standards Based System in 1992 (McGuinness *et al*, 2014:12). An OECD report in 1995 stated that Ireland fared poorly in terms of the low emphasis on vocational education and the lack of pedagogical training among instructors when compared to other European Countries (McGuinness *et al*, 2014:17). A model similar to the Guild system operated into modern times in Japan, Egypt and Turkey where trade organisations regulated the apprenticeships (ILO, 2013:5). Japan had a flowering of craft skills during the building boom of the early sixteenth century and the period from the end of the sixteenth century to the middle of the nineteenth century was sometimes called the '*Golden Age of Crafts*' because of the high standards of craftsmanship achieved (Buntrock, 1998:72). Craft development was largely ignored by the government of the Meiji Restoration of 1868 which pushed Westernization policies initially, followed by war preparations in the early twentieth century. It was not until 1959 that Japan introduced a National Trade Skill Test, which was maintained by the Government and implemented by private-sector bodies (Nara, 2010:160). It tested applicants at differing levels or grades based on time served, although a number of exemptions from these exams applied including;

> "*Exemption from some tests is possible under certain conditions (acquisition of instructor's qualifications, passing trade skill verification). For Grade 3,*

> *persons undergoing vocational training (limited to training in the tested trade), and persons attending schools (limited to subjects related to the tested trade), may take tests during the training period or while at school.*" (Skill Testing Department in JAVADA (Japan Vocational Ability Development Association), 2008)

Although none of the interviewees who took part in this research had taken a final exam by any government body and empirical research by the public sector into On-the-job training in Japan was minimal (Kito, 2014:65). A 2004 Japanese Government White paper on Skill Standards outlined the chaotic status of vocational qualifications in Japan when they stated;

> *"Besides, there are numerous public vocational qualifications in many industry and business sectors, though they are not immediately intended for the evaluation of vocational capabilities. Meanwhile, private-sector companies have their own ability-based grade system and in-house certification for use in their own evaluation activities, and a lot of private-sector qualifications are available as well."* (Japanese Government White Paper, 2004:204)

Japanese society in general had evolved and the core column of the traditional '*master-apprentice'* relationship was deemed to be no longer viable in modern workplaces (Gamble, 2001:185). That traditional model of apprenticeship had been under review in a number of countries according to Steedman (2005) who noted that it had been "*experiencing stress*" around the world (Steedman, 2005:21). In 2004, Japan introduced a version of the '*Dual System'* into the vocational educational sector with two days a week in a training school and three days a week on-the-job called an internship education (Na, 2010:13), however Takahashi (2010) stated that vocational education was not included within the framework of postsecondary education and was aimed primarily at youth unemployment (Takahashi, 2010:120,125). The additional challenge of a population in decline meant that Japan was forced to widen the potential population of vocational education applicants as outlined in a public vocational training framework document submitted by the OECD (2012) as;

> *"Therefore, it is important that all the members of society including the young, women, the elderly, the disabled and non-regular workers should pull up their*

> *productivity through their own effort such as receiving vocational training to build a sustainable and vibrant economy."* (Yasuhiro, 2012:124)

Changes to the number of recognised trades, educational pathways and the syllabi of apprenticeship had been initiated in the United Kingdom, Ireland, France, Denmark, Netherlands, Japan and Korea (Fuller & Unwin, 2008:19, Steedman, 2010:7-30, Descy & Barabasch, 2014:15, Na, 2010:12, Gonczi & Hager, 2010:407). These changes were in reaction to reflect changes in industry resulting from the emergence of new technological roles and an acceptance of a decline in educational standards in new entrants to apprenticeship (Steedman, 2005:13). The 2013 review of apprenticeship in Ireland criticised the rigid structure and duration of the programmes while being too focused in one area; the construction sector (McGuinness *et al*, 2014:31). To diversify and help change the image of apprenticeships in Ireland eighty six new apprenticeships were proposed in 2016 in areas ranging from financial services to information technology, divided into two categories of development, Category 1 applied to twenty five apprenticeships (See appendix F) that were more developed and ready for deployment and Category 2 were in the early stages of development (O'Mahony, 2015:7). Although Descy and Barabasch (2014) pointed out PIAAC data which had recently shown that, across a number of countries, the skills level of younger populations was higher than that of adults (Descy & Barabasch, 2014:5).

Steedman (2012) stated that for an apprenticeship model to have credibility it must be managed by the social partners with a legislative framework democratically determined (Steedman, 2012:7). This legislative framework offered security and transparency to both parties, regulating and defining parameters such as status, term length, rights and obligations (Steedman, 2012:22) and the active participation of social partners encouraged a legitimate framework for the apprenticeship model to remain relevant and beneficial to both the apprentice and to industry. There were key common parameters to the structure of typical European apprenticeships as outlined by Descy and Barabasch (2014) as;

1. Having a combination of workplace learning and school based learning.
2. Upon completion, apprentices received an officially recognised certificate.
3. Apprentices had a distinct legal status and signed a contract with an employer.
4. Apprentices received remuneration typically at a percentage of a qualified worker. (Descy & Barabasch, 2014:8)

Countries with a strong cultural value and tradition in apprenticeship have shown how a model of apprenticeship built on a strong quality assurance can have a positive impact on youth unemployment. A good example of this existed in Germany, however despite the strong reputation of vocational training, the German apprenticeship model was not devoid of challenges.

Cultural values that influenced apprenticeship

Apprenticeship cannot operate independently of a country's culture and dominant social norms have strongly influenced the perception and value of vocational education (Descy & Barabasch, 2014:20). Cultural value goes beyond historic practice, it has value and identity as well as the ability of an object to interact with memory which has a recognised value as well (Veco, 2010:324, Kakiuchi, 2014:1). UNESCO (2003) recognised manual skills in the definition of '*Intangible cultural heritage'* in the '*Convention for the Safeguarding of the Intangible Cultural Heritage'* document in Part I, Article 2, Section 2, Sub-Section (e) where '*traditional craftsmanship'* was treated equally alongside preforming arts, oral traditions, rituals, etc. (UNESCO, 2003:2). A good example of how culture has strongly influenced the evolution of a high quality apprenticeship ecosystem was Germany which always had a cooperative rather than confrontational ethos between the social partners (Descy & Barabasch, 2014:22). A cooperative ethos can be difficult to engender even within a small country like Ireland where a cultural dichotomy existed between providers within the craft area. A recent review document produced by the Craft Council of Ireland (2009) which detailed craft education and training in Ireland at each step in the education pathway managed to avoid the word '*apprenticeship'* in all of the ninety-six pages of the report. McGuinness (2014) *inter alia* highlighted how the further education and training sector in Ireland was less clearly defined and of a lower perceived status than that of Higher Education, with further education and training suffering from a lack of national focus and an inconsistent quality of provision (McGuinness *et al*, 2014:viii), (Refernet, 2013:24). Employment prospects have also influenced the choice by young people of vocational education versus higher education and having a skilled workforce was a key element to any country's ability to grow economically. Vocational education was one element in the development of economies as the requirements of industry changed to meet the changing trends of a culture, but a new or existing skill was no guarantee of

employment, nor was the training of people automatically delivering a pipeline of employees as highlighted in a 2011 report by the OECD Skills Strategy unit;

> *"Yet, skilled workers do not automatically earn more; nor does having a highly skilled workforce guarantee sustained economic growth. In some countries, up to one-third of workers consider themselves over-skilled for their current job, and another 13% believe that they are not skilled enough. Even at the height of the crisis in 2009, more than 40% of employers in Australia, Japan, Mexico and Poland reported having difficulties in finding workers with the appropriate skills. And a lot of people are out of the labour market entirely and are not using their skills at all."* (OECD, Schleicher, 2011:1)

In Germany the perception of apprenticeship was that of a viable career and the German dual apprenticeship system was regarded as one of the best in the world, but the full picture was more complex than that. Smith *et al* (2013) described how differing areas of German industry generated different results between industry, crafts and trades with large companies receiving huge interest from prospective apprentices, while small companies in less attractive sectors like butchers and bakers struggled to find any apprentices (Smith *et al*, 2013:8). It was clear then, that not all apprenticeships were created equal, even within a single jurisdiction and the requirements of differing sectors had different standards. Apprenticeships in the Service sector were not as good as those in traditional manufacturing (Dolphin & Lanning, 2011:127). A negative perception of an apprenticeship was difficult to expunge but examples in many countries demonstrated that a nationally recognised apprenticeship certification greatly enhanced the value of the qualification (Steedman, 2012:22). The cultural value of apprenticeship within society was an important element that was highlighted by the Heritage Council of Ireland who stated that;

> *"A standing labour force of skilled conservation craftspeople is an asset to the State, because, as a resource, it provides for the maintenance of the building stock, which, in turn, contributes to the quality of life, the tourism landscape and the economy."* (Starrett, 2013:2)

In Ireland, the establishment of SOLAS (An tSeirbhis Oideachais Leanunaigh agus Scileanna, which translates as: Further Education and Training Authority) in 2011 by

the Minister of Education and Skills marked the latest reform in the governance of vocational education in Ireland. The remit of SOLAS was to oversee the funding, planning and coordination of a wide range of training programmes with responsibility of high-quality further education and training into the next century (McGuinness *et al*, 2014:20). Bates (2011) stated that there were no effective quality controls within the Standards Based Apprenticeship system (Bates, 2011:68). The question of quality control by those responsible for the implementation of the apprenticeship system was cited as a concern in a report by the OECD who recommended that all VET trainers, teachers and instructors should have had some pedagogical training (ReferNet, 2013:31). A recent initiative to restore the reputation of apprenticeship in the United Kingdom was the formation of the National Apprenticeship Service in 2009 (Smith *et al*, 2013:12). Fuller and Unwin (2007) described the perception of apprenticeship in the United Kingdom as a "*third-rate pathway*" with completion rates around fifty percent (Fuller & Unwin, 2007:22). Quality was at the heart of the loss in credibility in apprenticeship as Rauner (2012) outlined through international comparative research, how a direct link between a successful dual system, quality and standards were required to bring skilled employees to the intermediate qualification level (Rauner *et al*, 2012:5), the benefits to the employer also increased with the quality of apprenticeship training (Descy & Barabasch, 2014:16). McGuinness (2014) echoed this sentiment by stating that;

> "*Thus, improved status was seen as following on naturally from enhancing the quality and coherence of the sector*." (McGuinness *et al*, 2014:43).

Apprenticeships have provided a viable career path for the benefit of the individual as well as to society but not if they were of poor quality or offered meagre remuneration (Dolphin & Lanning, 2011:128, Buntrock, 1998:74). Without comprehensive quality assurance a negative cycle was created as the standard of candidates became lower and firms were less likely to hire potential apprentices who did not meet their standards meaning more young people have chosen third level education over vocational education and the standards of apprenticeship declined further (Steedman, 2005:13). As the framework and aims of apprenticeship models became more clearly defined and openly understood, the experience of the applicant was often more difficult matched with an often opaque or confused pedagogical aim.

User experience

The effect of vocational education on the individual generated an interesting perspective in Japanese culture according to Terada (2008) who outlined the negative theory of specialized training popularised by Langevin in 1974 compared to liberal education, believing that vocational education allowed a human to be classified thereby limiting the potential of human expression. This example highlights the key misunderstanding of general Western pedagogical thinking transposed upon Japanese self-transcendence of the individual which originated from Zen teachings but was encapsulated in the concept of '*ba'* (Nonaka & Konno, 1998:40). Terada (2008) disputed the Western view by emphasizing the cultivation of human character;

> *"What is necessary in Japanese vocational education (and its discussion) is to admit that there are both aims of economic means and character formation within vocational education, and it is also necessary to establish the standpoint that the human cultivation of human beings (adults) is implemented (education is completed) by nothing else but vocation."* [sic.] (Terada, 2008:3)

The success or failure to attune the more liberal aims of human personal development with the economic requirements of training a competent technical employee was easily judged by those who have engaged with tradespeople and craftspeople. An example of this was outlined by Crawford (2009) who explored the value (monetary and metaphysical) of practical work and the experience it had on the human character. Crawford (2009) gave an example of a customer who brought his motorcycle to a mechanic for repair and found the mechanic to be completely incompetent, as the customer watched this trained technician damage and break his beloved motorcycle, Crawford described the failure of the apprenticeship model as "*The rise of the idiot"* and posited that what was missing from modern apprenticeship was metacognition, thinking about your thinking (Crawford, 2009:99). This account demonstrated that the primary focus of apprenticeship was an acquisition of knowledge as outlined by Sfard (1998) who argued that vocational education needed to progress beyond the mere acquisition of information into the participation of a community (Sfard, 1998:5,6). This perception of a low emphasis in vocational education over training was also reported in Ireland in the Irish Times newspaper who interviewed an employer about apprenticeship and the perception it suffered, the employer commented that;

> *"There is a snobbery [relating to] apprentice technicians because they can still be looked upon as 'grease monkeys' and [a perception exists] that it is a difficult and dirty job. I believe schools could do a lot more to promote motor technician apprenticeships, but I'm not too sure if they understand the process."* (McGuire, 2016:3)

To develop a training system that valued higher level analysis and critical thinking, it would be useful to reflect upon the motivation and experience of apprenticeship from the user centric perspective of those who actually '*served their time'* in an apprenticeship. Vickerstaff (2003), who interviewed thirty tradespeople about their experience as an apprentice in the years 1945-1980, revealed an experience parallel with the experiences of participants recorded in this research, in both Japan and Ireland, which demonstrated that apprenticeship was a popular option but a difficult experience. Buntrock (1998) highlighted the fact that a Japanese apprenticeship in the Edo period generally took ten years and the qualified artisans were not generally well compensated (Buntrock, 1998:72). The attraction to a trade occupation according to Vickerstaff (2003), was that a trade qualification would eventually lead to better prospects and that surprisingly more Grammar School boys in the United Kingdom (about 20% in the late 1950's) undertook apprenticeships than might have been expected (Vickerstaff, 2003:271-272). This perception has, according to Gopaul (2013) and McGuinness (2014) recently changed in a negative sense in a number of countries across the world including Ireland, where vocational education was perceived as a lower status option in comparison with higher education (McGuinness *et al*, 2014:38) and the attainment of an academic degree had taken greater prominence (Gopaul, 2013:7). The career outcome of an apprentice was important to new entrants and if qualification from an apprenticeship offered increased earnings, stable employment and good career prospects, then potential apprentices would accept lower training wages and the status of apprenticeship would rise (Steedman, 2010:22). The role of a craftsperson has also changed, the mastery of tasks and the performance of high quality skills are no longer sufficient as a skilled worker must also master the work context to achieve occupational profile stability (Steedman, 2012:8).

Promotion of the craft industries has not prevented the decline in the status of the artisan in Japanese society as traditional crafts have been promoted since 1974 while the number of new applicants continued to decline (Kakiuchi & Takeuchi, 2014:14). However, when a clear career path has led to a recognised occupational profile, even in

the United Kingdom, the demand was significant. When British Telecom offered 80 places on their apprenticeship programme, 15,000 applications were received (Steedman, 2008:1). The reasons for choosing the craft career path had changed, typically it was hereditary but recently media has played a role in the career choice of young people. In Asian countries generally, 27% of students cited television as an influence on their choice of vocational education as a career pathway, this rose to 36% in Republic of Korea (Terada, 2009:52). The increased number entering third level education brought with it unforeseen consequences of a skills mismatch, as students who could not find employment to match their education level had lower job satisfaction, lower motivation and productivity and it made it increasingly difficult for those with little or no education to find any employment, apprenticeship, was one potential solution to skills mismatch (Descy & Barabasch, 2014:6).

Factors such as a clear structure built upon unambiguous pedagogical models, a positive and quality experience as well as a definite professional career pathway valued by a society could potentially change the perception of apprenticeship. This begs the question of what was the effect on character of apprenticeship education in other countries when some or all of these factors were absent.

International perspectives

Rauner *et al* (2012) stated that the inappropriate use of the word "*apprenticeship*" or "*dual VET*" contributed to a false expectation and confusion amongst policy makers. This false expectation was reflected within society creating the perception that apprenticeship was an irrelevant veteran, an outmoded or historical educational system that had no place in a modern digital knowledge economy (Rauner *et al*, 2012:5-6). The core mandate of apprenticeship was and always has been buffeted by the vicissitudes of political and industrial demands meaning serious questions regarding the curriculum, pedagogy and assessment of VET were frequently raised (Fuller & Unwin, 1998:155). Although, according to McGuinness *et al* (2014) the Irish model of apprenticeship had been seen to offer lessons to the United Kingdom where apprenticeships were rebranded as '*Modern Apprenticeships'* (McGuinness *et al*, 2014:xii). In the research conducted by the International Labour Organization (2013), it was found that there was confusion around the use of the word apprenticeship as it was interchangeable with terms such as; traineeship, artisan, learner-ship, journeyman and internship, which all related to work based learning (Gopaul, 2013:6). The multiplicity of policy aims and roles for

apprenticeship also diluted the meaning of apprenticeship in society (Mazenod, 2014:1). The confusion around the meaning of apprenticeship was an indication of the modern decline in the status of apprenticeship in many countries. This devaluation was especially evident when compared to the favourable status enjoyed by the apprenticeship model during the time of the trade Guilds in the thirteenth century, when a fee had to be paid to the Master in order to be accepted as an apprentice, meaning only affluent families could set up a son in a new trade (Thomas, 1929:2). A trend that continued up until the late twentieth century when there were more young men then there were apprenticeships available, with the confidence that an apprenticeship would lead to better prospects (Vickerstaff, 2003:272). Nyhan (2013) stated that European countries with strong apprenticeship programmes had the lowest youth unemployment rates, the exception being Ireland due to the concentration of trades in one industry, construction (Nyhan, 2013:5). Mazenod (2014) stated that in the United Kingdom, apprenticeship was chosen by less than ten percent of the 16-18 year old cohort compared to two thirds of a similar cohort who were engaged in apprenticeship training in Germany and half in Switzerland (Mazenod, 2014:2, Stedman, 2008:1), although Mazenod and Steedman admitted that direct comparison of apprenticeship had been difficult as official data on apprenticeships was collected using different parameters (Mazenod, 2014:7, Steedman, 2008:2, McGuinness *et al*, 2014:vii). Fuller and Unwin (2007) pointed out that the United Kingdom was a good example of an apprenticeship in trouble compared to its European counterparts and has been for the past twenty-five years (Fuller & Unwin, 2007:21). Steedman (2005) believed that the future of the expensive dual system in Europe was doubtful (Steedman, 2005:22).This pattern had been witnessed before, in North America, where apprenticeship began to decline from the middle of the nineteenth century and effectively disappeared, which may have resulted from the fact that throughout North America there were no guilds or formal certification process in any craft (Hamilton, 2000:1), with the recent apprentice population in the United States at 0.3% of the working population (Smith *et al*, 2013:5). The economic and social value of the apprenticeship paradigm varied with each country which has led to new variants which were designed to address the issues faced by the traditional apprenticeship model in changing times which offered evidence of potential solutions for future policy.

Opportunities and challenges facing apprenticeship

The perception and experience of the modern apprenticeship system in the West has gone through difficult times due to the nature of supply led apprenticeship being tied directly to economic cycles (Steedman, 2012:19). Buntrock (1998) stated that there were several factors required for craft skills and tacit knowledge to thrive: a large lower labour class, discerning customers, political stability, limited access to outside technology or materials and a loose training system that required an individual to focus on technological development. These factors which have contributed to the craft trades in Japan having achieved unique levels of ability, have changed, as many of these factors no longer exist (Buntrock, 1998:71-73). Most industries categorized as creative have declined, despite the fact that creative industries were strong in value creation compared to all industries (Kakiuchi & Takeuchi, 2014:1-9). In Ireland, the collapse of the construction industry which employed an overwhelming number of apprentices, revealed the weakness of having such a narrow focus in the field of apprenticeship and it also exposed the cost of the dual system as being one of the most expensive in Europe (Nyhan, 2013:3). The large decline in the number of apprentices (4,514 in 2006 to 222 in 2012, a 95% decline) (Bridgford, 2013:16), created a crisis that forced the introduction in 2008 of the Employer Based Redundant Apprenticeship Rotation Scheme to facilitate apprentices who had a short time remaining in their apprenticeship to finish their training in a training centre (O'Hare, 2013:21).

A counterpoint to the argument of expense against the dual system of apprenticeship was the real value delivered to an employer by minimising a potential skill mismatch as well as benefiting from a contribution to the business of new ideas with better quality of services and products (Descy & Barabasch, 2014:16).

The traditional labour progression pathway of school-training-job has changed and many young people who entered the workforce changed employers and careers several times during their working lives. Apprenticeship was trying to be relevant while locked into the prescriptive framework of an apprentice engaged physically but not mentally in doing or making some artefact that was not actually required in the outside world (Bates, 2011:13). Buntrock (1998) offered this potential pathway for sustained growth in craft skills by;

> "*By recognising those factors which supported the development of craft and concentrating on what should not be lost-specific technologies, proficiency with certain materials, broad versatility, an openness to innovation – and developing*

> *complementary and coordinated strategies between architects, artisans, and the construction industry as a whole, not only can craft be maintained, but it can perhaps even be reinvigorated."* (Buntrock, 1998:75)

So while people have needed a certain set of skills to begin employment, they have also needed the ability to change and adapt their knowledge and thinking to incorporate new technologies and innovations. This change was reflected in the changing nature of apprenticeship and innumerate reviews, with new apprenticeships in technology and a blurring of the lines between third level education and apprenticeship training programmes have been proposed in many developed countries which suggests that the future of the Irish and Japanese apprenticeship models can expect uncertain progressions from the traditional apprenticeship model.

1.5 Research questions and themes

From the preliminary research into the area of apprenticeship of both Ireland and Japan, five clear themes became apparent that merited further investigation, these were;

- To determine the fundamental policies and partnerships that created the structures for an applicant to become a qualified craftsperson with a focus on the mechanics and quality assurance of the apprenticeship system.
- To investigate the cultural influences and social changes that have affected the value of apprenticeship in society and how the different cultures may or may not have prejudiced the methodologies used in the transfer of tacit knowledge.
- To examine the experience of those who had gone through, or were going through, the apprenticeship system, in order to discover whether it was of value, how much time was given to the transfer of skills and knowledge, and how the relationship between an employer and an apprentice functioned?
- To explore the experience of other apprenticeship models around the world in order to identify common core elements of vocational education that have used both positive and negative practices.
- To understand the prospects and progression pathways for a newly qualified apprentice in both countries and determine if they were equipped with the

skills necessary to become a successful independent craftsperson in a rapidly changing world.

These themes formed the basis for the interview questionnaire which was piloted and adjusted to suit the different cultures. The additional challenge of conducting the exact same interview in a different language and culture manifested itself in unexpected ways. Finding Japanese people in Japan to engage with the research proved extremely difficult as the Japanese culture of avoiding embarrassment meant that they would prefer not to speak to someone who was not fluent in Japanese and even then, would give a vague or deflective answer rather than admit they had no experience of a certain aspect of the area being researched. The answers were recorded typically in the houses or workshops of the Japanese artisans and in the workplace of the Irish participants using a Dictaphone, with the recorded interviews transcribed into a word document, analysed and are presented in the Data Presentation chapter with a brief profile of each participant given in Appendix C.

1.6 Summary of chapter

This chapter introduced the nature and motivation of the research as well as how this led to the framing of the research conducted. The aims of the study were outlined including the methodology used to achieve these objectives. An outline of the paradigm of apprenticeship tracing the historical lineage which created the bedrock principles of apprenticeship that evolved and developed over time in reaction to social and industrial trends was explored. The outline of the research conducted was introduced including the five themes of the research which is more fully developed and investigated in succeeding chapters where a detailed look at the development of the apprenticeship model evolved in each country and how the current systems were valued in each society. What vocational education meant to those involved and the international perspective on apprenticeship offered is also explored along with the current challenges and opportunities facing apprenticeship in Ireland and Japan.

Chapter 2 Literature Review

2.1 Introduction

The first theme explored in this chapter is how the vocational educational model has evolved from historical beginnings into the modern format of apprenticeship identified by society. The research then proceeds to outline some recent documentary research on apprenticeship that describes the dendritic evolution of the apprenticeship models in Ireland and Japan tracing how similar systems diverged down very different paths through statutory developments. The second theme examines how culture has influenced the apprenticeship model and how Asian cultures, especially Japan, have been misrepresented in research and characterizations for generations leading to common misconceptions of Japanese practices. The third theme explores how vague definitions of the terms used in apprenticeship education has led to confused aims and pedagogical models as well as key educational concepts have influenced or could influence the content and focus of the training and education of apprentices in both countries. The fourth theme reviews the wider global perspective of practices in apprenticeship to determine if a pattern exists and how it may impact upon apprenticeship in Japan and in Ireland. The final theme explores what economic impact an apprenticeship has upon the individual and upon society generally, either positive or negative.

Observed from a macro level, Japan and Ireland appear to share a number of characteristics, both were island nations on the fringe of respective continents, were deeply intertwined with the culture of their nearest neighbours and yet both had retained distinct identities, such as maintaining a unique language. Each nation had cultivated a strong craft tradition as demonstrated by the Book of Kells circa 800 AD in Ireland and by the sword making skills of Ko-Bizen Masatsune late 10th –early 11th century Japan (Takaiwa *et al*, 2006:162). Although there were similarities that existed between the two nations from a craft perspective, they had also shown themselves to be quite different in the fundamental philosophies that framed the ideologies of apprenticeship in both countries.

For example, Japanese culture contains a word '*kaizen*' that translated roughly as '*continuous incremental improvement'* (Pringle, 2010:1), but it was more than a word, it was also a philosophy derived from Zen teachings that focused on the development of the individual by the efforts of the individual, a philosophy that had no direct equivalent in Irish culture. Toshio Odate (1984), who was a *Tategu-Shokunin* or Master sliding door maker, best described this Japanese attitude as follows;

> *'While returning home from a seminar in Atlanta, Georgia, recently, the word shokunin came to mind. This Japanese word is defined by both Japanese and Japanese-English dictionaries as "craftsman" or "artisan", but such a literal description does not fully express the deeper meaning. The Japanese apprentice is taught that shokunin means not only having technical skill, but also implies an attitude and social consciousness. These qualities are encompassed in the word shokunin, but are seldom written down'.* (Odate, 1984:viii)

An artisan who creates their own design or is a first generation artist/artisan are designated a specific title such as '*togeika'* which means '*artist potter'* and is lower in status than a '*shokunin'*(Philip, 1989:47). The Western perspective of apprenticeship was merely the instruction of adequate technical proficiency. Unwin and Fuller (2004) wrote, the general understanding of apprenticeship was that of a journey of development in which a beginner grew and learned to become an expert in a particular field of knowledge. This tradition or process was reflexive centric with the primary aim of information transfer as opposed to the development of the individual seen in Eastern cultures and the knowledge and practices were passed on to the next generation of learner, which created a continuity within the community of practice (Fuller & Unwin, 2004:95). This chapter explores the developmental journey of apprenticeship by factorising the paradigm of apprenticeship into the five areas;

1. The evolution and structure of the statutory apprenticeship in Ireland and Japan through the centuries to understand how the characteristic deficits of each system became part of the DNA of each apprenticeship model.

2. The cultural values that influenced craft skills as societies and economies changed and the role quality assurance in each apprenticeship system played in the devaluated currency of societal creditability.

3. The definition of terms such as 'vocational education' versus 'vocational training' to reveal how a lack of clarity can lead to vague outcomes in the pedagogical models used in apprenticeship as well as the experience of apprenticeship from the users' perspective beginning with the medieval period up to recent times.

4. The international experience and attitude on apprenticeship and vocational education in several countries with contrasting cultures to determine if

patterns can be identified that may predict the paths of both the Irish and Japanese apprenticeship models.

5. The economic challenges that were faced by the modern apprenticeship model and how it adapted or not to changing demographics and technologies.

Each element contributed to a more holistic and comprehensive understanding of an area of education which has weathered millennia and potentially offered society more than the sum of its parts. The chapter concludes with a summary of the research examined in this section.

2.2 Apprenticeship structure

Understanding the different paths taken by the social partners responsible for the implementation and governance of apprenticeship in Ireland and Japan was interesting, as direct comparisons and similar timelines of statutory evolution emerged. A contrast of the two systems to other and older apprenticeship systems such as those which operated in medieval Europe displayed a fractal pattern in the structure of vocational training in many cultures. An examination of each apprenticeship system separately revealed a clear distinction in the philosophical tenets of each model, offering a more complete understanding of the character in the paradigm known as apprenticeship within Japan and Ireland. The complete narrative of how apprenticeship has grown and decayed is explained by the changing demands of industry and Government in Europe and Japan from the early days of the Guilds to recent times.

2.2.1 Historical background to apprenticeship

Apprenticeship was recognised as the oldest form of vocational education (Rauner *et al*, 2012:3), known to have existed before 3000 B.C.E. in Mesopotamia (Ryan, 2000:25) with a revival in recent years primarily as a solution to youth unemployment. But, apprenticeship deserved to be treated with more respect, being one of the most established forms of education and certainly the oldest form of industrial education recognised by society (Mays, 1952:14-15). Lave and Wenger (1991) stated that;

> "*The historical significance of apprenticeship as a form for producing knowledgably skilled persons has been overlooked, we believe, for it does not conform to either functionalist or Marxist views of educational "progress". In both traditions apprenticeship has been treated as a historically significant object more than most educational phenomena – but only to emphasize it anachronistic irrelevance*." [sic.] (Lave & Wenger, 1991:62)

Bates (2011) identified three broad phases of apprenticeship development over the past 800 years in Great Britain and Ireland, beginning with (1) the guild system which introduced the formal contractual apprenticeship, this operated from the twelfth to the fifteenth century, followed by (2) a statutory apprenticeship governed by the Elizabethan Statute of Artificers of 1563. This Act mandated the entry into skilled trades through apprenticeship lasting seven years or longer, terminating at age twenty-four or older (reduced to age twenty-one in 1778) (Elbaum & Singh, 1995:596). This statutory period lasted until the nineteenth century which was then replaced by (3) the voluntary industry regulated apprenticeship which began in 1814 with the repeal of the Statute of Artificers Act (Bates, 2011:3, Minns & Wallis, 2013:337). Though, apprenticeship did not just appear with the formation of Guilds, it existed informally for generations, with parents passing skills on to their children in many crafts. As a method of teaching and learning, apprenticeship stretched back to the Iron Age, as a social institution, it can be traced to the beginning of recorded history. Prehistoric industry was concerned with the making of tools, weapons, utensils, clothing and the provision of shelter. The learning by the young to make such articles was the earliest form of industrial education, artefacts of stone, clay, bone, copper, and bronze have been found in sufficient quantity to demonstrate evidence of successful transfer of skills and technical knowledge from one generation to the next.
As societies evolved into a more rigid hereditary of social and economic stratification, the typical practice in craft areas became the hereditary path, with sons following in the footsteps of the father.

> '*… throughout antiquity the tendency toward the inheritance of a trade from father to son is quite marked*' (Waterman, 1974:610).

This tradition of hereditary knowledge transfer, even to those who may have been adopted by a craftsman into an apprenticeship was said to be common long before it

was first recorded in 1230 A.D. as a normal custom in Western culture, according to a history of apprenticeship by Thomas (1929:31) and Washington State Department, (2015). Although Ben Zeev *et al* (2015) stated that in Britain, the incidence of young boys being apprenticed to their fathers was fairly low (Ben Zeev *et al*, 2015:4) while in Japan apprenticeship began at ages of nine and ten before compulsory secondary was introduced (Brown, 1989:23). This hereditary tradition was also referred to by Plato;

> *"And surely if a craftsman because of poverty cannot supply tools and other requisites for the trade, the work will be rather poor and his sons or others whom he may be teaching will be poorly taught workmen.*" (Westermann, 1914:610).

Direct inheritance of a trade was not always possible and a boy could be adopted into a family for the purpose of learning a trade as laid out in the Babylonian Code of Hammurabi (2285-2242 B.C.E.);

> "*If an artisan has taken a son to bring up and has caused him to learn his handicraft, no one has any claim. If he has not caused him to learn his handicraft, that nursling shall return to his father's house.*" (Johns, 1905:20)

The issue of quality and status of apprenticeship was not a modern phenomenon and the word '*banausic'* was used by Westermann (1914) when speaking about the craft area;

> "*… this was the idea that all forms of manual labour and retail trade were "banausic".*"[sic.] (Westermann, 1914:601)

Westermann (1914) wrote that this pejorative term was used by Socrates and Plato because it was believed that agriculture kept a man fit for battle where a retail trade did not (Westermann, 1914:601). Plato was not the first to criticise the craft area with reference to the issue of a credible quality assurance system often contributing toward a negative perception of the craft skills in society through the centuries. The statutes of guild regulation for the Weavers of Toulouse, France devoted almost two-thirds of the document to issues of quality control (Wolek, 1999:405). Even in 1271, the issue of quality assurance was a source of concern, regulated by the Mayor and Commune in

London, where only Masters of '*good fame'* could recruit an apprentice for a period of no less than ten years (Thomas, 1929:32).

The discovery of papyri indentures, ('*indenture'* derived its name from the English practice of tearing indentations or notches in duplicate copies of apprenticeship forms (Washington State Department, 2015)), in the tombs and ancient rubbish dumps of Egypt, substantiates the existence of a form of contractual apprenticeship, also known as a covenant or '*pactum*', the earliest dating from the year 18 B.C.E., almost identical with the contractual apprenticeships of Medieval Europe (Westermann, 1914:604). A slate tablet discovered in Springmount, Co. Antrim, currently housed in the National Museum of Ireland was inscribed with an apprenticeship contract dating back to 628 A.D., it set out the terms of an apprenticeship to last two years and five months in the trade of exorcism and cleansing, for which a premium of two shekels of silver was paid to the Master (Ryan, 2000:28). The Springmount wax tablets from Ballyhutherland, Co. Antrim, were interpreted as being used in the training of apprentice scribes because two hands were frequently represented on the tablets, one much more competent than the other. The writing surface was waxen in a recessed space on the tablet and could be reused repeatedly for purposes of teaching students who may have been serving some variant of apprenticeship, although the content of these wax tablets were ecclesiastical in the majority of cases (O' Meadhra, 1979:13). Records of apprenticeship were meagre in the early part of the Christian era and do not reappear until the growth of the city states during the closing years of the eleventh century when Guilds emerged as an organised political, economic and social force in industrial training as the traditional '*Kin'* structure evaporated in the new industrial age (Ryan, 2000:29).

Guilds were a group of local craftsmen who formed local monopolies partly to allow their crafts to survive in the face of competition with products coming in from other areas and countries and partly to ensure standards of workmanship (Epstein, 2008:158). The word '*Guild'* was derived from the Dutch word for money '*gelt*' or '*gilda*' which was a reflection of its economic underpinnings (Brockmuller, 2008:68). Apprenticeship in Europe reached a peak in social status and recognition during the middle-ages from the 5th to the 15th century, as a method of achieving the vaunted position of a qualified skilled craftsman. Often a fee, known as a '*Premium'* was paid by the potential apprentice or their family to become an apprentice (Minns & Wallis, 2013:336) as it was seen a social step up in status, personal security and an assurance of a reasonable livelihood (Wolek, 1999:403). This knowledge possession acting as a

passport into certain social positions was a model that was observed in modern times by Sfard (Sfard, 1998:8). Premiums charged by Masters varied on the prestige of the guild, ranging from nothing for Plasters, Blacksmiths and Butchers, to a few months wages for a Stonemason or Weaver, to a year's wages for the highest prestige trades of Grocer or Bookbinder which equated to £12 for an unskilled building sector worker in provincial England (Minns & Wallis, 2013:343). This economic and social elevation was conferred upon the apprentice who successfully produced a '*masterpiece*' of sufficient standard to become a member of the '*enfranchised aristocracy of the City'* (Thomas, 1929:2). By the early 13th century in London, an apprentice had to be enrolled by his Master into the register of the City of London and the Master would have responsibility to house, clothe and feed the apprentice in sickness and in health, which was the same system that existed in Japan in the area of traditional crafts until recent times. This obligation was recorded in apprenticeship contracts in the United Kingdom until the 1950's although it was by then essentially obsolete (Vickerstaff, 2003:276-280). Thomas (1929) stated that up to the years of 1299-1300 there existed multiple laws and regulations and it was understood by all the stakeholders involved that apprenticeship must not be degraded into some form of child labour and that an apprentice was being inducted not only into the mastery of his/her craft but also into civic participation (Thomas, 1929:37, Minns & Wallis, 2013:338). In the epoch of proto-industrialisation, apprenticeship was a social phenomenon of an exclusive town society like the City of London, regulated by the Guilds. The Guild structure regulated the standards of workmanship and its governing and teaching functions were stabilising factors at a time of weak, uncertain government and inefficient markets. Apprenticeship achieved considerable social and commercial importance under the organisation of the Craft Guilds who also legislated and regulated apprentice numbers (Epstein, 2008:162). There was debate as to whether or not they stifled or encouraged development and efficiencies in their respective areas but there was general consensus that Guilds ensured the quality of the products they produced (Brockmoller, 2008:68). Although Guilds in Britain were much weaker than the Guilds in Europe (Ben Zeev *et al*, 2015:3). The Guilds did protect their members from competition by regulating the numbers admitted to the Craft and by imposing high standards of workmanship;

> "*Apprenticeship is listed as one of the guild's greatest contributions and attained this status because it fosters both an understanding of how to work and*

> *the arduous practice needed to develop novices into both competent workers and proud members of respected trade groups."* (Brockmoller, 2008:69)

Abuses began to appear in the Guild system in the seventeenth and early eighteenth century and increased with time; as did the number of apprentices who got their contracts cancelled by the city of London's Lord Mayor Court, about one in ten according to Minns and Wallis (Minns & Wallis, 2013:338). The enforcement of apprenticeship contracts was still an issue in 2012 as highlighted by the European Trade Union Confederation (Steedman, 2012:7). The attainment of master craftsman status became more difficult for journeymen not favoured by the senior Guild members. Another issue with the Guilds was that they did not show concern for the welfare of apprentices and did not prevent the physical abuse inflicted by Masters on apprentices and did not introduce any regulation when it came to Masters not explaining to apprentices how their practices worked, insisting only an acquisition model of training (Sfard, 1998:4) with an emphasis on imitation, forcing the apprentices to '*steal the knowledge'* deliberately preventing or encouraging apprentices to think independently or adapt new technologies (Wolek, 1999:410). While the guilds developed malpractices and rigidities, major economic changes were occurring, with the shift from local to national economy in the form of increased international trade which struck deep at the roots of the Guild system. Wolek (1999) highlighted the fact that most guild members were on the margin of subsistence and the focus of members was on the stability of a reasonable livelihood rather than the expression or perfection of an art (Wolek, 1999:404). An interesting correlation between modern Japanese craftsmen and women of the twenty-first century and the members of the Medieval guilds was how the Japanese crafts people had to negotiate with wholesalers to achieve a sustainable price for their craft goods, with the example related by Epstein who stated that the Guilds objected to contractual changes in the mid sixteen hundreds imposed by the merchants citing the example of the Wildberg Guild which was very much under the thumb of the Calw merchants (Epstein, 2008:163-164).

The traditions, structures and control of the Guilds in the United Kingdom and Ireland began to decline in the mid-to-late eighteenth century (Epstein, 2008:156) with the repealing of the Statute of Artificers in 1814 and the passage of the Municipal Corporation Act of 1835 which deregulated the controls of the Guilds (Elbaum & Singh, 1995:594). The governance of the Guilds officially ended in Ireland with an act of parliament in 1846 (Ryan, 2000:47) in their role of discouraging dishonesty, defining

standards of acceptability and training apprentices according to Wolek (Wolek, 1999:411). This responsibility became the remit of Governments and newly emerging Craft Unions which in Ireland evolved into the Irish Trade Union Congress in 1894 (Ryan, 2000:47), while specialisation in industry reduced the need for apprenticeships in the processing industries (Epstein, 2008:161).

In Japan, the artisan stratum of society also declined albeit a century later with the modernization and industrialization of Japan as the Meiji Restoration of 1868 enacted a reversal of the isolationist policies of the Tokugawa Shogunate from 1633 until 1853 (Buntrock, 1998:72). The traditional length of apprenticeship in Japan was initially increased to ten years in an attempt to prevent skilled employees leaving employers during a skills shortage (Nagata, 2007:40) but was later reduced under the Meiji Restoration from ten years to five and a rise in educational structures meant that apprentices began at a later age than before (Buntrock, 1998:73). On the other side of the globe, the modern framework of apprenticeship in Ireland was hammered and shaped by political and economic forces.

2.2.2 The evolution of the Irish apprenticeship structure

The rich archaeology of Ireland has shown that an apprenticeship of some kind operated in the Iron Age, which existed from 600 B.C.E. to 400 A.D. with apprentices or learners using antler bone (See Appendix J) or the long bones of cattle to practice designs before using these designs on expensive metals, these practice pieces were known as '*trial pieces'* or '*motif pieces'* (O' Meadhra, 1979:3). The earliest mention of a formal apprenticeship in Ireland, referred to as '*fosterage'*, was recorded in a document of ancient Irish Law, known as the Brehon Laws compiled around the 7th century A.D. (Ryan, 2000:32, 48). During this period, apprentices were required to perform all kinds of menial tasks for the Master, including; reaping his corn and feeding his pigs (Ryan, 2000:42). Largely unchanged into modern times, the Irish apprenticeship system was based on the '*time served'* or traditional Guild model which began officially in Dublin 1192 under a charter granted by Prince, Lord John, which attempted to exclude native Irish applicants (Ryan, 2000:48), this became official policy following the Reformation with the introduction in 1692 of a law that specifically banned Catholics becoming Freemen of the city, which guild members were designated, meaning that Catholics could not hold office, bear arms or become Aldermen (Hill, 1997:28). There were few safeguards or quality assurance checks on the competency of the master or apprentice as he progressed through his training. The Common Council loosely regulated any

deviation of standard by opening the trade to all if proper standards were not met (Webb, 1917:507-508, Ryan, 2000:43). It was this framework that was established under the Guild system which remained in place for centuries.

Ireland adopted this closed guild system while under Anglo-Norman rule (Ryan, 2000:43) and despite several reviews, training bodies and statutory changes remained largely unchanged until a credibility crisis of vocational training culminated in 1987 when the imperative to fundamentally change the focus and update vocational training and education in Ireland became obvious following a meeting of the Government, Trade Unions and Training Authorities, officially known as the '*Social Partners'* (Canning, 2007:6). It was felt that a more fair system that offered access to all and involved a greater interaction between employers and educational bodies was needed; the result was a state regulated Standards Based Apprenticeship (O'Connor & Mullins, 2004:8). This radical change of training ideology was intended to offer better quality assurance and an improved education for apprentices in a new apprenticeship model based on standards rather than time served.

In Ireland, the old time served apprenticeship evolved from the pre-industrial practices of the Guilds who fixed the apprenticeship term at seven years long in 1573 (Ryan, 2000:44). The apprentice lived with his employer throughout that time, being required to produce an '*apprentice piece'* at the end of his/her apprenticeship which demonstrated his/her skill to be approved by the members of the local Guild. This allowed the apprentice to progress into the final phase of training which was to become a '*Journeyman'* for typically three additional years (Berry, 1905:324) marking the formal end of the training period. Apprentices of this time were also expected to defend the city, remnants of this could still be seen in recent times with the Apprentice Boys of Derry march (Ryan, 2000:45).

1898 – 1950 Proto-modern apprenticeship

As the agricultural system became more mechanised, the need for labour in agriculture declined and a focus on industrial production resulted in the state intervening more and more in education and training. Ireland experienced a late introduction to regulated vocational education compared to the United Kingdom and Japan, largely because of the agricultural dependence, the low status of manual work and the Catholic Church's emphasis on academic education (McGuinness *et al*, 2014:9). A commission on Technical Training began a review of apprenticeship in 1926 which culminated in the passing of the first Apprenticeship Act of the Irish Free State in 1931. The 1931

Apprenticeship Act was designed to address some of the deficits created by the earlier 1898 Act which was criticised for the academic focus of the curriculum at the expense of the needs of industry (McGuinness *et al*, 2014:9);

> *"Under the Agriculture and Technical Instruction (Ireland) Act, 1898, the powers of the Department with reference to the provision of the technical instruction were limited to instruction in the principles of science and art applicable to industries, and did not include teaching the practice of any trade or industry or employment. The act must have visualised the existence of complete workshop facilities being available to the apprentice in his employment when it failed to include the teaching of the actual process of the trades. If such facilities formally existed, there is little doubt that as the range and variety of work in each trade demanded a certain degree of specialization, workshop training proved to be entirely inadequate for any form of apprenticeship*." (McElligott, 1966:113)

The earlier 1930 Vocational Education Act did allow training facilities to be developed over the following twenty years, laying the path of the modern '*dual system'* apprenticeship, combining time spent in a training college as well as on the job. The priority of using apprenticeship to service the needs of industry put apprenticeship under the control of the Minister for Industry and Commerce and not Education. It was however, an important step toward complete Government oversight and regulation of the apprenticeship model in Ireland.

The most important features of the 1931 Apprenticeship Act that changed the character and structure of apprenticeship were:

1. The establishment of Apprenticeship Districts and Committees by the Minster for Industry and Commerce.
2. The establishment of rules by Apprenticeship Committees relating to:
    a. Designation of trades.
    b. Duration of apprenticeship.
    c. Wage rates for apprentices.
    d. Maximum working hours of apprentices.
3. Individual Apprenticeship Committees were empowered to make rules relating to:

a. Entry qualifications
b. Age limits of those wishing to enter an apprenticeship.
c. The training of apprentices within the District.
d. The number of apprentices employed by an employer based on the ratio of skilled men to apprentices.
e. Apprenticeship fees/premiums.
f. Attendance of apprentices without loss of pay at courses of technical instruction.

The 1931 Apprenticeship Act became more of a voluntary code, than any law enforced and as a result it achieved very little;

> *"Unfortunately, the intention of the Act was nullified by leaving optional to the Committee the making of a rule requiring employers to train and instruct apprentices employed by them in a specific manner."* (McElligott, 1966:114)

It was becoming apparent that the model of apprenticeship needed reform and so the second Apprenticeship Act of 1951 passed into law, outlining the aims in the introduction;

> *"An Act to make better provision for the regulation of apprenticeship in certain trades and for that purpose to establish a body to be known as An Cheard Chomhairle and to define its powers and duties, to repeal the apprenticeship Act of 1931, and to provide for other matters connected with the matters aforesaid."* (Irish Statute Book, 1959, 5/1967, ss. 7 (1) (3), 49)

In Section 39, Subsection 2, paragraph (a) of the Act the word '*required'* was used without any qualifying conditions such as those set out in the 1931 Apprenticeship Act in relation to an apprentice attending a college course appropriate to his trade. The 1959 Apprenticeship Act marked an important step in the quality of the structure of apprenticeship as it made the attendance of off-the-job training mandatory, notice of which was sent in writing to the employer and the apprentice and the Act also stated that the apprentice must be paid by the employer while attending off-the-job education (Irish Statute Book, 1959).

1958-1993 The modernization of apprenticeship

The 1969 Apprenticeship Act was much more comprehensive in the educational governance of apprenticeship, building upon the 1959 Act by creating a dedicated body charged with the management and development of the apprenticeship area. The 1969 Apprenticeship Act created An Chomhairle Oiliúna (AnCO, A national training authority) and its duties included:

1. Provide for the training of persons for the purposes of any activity of industry.
2. Promote, facilitate, encourage, assist, co-ordinate and develop the provision of such training.
3. Provide or secure the provision of such courses or other facilities for the training of persons.
4. Approve such courses or facilities provided by other persons.
5. Make recommendations with regard to the nature and length of the training.
6. Make arrangements for the application of tests or other methods for ascertaining the attainment by persons employed in an activity of industry or intending to be so employed of any standards recommended by An Chomhairle and award certificates of the attainment of those standards.
7. Assist persons in finding facilities for being trained for employment in an activity of industry.
8. Carry on or assist persons in carrying on research into any matter relating to training.
9. Pay maintenance and travelling allowances to persons attending courses provided or approved by An Chomhairle.
10. Pay fees to persons providing further education.
11. Grant scholarships to such persons as An Chomhairle selects in such manner as it considers appropriate.
12. Award prizes to such persons employed in an industrial activity.
13. Pay allowances to persons employed in an industrial activity or intending to be so employed who are going outside the State for the purpose of undergoing training or taking part in competitions and are selected in such manner as An Chomhairle considers appropriate. (Irish Statute Book, 1967)

This was the professionalization of apprenticeship in the pedagogical sense by making education, research and promotion a core part of AnCOs purpose. It was a return in part to the 1898 Act which had an academic focus, but the 1967 Act was more balanced in

its aims. This was recognized from the start by the administration of AnCO which stated in its first annual report that;

> *"The kind of training given to the apprentice at his place of work determines to a large extent the degree of skill and craftsmanship which he will develop in his trade. The training provided off-the-job in technical schools adds to his skill and broadens the entire scope of his training. The technical school courses include subjects of general education and therefore, adds significantly to the individual during his apprenticeship".* (An Chomhairle Oiliuna, 1968:12)

The focus was now shifting back to the development of an individual as much as developing a productive tool for industry. In 1970 the Council of AnCO appointed a special committee to review the existing apprenticeship system. This special committee received reports through the conduit of the Industrial Training Committees which were an early form of social partnership in charge of monitoring and developing the apprenticeship model. Members of the Industrial Training Committee were comprised of employers, trade unions and educational groups. A sub-committee was set up to make recommendations they considered necessary to improve the apprenticeship model, at the same time, AnCO carried out an independent survey on apprenticeship. An issue that was to become a reoccurring issue for apprenticeship in Ireland was demonstrated when AnCO itself came under criticism in this period for the lack of formal pedagogical qualifications of its' teaching staff that raised questions about the pedagogical competence of AnCO instructors who were highly skilled craftsmen with industrial experience but lacked third level qualifications (O'Hare, 2013:10). The combined effort of these initiatives should have led to greater improvements in the apprenticeship with a strong emphasis on vocational education as well as vocational training but resulted in a divergence of opinion between the two groups of industry and educationalists (Murphy, 1974:10).

In 1986 a Government White Paper was published on Manpower Policy, analysing the role of the various stakeholders in training and employment. It stated that the apprenticeship system needed to be revised and modernised with a view to developing a Standards Based Apprenticeship (SBA) to ensure a balance between cost and quality. It also proposed that employers should have primary responsibility for the training of employees with government assistance in the form of grants. It also called for a single

authority that would be made up of the various state bodies including AnCO, National Manpower Service, Youth Employment Agency and CERT (which translates as Hotel Catering and Tourism), this single authority, it was suggested, should be called the National Manpower Authority but became FÁS (Foras Áiseanna Saothair, which translates as the Training and Employment Authority), under the Labour Services Act 1987 (Garavan *et al*, 1995:76).

This marked a key change in policy for apprenticeship in Ireland with the aim of ending the last vestiges of the old '*timed served apprenticeship'* which began officially in 1192, being completely replaced by the Standard Based Apprenticeship, meaning that apprentices were required to pass state exams in addition to serving a minimum training duration to become a qualified crafts person, in the expectation of better qualified and more skilled tradesmen.

The Labour Services Act (1987) established FÁS which would subsume AnCO, the National Manpower Service and the Youth Employment Agency but not CERT who, argued through the Tourism Board that they should remain separate. The key duties of FÁS as set out in the Act included:

- Provide training and retraining for employment.
- Managing employment schemes
- Preform an advisory role.
- Facilitate local groups in the provision of employment.
- Collect research and publish information relating to training and employment.

The Board of FÁS was made up of various social partners headed up by a chairperson appointed by the Minister for Labour. The Chairperson of FÁS managed a board comprised of four representatives of ICTU (Irish Congress of Trade Unions), four representatives of employers and two worker directors from the staff of FÁS. The new body introduced many new initiatives including a review of apprenticeship in 1988 called '*Apprenticeship – A New Approach*' (Garavan *et al*, 1995:79).

In 1992 the Culliton report entitled '*A Time for Change: Industrial Policy for the 1990s'* by the Industrial Policy Review Group outlined a number of reforms needed in Irish industry including a recommendation that new structures were needed to address the inadequate training by employers and that a greater proportion of FÁS resources should be directed toward those looking for employment as well as those in employment (Culliton, 1992:89). In 1999, the Qualifications (Education and Training) Act was passed into law and created a single national qualifications framework for all

educational levels in all areas and levels of education including vocational education, further education and higher education (Buck & McGinn, 2005:10).

1993 – 2013 The Standards Based Apprenticeship

The statute change from the old time-served based apprenticeship model with intermittent off-the-job training undertaken by the majority of apprentices occurred in 1993, although it was difficult to state exactly how many apprentices did not or could not attend Technical Colleges but it was estimated that between 12.5 – 20% of apprentices did not attend day/block release (O'Connor, 2003:33). The imbalances in the system meant that some apprentices received the full syllabus while others did not, some employers paid their apprentices and some did not. Employers were supposed to pay into a special training fund but again this was not tightly regulated and led to an *ad hoc* situation within apprenticeship (O'Connor, 2003:33). This lack of enforced regulation and poor quality control were the impetus for the introduction of the Standards Based Apprenticeship in 1993. Although it proved not to be the robust and complete solution expected, the Standards Based Apprenticeship became in effect a mix of the old '*time-served'* system and the new '*standards based'* system (Dún Laoghaire Further Education Institute, 2013:14) with a completion rate of 67% (Steedman, 2010:28). Apprentices still had to serve a certain term length as apprentices, four years, but in addition had to meet certain competence metrics. The new apprenticeship model was based on Germanys' dual system (See Appendix E and I) and in many respects matched the best European provision (Steedman, 2010:28) including the German model (Nyhan, 2013:2). It had seven phases divided between on-the-job training and off-the-job training. Phases 1, 3, 5 and 7 were spent with the employer and the apprentice was expected to perform certain specific tasks on-the-job as laid out in the curriculum, with the even number phases 2, 4 and 6 delivered in a training centre or Institute of Technology. The Standards Based Apprenticeship divided a four year apprenticeship into seven phases on a ratio of 19% off-the-job and 81% on-the-job for twenty five of the twenty seven recognised trades. The two exceptions were Print Media and Floor/Wall Tiling which had five phases. Entry requirements were low, a pass mark in five subjects in the Junior Certificate typically taken by fifteen year old students, if a student did not achieve even this low academic level, alternate entry pathways were available through interviews or preparatory training (Buck & McGinn, 2005:30). This basic entry standard contributed to the perception that apprenticeships were the only

option for low academic achievers (Dún Laoghaire Further Education Institute, 2013:16).

Each phase had a distinct uniform, pre-specified, industry agreed syllabus with a specific set of key learning outcomes written by subject matter experts approved by the Social Partners (Buck & McGinn, 2005:33). Each phase was also designated as either '*on-the-job'* where time was spent exclusively with an employer and it was a typical working week or '*off-the-job'* with Phase two delivered in a FÁS Training Centre while Phases four and six were based in a College of Further Education (CFE) or an Institute of Technology (IoT). It was during these college based phases of four and six that apprentices received a more academic curriculum in theory and practical subjects in a *habitus* that was entirely educational, covering topics that ranged from mathematics, geometry, building legislation, conservation and Information Technology in an environment centred on learning and developing skills (O'Connor and Harvey, 2001). The mechanics of the new Standards Based Apprenticeship were a detailed structured format in each phase as demonstrated in the example of Carpentry and Joinery, where Phase one began with a signed four year employment contract between an employer and a prospective apprentice and this phase lasted for three months before progressing into Phase two which was twenty weeks in duration and focused on basic carpentry skills and machine knowledge. Upon successful completion of the Phase two exams, an apprentice would re-join the employer for a six month period that constituted Phase three on-the-job training, where an apprentice was required to successfully complete certain practical tasks in roofing, internal second fixing and the fabrication of a carpenters stool before progressing into Phase four off-the-job training which was ten weeks in duration. Each of the ten weeks were thirty five hours long with an even mix between practical kinetic workshop classes and academic theory classes. There were two sets of exams in Phase four, the first set of exams being taken at five weeks into the Phase, which examined both practical and theoretical knowledge learned by the apprentice and the second set of exams occurred in week ten, again examining theoretical and practical knowledge and skills. A pass mark of seventy percent was required to pass this Phase before an apprentice could progress into Phase five. Phase five was six months long on-the-job training and again similar to Phase three, the apprentice was required to perform certain '*real world'* tasks to a pre-set standard, invigilated and corrected by the employer before the apprentice could be accepted into Phase six off-the-job training. Phase six was similar in time and structure to Phase four with the main difference being there was only one set of final exams in Theory,

Drawing and Practical subjects. A pass mark of seventy percent or above would allow an apprentice to spend the final Phase seven with the employer which was three months in duration. Phase seven on-the-job training had a construction focus with few joinery tasks on the syllabus. In addition to the '*minimum'* time periods per phase, an apprentice was to satisfy a '*time served'* requirement of 208 weeks (4 years x 52 weeks) registered employment. On that basis, the split between '*on'* and '*off'* the job periods was 168 weeks '*on'* and 40 weeks '*off'*. Upon successful completion of the required 208 weeks registered employment in addition to successfully passing the mandatory examinations of Phases 2, 4, and 6, an apprentice was deemed eligible for the award of the National Craft Certificate. This award was an Advanced Certificate and was therefore placed at Level 6 on the National Framework of Qualifications (NFQ) (Ó Murchadha, 2013:23). Level 7 on the NFQ was an Ordinary Degree, Level 8 was an Honours Degree, Level 9 was a Masters and Level 10, the highest level of academic qualification was a PhD, there was no separation or distinction between vocational and higher education on the National Framework of Qualifications as there was in the United Kingdom. Equally there was no direct path from a Level 6 apprenticeship National Craft Certificate to a Level 7 Ordinary Bachelor's Degree available to apprentices (Buck & McGinn, 2005:36).

Phase 4 and Phase 6 created an interesting dynamic from a pedagogical perspective offering a precise example of the acquisition metaphor in each phase except for phase four and six which were more but not entirely participatory as described by Sfard (1998:5,6) as the curriculum was to be delivered by people who were educationalists but the management of apprenticeship was the remit of a training authority. There was a constant tension between the two ideologies as to what the focus should have been i.e. practical training of manual skills or the development of higher cognitive ability (O'Connor, 2003:35). Some concerns about the quality of education received by apprentices was published by the OECD in a report entitled '*Learning for Jobs OECD Reviews Vocational Education and Training Ireland'* which highlighted the need for all those involved in the education and training of apprentices to have credible pedagogical training;

> *"As a means of enhancing the competences of the VET workforce ensure that all teachers, trainers and instructors have some pedagogical training, and as a longer term goal offer pedagogical training to supervisors of VET students (e.g.*

> *apprentices, trainees) in companies. Encourage convergence in the qualification requirements for teaching in different sectors of the VET system."* (Kis, 2010:7)

An earlier OECD report in 1995 had already highlighted how Ireland fared poorly in terms of the low emphasis on vocational education and the lack of pedagogical training among instructors when compared to other European Countries (McGuinness *et al*, 2014:17). This reoccurring weakness of pedagogy reflected the fragmented ethos of a training system operated by a Training Authority which involved key academic phases of full time education.

In June 2008, the leader of the Opposition Party in Dáil Éireann (Government House) announced an investigation into the spending practices of FÁS. This investigation revealed that €643,000 had been spent on travel expenses over a four year period, the Director General resigned and in 2011 it was announced by the Minister for Education that FÁS was to be dismantled and that the training element would become the responsibility of the VEC (Vocational Educational Committees) (Quinn, 2011). The Qualifications and Quality Assurance (Education and Training) Bill, 2011 also amalgamated the national authorities responsible for further education and higher education.

2013 Irish apprenticeship review

The establishment of SOLAS (An tSeirbhis Oideachais Leanunaigh agus Scileanna, which translated as: Further Education and Training Authority) in 2011 by the Minister of Education and Skills marked the next significant reform of vocational education governance in Ireland. The remit of SOLAS was to oversee the funding, planning and coordination of a wide range of training programmes with responsibility for high-quality further education and training into the next century (McGuinness *et al*, 2014:20). In Ireland, the collapse of the construction industry which employed the majority of apprentices, revealed the weakness of having such a narrow focus in the field of apprenticeship where two sectors – construction and electrical- made up over 80% of all apprentices (Steedman, 2010:28). It also exposed the cost of the dual system as being one of the most expensive in Europe (Nyhan, 2013:3). The crisis in vocational training triggered a review of the Standards Based Apprenticeship in 2013 by the Minister of Education and Skills, Ruairi Quinn, to determine if the SBA model should be retained, adapted or replaced by an alternative model of vocational education and

training. An independent review group of the social partners, chaired by Kevin Duffy (Chair of the Labour Court) was set up in May 2013 and reported in December 2013 that apprenticeships should be employer led, be a minimum duration of two years, have a minimum of 50% on-the-job training and should be governed by a contract of apprenticeship rather than the previous contract of employment. The Review Group envisaged a more flexible mode of apprenticeship, grouping trades into '*Families'* that could potentially lead to any qualification from level 5 upwards on the National Framework of Qualifications (Department of Education & Skills, 2015). Each '*Family of Trades'* was to be reviewed every five years and the curriculum would be publically available to allow all the stakeholders involved to understand the part each constituent phase played in the overall apprenticeship programme (Review Group, 2013:13). The Review Group found that from the 128 organisations who contributed to the review of apprenticeship in Ireland, common issues were identified;

1. Over reliance on a narrow group of trades.
2. Few female participants.
3. High cost.
4. A demand led system creating boom and bust employment cycles.
5. Rigid four year structure with a single award.
6. Difficult to develop new apprenticeships. (Review Group, 2013:74)

From this review, the Apprenticeship Implementation Plan was set out by the Irish Government and it included an implementation timetable of actions divided into three phases which are given in detail in Appendix K.

The syllabus review of the first five trades was completed in 2015 with minor changes to the structure or content, the most significant changes were;

1. The reduction of the pass mark from 70% to 50%
2. The reduction in the length of Phase 2 from 26 weeks to 21 weeks
3. The increase in the length of Phase 4 from 10 weeks to 11 weeks
4. The inclusion of self-directed study of Common Modules in:

    - Health and Safety Awareness

- Introduction to Learning to Learn
- Introduction to Information and Communication Technology (ICT)
- Employment Legislation Awareness
- Environmental Awareness
- Communication
- Team Leadership

5. The introduction of new requirements for those delivering apprenticeship training:

(a). Staff who delivered off-the-job Phase 2 training were required to:

- Have qualified as a craftsperson.
- Have five years post-apprenticeship experience.
- Hold a recognised assessor qualification.
- Each instructor undergoes further development in training techniques.

(b). Staff who delivered Phases 4 and 6 training were required to:

- Hold a degree or its equivalent in the subject area or have qualified as a craftsperson.
- Have three years relevant post-graduate experience.
- Hold a recognised assessor qualification Support Services.

The newly formed Apprenticeship Council was comprised of the social partners with representation from Business and Trade Unions, SOLAS, Higher Education Authority, Department of Education & Skills, Quality and Qualifications Ireland, the Further Education Sector and the Higher Education Sector. The review stated that apprenticeships should be industry led and a detailed review of the standards of the curriculum was required by the Quality and Qualifications Ireland regulatory body. Initial analysis of submissions recommended that 64% of those surveyed in the Category 1 – Advanced Development Stage (trades who were furthest along the development path) were in favour of an apprenticeship being a minimum of two years, the largest cohort of the trades family was in Category 2 – Early Development Stage, of which 33% of those involved believed that apprenticeship should be at Level 6 Advanced Certificate on the National Framework of Qualifications, 61% of respondents

in favour of apprenticeship being at Level 6 or below (Apprenticeship Council, 2015:12-13). The review represented one of the most fundamental changes to apprenticeships in Irelands history, with a vast range of apprenticeships in various sectors, a new apprenticeship contract and employers required to pay the wages of the apprentice while attending off-the-job training (O'Mahony, 2015:10), a system that was described as *ad hoc* (O'Connor, 2003:33) before the introduction of the Standards Based Apprenticeship in 1993. Greater diversity of workplace experience was required as highlighted by McGuire (2016) who reported that Ireland had the highest level of students progression into Third Level education within the OECD area and yet 40% were in occupations that did not match their qualifications (McGuire, 2016:3). The success of the review of the Standards Based Apprenticeship model will require further time and research but the diversity of apprenticeships are outlined in Appendix F which shows the old and new apprenticeship to be delivered in Ireland.

Summary of the development of the Irish Apprenticeship model

Using the key legislative signposts in the development of the Irish apprenticeship model beginning with the official establishment of the Guilds in 1192 which gave a formal structure to the apprenticeship model with little concern shown for the curriculum which was to be the focus of the next reform in 1898. The 1898 Agriculture and Technical Instruction Act marked the first comprehensive stewardship of Government in the education of science and art applicable to industry but failed in serious reform of the apprenticeship syllabus, a failure to be addressed by the more comprehensive Apprenticeship Act of 1931 which although more of a voluntary code it did mark an important step toward complete Government regulation and administration of apprenticeship in Ireland. The following two Acts of legislation, the 1959 Act and the 1969 Acts increased the quality assurance standards and structure of the apprenticeship model with the setting up a dedicated body charged with the management and development of the Irish apprenticeship model. Government policy began moving toward a complete Standards Based Apprenticeship model in 1987 with the Labour Services Act and in consultation with the social partners the adoption of the '*dual system'* Standards Based Apprenticeship was implemented. This dual system of on and off-the-job training was adopted from the German model and it was intended to address the shortfalls of the old 'time-served' model by increasing the quality assurance protocols and setting out a complete standardised syllabus for each of the twenty seven trades. While the Standards Based Apprenticeship was a positive development in

vocational training standards it had its critics who highlighted the failure of on-site quality assurance, narrow focus of crafts and the high cost which triggered a review in 2013 which broadened the number and sectors that could operate an apprenticeship as well as including topics such as Teamwork and Communication into the syllabus. These key developments have taken an industry regulated training system of the Medieval period into a modern Government administered structured educational model with a standardized syllabus and quality assurance protocols without losing its core purpose of skills transfer.

The Irish apprenticeship model adopted the German dual system of a structured training that included a clear framework to include a delineated curriculum in both the on-the-job phases and the off-the-job phases minimizing the risk outlined by Sfard (1998) where a process of learning without clearly defined content undermined the entire direction and form of the teaching and learning experience (Sfard, 1998:10). The character of the Irish Standards Based Apprenticeship was very Western in its philosophies where the focus was on a measurable system, a system that prescribed a clear role and identity for the apprentice, the employer and educator and reducing Eastern philosophy on the individual's journey of knowledge transcendence (Nonaka & Konno, 1998:42). The focus of the Irish apprenticeship model was also too narrow in the range of trades recognised as well as in the syllabus, issues which were addressed in the review of 2013, the net results of which were difficult to judge at the time of this research.

2.2.3 The evolution of the Japanese apprenticeship structure

The Japanese apprenticeship system in the traditional crafts area had many parallels to the early European guild apprenticeship system in Ireland and in Europe (Wolek, 1999:410). This was due to the fact that Guilds had operated successfully in Japan until the Meiji Restoration in 1868 (Sasaki, 2008:65). Traditionally in Japan, the apprentice lived with his employer performing basic household duties in the house and workshop while the wife of the Master craftsman educated the apprentice in basic reading, writing and arithmetic. The apprentice would watch in silence, often at a discreet distance as his Master worked, in the hope of *Nusumi-geniko* (stealing the knowledge/skill) over a period of seven to ten years (Buntrock, 1998:72). With the completion of the training period, the apprentice would be elevated into a higher strata of society which allowed him to change his name and become a journeyman or start his own business (Nagata, 2007:37-43). Ben Zeev *et al* (2015) wrote of an apprentices' experience within the

British Guild system where learning took place through observation, internalisation and repetition rather than through structured learning or direct instruction, meaning the apprentice had to '*steal with their eyes'* which mirrored the Japanese methods exactly (Ben Zeev *et al*, 2015:6, Wolek, 1999:410). Another parallel between Eastern and Western apprenticeships was the requirement of an apprentice in Japan to continue working with the employer for up to two years after qualification to repay the employer for the training, this service period was known as '*hoko'*. This too was seen in Britain, where an apprentice who had completed his/her time was expected to remain with the employer as a Journeyman or servant to cover the cost of the training (Ben Zeev *et al*, 2015:6). Although, Singleton (1989) stated that the demands on an apprentice in Japan were intrinsically related to traditional Japanese concepts of obligation, learning and discipline (Singleton, 1989:13).

The Meiji Restoration in 1868 changed Japan politically and institutionally, the length of apprenticeship was extended to ten years in an effort to stop skilled employees leaving during a time of skills shortages and growing industrial needs (Nagata, 2007:40). The apprentice was now educated by the state school system and then joined his employer, still effectively an indentured servant spending the first three years doing household chores, with the end of the first three years, the apprentice would then be shown all aspects of the business, a system that loosely continues in corporate Japan today (Nagata, 2007:43). As Japan became more industrialized, a separation between crafts and manufacturing grew in methods and structure. Buntrock (1998) outlined the divergent path of separation between traditional crafts and industry as the craft area declined with the increase in manufacturing of everyday items;

> "*Lacking pervasive industrialization, most materials of daily life are handmade. Manufacturing thus usurps a portion of the original craft market, because basic commodities can be produced more cheaply without significant qualitative differences. Since industrial production is most efficient in the manufacture of simpler articles, apprentices are also less able to rely on mundane work to develop basic skills. Furthermore, the natural education of consumers, developed through interactions with crafters, is weakened*." (Buntrock, 1998:73)

As the separation between traditional crafts and industrial processes grew, vocational training evolved into two very distinct areas, with the traditional craftspeople continuing their long traditions in highly specialized individual processes of piece work and

industry taking the remaining share of vocational education and training with little input from the national Government, leaving no concrete statistics available on industrial vocational education in Japan (Yan, 2007:18).

Pre 1603 Japan: First contact with Western cultures

Japan as a country had always remained distinct and independent without any real need to integrate with surrounding nations, despite Japan being influenced by neighbouring cultures like the pottery skills of the Republic of Korea and the writing system of the People's Republic of China (Walsh, 2009:7). Although the writing system used in Japan originally came from China, it evolved to become distinct from the modern Chinese writing system (Kobayashi, 1976:5). This was also the case for the Japanese language which derived from Chinese but as different from current Chinese as it is from English, meaning that Japan probably faces a greater language barrier than any other major national group (Reischauer, 1981:8). These cultural examples demonstrated how the Japanese culture was influenced by outside relationships but remained totally independent from the cultures they were influenced by, creating the perfect nation state that had not seen major immigration since the eight century (Reischauer, 1981:8, 10). In the second half of the sixteenth century, the Japanese began to carefully study the more advanced Chinese civilization, which was more powerful, wealthy and technically developed than the Roman Empire ever was (Reischauer, 1981:18). By the first half of the sixteenth century, Japan was still a collection of separate states known as '*daimyo'* domains when the first Europeans arrived on Tanegashima, an island of the coast of Kyushu, Japan in 1543 (Varley, 1984:127, Reischauer, 1981:74). It was the matchlock musket guns that drew the attention of the native population, who reproduced and improved the weapons to great effect in a battle in 1575 by which time there were more matchlock muskets in Japan then in Europe leading to the rapid reunification of Japan in the late sixteenth century (Reischauer, 1981:75). The Japanese began trading with the Portuguese, who became known as '*namban'* or '*Southern Barbarians',* and during this time the newly formed Jesuit order were active in Japan with the order's founder St. Francis Xavier working in Japan from 1549 to 1551 and contributed to the Japanese culture in a limited way with Western forms of technology, culture and general knowledge remaining confined mainly to Nagasaki (Varley, 1984:127, 128, Morton, 1973:114). The Kyushu daimyo, which included the port of Nagasaki observed how the Portuguese followed in the footsteps of the Jesuits, ordered the population to join the

new religion and for a while everything Portuguese was fashionable (Morton, 1973:114) albeit at a cost for Buddhist sects who were seen as a threat to the national power. It was estimated that in 1580 the Christian population was approximately 150,000, larger than the population of Christians in modern Japan (Reischauer, 1981:87). A counter movement against the Christian religion began with the Buddhists who saw it as undermining the development of unified rule culminating in a ban on Christianity by Hideyoshi in 1587 where the Christians were given twenty days to leave the country and a more final edict in 1597 resulted in the crucifying nine missionaries and seventeen converts hung on upside down crosses (Varley, 1984:128, Mason & Caiger, 1972:168, Morton, 1973:114),. The arrival of the Franciscan friars with the Spanish from the Philippines in 1592, the Protestant Dutch in 1609 and the English in 1613 demonstrated that religion was not a requirement for international trade (Reischauer, 1981:88, Mason & Caiger, 1972:169, Morton, 1973:118). What started as a suppression of Christianity, including the death of over three thousand people, with less than seventy of them being European, developed into a self-enforced isolation policy in Japan under the control of the Tokugawa Shogunate known as '*Sakoku'* meaning '*locked country'* from 1633 until 1853. This began with European traders being restricted to Nagasaki and Hirado in 1616, with the English withdrawing in 1623 due to a lack of profitable trading with the Spanish expelled in 1624, followed by the Portuguese in 1639 leaving only the Dutch who were confined to the small island of Deshima in the harbour of Nagasaki (Morton, 1973:126). Western culture was so thoroughly expunged from Japanese culture by mid-seventeenth century that little evidence of *namban* culture could be found (Varley, 1984:135, Mason & Caiger, 1972:154). Even the Japanese people were prohibited from travelling abroad or if already abroad were banned from re-entering Japan in 1636 (Reischauer, 1981:88, 89). Although, isolated, Japan continued to develop internal stability and governance structures (Morton, 1973:127), with little contact from Western influences until 1853 when the black ships of Commodore Perry arrived to force international trade upon the Japanese nation. From this point, Japan evolved from a feudal administration system free of external influence, centred on the warlord, to a system of central Imperial governance.

1603 – 1868 Pre-industrial Japan – from the Edo Period to the Meiji Restoration

Japanese society had been structured according to class, with the Emperor at the top, followed by Warlords, Farmers, Craftsmen, Merchants and peasants at the bottom (Dore

& Sako, 1998:44). The freedom to choose your profession was not available until the Meiji Restoration when the traditional system of engaging apprentices approved only by the guild, completely collapsed (Sasaki, 2008:65). The class structure was based on the perceived value of each class to the Empire and the structure was diluted with the opening of Japan to the West. Commodore Perry, who incidentally had developed an apprenticeship system in the United States Navy, forced Japan to open its borders under the threat of cannon and the Japanese who had no naval experience or comparable weaponry relented and pivoted the country toward Western trade and influence and marked a key point in Japanese culture and history in becoming Westernized through deliberate government policy. In the Meiji period, the concept of '*practical business'* was developed from the idea of '*practical studies'* meaning the business of production and distribution in the real world. The Enlightenment thinker Yuichi Fukuzawa (1835-1901) gave great importance to the idea of practical business and called the study of practical subjects '*Vocational Education'* and contributed to the development of vocational education in Japan. The government factories and mines were the first to invite outside expertise. Early vocational education lacked any credible pedagogical framework or principles and was simply a transposition of the traditional apprenticeship system of watching the master and then imitating him in an industrial setting (Sasaki, 2008:63-65).

The experience with Commodore Perry highlighted to the Japanese the immediate need to develop a navy of their own and strengthen the national defences resulting in the subsequent side effect of initiating regulated statutory vocational training in Japan. The plan for developing a naval arsenal in Edo Bay (known today as Tokyo Bay) was outsourced to the French under the direction of French naval engineer Leonce Verny who was on assignment in the Empire of China (Horiuchi, 2008:275). Verny established the system of the in-company '*school'* for teaching and learning in the Yokosa Kousya Dockyard in January 1865 (Horiuchi, 2008:275). This was believed to be one of the earliest examples of the Western model of vocational education in Japan. This new method of training became known as '*Kousya*' education. The proposal was to adopt the curriculum and regulations of the French naval forces, drawing potential new engineers from the samurai class of Japanese society. The school would offer a three year course to students who passed a basic French exam and entry level sciences. The students would be trained using the dual system of spending the mornings in the factory and the afternoons learning technical drawing, mechanics, geometry and science. From the beginning the aim was to train '*Master Mechanics'* and not merely

'*Technicians'*. Some subjects that would not be taught included metallurgy, fortification, gunnery and textile science. Verny did not consider this a simple transposition of paradigms but a redesigned school model suited to the growing industrial needs of Japan (Horiuchi, 2008:276).

In the 1870's, another school to train engineers was set up in Kogakuryo by Scottish educators, Henry Dryer, a mechanic from Glasgow and Dr. W.J.M. Rankine, an engineer from the University of Glasgow, Scotland, under the Ministry of Public Works. Dryer drew up the 1874 Kogakuryo Curriculum and Statutes which stated that for the first two years of the four year course, students were required to spend the first six months at school and the remaining six months of the year were to be spent on site, the last two years were to be spent entirely on site (Horiuchi, 2008:276). This variation of the dual system demonstrated the difference in apprenticeship models evolving in nineteenth century Japan, the French model where pedagogy and industry were part of the daily learning experience and the British model where pedagogy and industry were considered two distinct areas of learning. The other key difference was the specialization of skills in areas such as civil engineering, mechanical engineering, communications, architecture, field chemistry, mining engineering and steel casting from the beginning of the curriculum, making the Kogakuryo school much more of a Technical College modelled on the University from where most of the staff came from, rather than an industrial training centre (Horiuchi, 2008:277).

1872 – 1958 Proto-modern apprenticeship

The establishment of the modern school system came with the '*Education Code'* in 1872, but this was not to cover vocational training as that area of education lay outside the remit of the Ministry of Education during the Meiji period of 1868-1912. To address this, the '*Education Order'* of 1880 was introduced, bringing full scale vocational education within the jurisdiction of the Ministry of Education. It was under the Education Order that the Tokyo School of Mechanics was created with the following aims;

1. To remedy the existing apprenticeship system.
2. To train teachers.
3. To create a model for other schools.
4. To teach the principles of industrial management.
5. To counter poverty in the general public.
6. To restore industry.

The Tokyo school was set up by senior Japanese civil servants who studied similar schools in the United Kingdom, Germany and France (Horiuchi, 2008:277). The curriculum consisted of one year's preparatory course and three years regular course and comprised of both workshop and off-campus field practice. In 1890, the school became the Tokyo School of Technology with the express aim of training those who would in due course become master mechanics or industrial teachers. An additional year of field practice after graduation was added to the regular three year course to better develop links between education and industry (Horiuchi, 2008:277).

In 1894, the Minister for Education introduced the Law for Subsidizing Vocational Education Expenses from the National Treasury in order to expand the role of vocational education which was significantly more expensive than general education (Sasaki, 2008:63). Although the term '*Vocational education'* was more commonly referred to as '*practical business education'* the Vocational School Order was enacted in 1899 stating that all schools which offered vocational education such as technical schools, apprentice schools, commerce schools, agriculture schools, fisheries schools, and mercantile marine schools were to be officially designated vocational schools. As Japan adopted more and more modern Western technology and industry, the need to introduce new skills in areas such as electricity became necessary and the vocational schools fulfilled this need with 70% of graduates from vocational schools getting employment in their respective areas (Sasaki, 2008:63). The curriculum was not written for vocational schools specifically, rather they used general subjects such as history, mathematics and physics, bolting on whatever relevant practical skills were required by a particular industry, similar to a common entry apprenticeship model. The Ministry of Education did not set a standard curriculum or have standard textbooks for vocational education, which resulted in an extremely diverse curriculum with each vocational school having distinct methods and topics (Sasaki, 2008:64). The development of in-company training began to develop in the 1920s as labour turnover decreased and permanent employment became the established way in large companies. In-company vocational training was an effective way of holding on to skilled employees who could be moved within the company (Sasaki, 2008:66). In the 1930s, as Japan began to build its military capabilities, a shortage of master mechanics arose and courses were provided in public vocational training institutions although these were few in number. This generated a public discussion on how a master mechanic should be trained to meet demand, should a mechanic be multi-skilled or single-skilled?

In 1938 the National Mobilization Law was enacted, under which the government established the Skilled Technicians Training Order for Factory Establishments which made it compulsory for privately owned factories and mines to train a specific number of technicians. This marked the three year apprenticeship for a wide range of disciplines, this system collapsed at the end of the war (Sasaki, 2008:66).

Post World War II

Sasaki (2008) stated that after World War II standard textbooks were published for the major subjects of vocational education which contributed greatly to the improvement and unification of standards in industrial education (Sasaki, 2008:64). The vocational schools were amalgamated into the Junior High Schools and compulsory education was extended to the age of 15 as vocational subjects became an option for those interested. In 1960, the number of students attending a vocational course was approximately 40%, by the 1990's this figure had dropped to less than 25% (Sasaki, 2008:64). Labour relations were democratized at the command of the occupation forces introducing many new trade unions who demonstrated little or no interest in vocational training.

The curriculum of the vocational schools was standardized as well as the textbooks used, the ratio of general subjects to specialist skills education was 50-50 thereby ensuring common ground with the High Schools. In 1949, Jun Hasegawa published new curriculum guidelines called '*Shokugyo Bunseki'* based on a translation of American professor, Verne C. Fryklund's 1896 work '*Trade and Job Analysis'* Second edition printed in 1947, which introduced new and unfamiliar educational methods to Japan, such as teaching for understanding (Fryklund, 1947:121) and fractionalizing the education of an apprentice into scheduled list of tasks, each one building on the last, making it a more prescribed acquisition mode of information transfer. Fryklund (1947) also proposed that trades should be divided into '*Blocks'* and '*Service'* trades, block trades were tasks that were largely repetitive and blocks can be built up to form an overall complex trade while '*service'* trades were repair and servicing type trades that involve constant problem solving and as such needed a different type of educational focus (Fryklund, 1947:89). The Official Curriculum Guidelines of 1951 defined the term '*Trade'* as an area of education and training around which a course could be created (Tereda, 2008:332). The occupation forces virtually prohibited any organisation other than the Ministry of Education to have responsibility for vocational training causing many existing public vocational training institutions such as those under the Ministry of Communications to disintegrate. The Allied forces also introduced the

concept of TWI (Training within Industry) through the work of Fryklund and others where the idea of a foreman or front line supervisor was introduced into Japanese industry (Sasaki, 2008:66).

The 1951 Industrial Education Promotion Law, later followed by the Vocational Training Law of 1958 was enacted marking the epoch of vocational training but it also expanded the facilities and equipment available to High School Vocational courses where the percentage of students attending was between 50-60%, this increased to over 90% by 1973 (Sasaki, 2008:64).

The 1958 Vocational Training Law

The 1958 Vocational Training Law, was the first independent law concerning vocational training in Japan and it combined two existing laws; the Employment Security Law and the Labour Standard Law (Yan, 2007:23) which had the following effect;

- It shifted the focus of vocational training from being a solution to unemployment to being a method of education.
- It actively promoted in-company training.
- It established a national state standard of examining skills.

The standards for the training courses were set by the Ministry of Labour and a system of national testing of technical skills (See appendix G) was established in accordance with the Vocational Training Law (Sasaki, 2008:67). The National Trade Skill Test which started in 1960 with 5 trades (Yan, 2007:35), was created by the Government under the 1958 Vocational Training Law and implemented by private-sector bodies (Nara, 2010:160). The National Trade Skill Test examined applicants' abilities at differing levels or grades based on time served, although a number of exemptions from these exams were available. Passing or not passing practical exams did not directly restrict business or employment prospects. Wage rates were not linked to technical skills exams due to objections from Unions and companies and the skill test was not mandatory in order to be accepted or operate as a craftsman. There were two types of public vocational training schools, one which was run by local governments and the second was funded by unemployment insurance, but both had standards set by the Ministry of Labour (Sasaki, 2008:67).

In 1961 the '*Co-ordination System'* was introduced in which learning achievements at specific accredited vocational training institutions were credited as part-time or

correspondence courses in High Schools. Large companies in particular, with in-company training schemes especially benefited from this coordinated system.
In 1976 a new wave of Specialised Training Schools developed, separate from the typical classification of vocational schools which were referred to in Japan as '*miscellaneous'*, which meant that vocational training was carried out in a more systematic and organised manner. Within this group of specialised training schools, another subsection existed called Professional Training Schools, these schools were distinctive by the fact that they accepted High School Graduates. However all these training schools, specialised and professional, were private and demonstrated a return to government policy of letting industry regulate the vocational sector in Japan (Sasaki, 2008:67).
In 1985 the Vocational Training Law was reorganised into the Human Resources Development Promotion Law (Yan, 2007:35) with an emphasis on career change training, adopting the slogan '*Life-long Learning'* with public vocational training institutions being renamed human resource development institutions. Sasaki (2008) reflected this shift in policy;

> *"The transitions of the courses offered in public vocational training in the 1970s and 2000s show that the training for new graduates has been reduced, and the training for career change more than doubled, and the training for those currently employed rapidly grew to six times as much as before".* (Sasaki, 2008:68)

Japanese vocational training began at the age of 15 when pupils of varying abilities were streamed into appropriate areas of education in a system called '*hensachi*'. In 1998 for example, the top tier of students with marks of 55% or above were encouraged by teachers and parents to aim for a university education, where competition was fierce and the prestige was great, this cohort of students represented 71.6% of the total, this level was called '*General Courses, High School (Upper Secondary School)*'. Pupils in the lower half of the spectrum were encouraged to enter an alternative stream known as '*Vocational Courses, High School (Upper Secondary School)*' depending on their respective ability, 24.9% of students entered this stream with the remaining 3.5% going to special colleges, training schools or directly into the labour force. The Commercial Technical Schools were attended predominately by girls and Industrial Technical Schools were entered into mainly by boys. The bottom rung of academic achievement

was the Agricultural and Fisheries Vocational Schools. After graduating from these three year vocational schools, 4.2% of students attended specialists training schools which were private, 4.5% entered university through special access programmes, or as 16.4% of vocational students did, enter employment directly where further training in a specialist area was provided at the expense of the employer. This investment was seen as worthwhile by employers as lifetime employment was part of Japanese culture (Dore & Sako, 1998:28-30).

The subjects covered in the vocational schools included; machinery, electricity, electronics, architecture, civil engineering, automobile repair, metalwork, textiles, interior furnishings, design, printing, precision machinery, radio communication, and welding. Just as society in the Tokugawa period was structured samurai, farmer, craftsman, and merchant, the academic order was general courses, commercial courses, industrial, and agricultural (Dore & Sako, 1998:44). The format of the vocational courses were divided into half general studies of maths, Japanese, English, etc. and half spent on practical topics, some of this practical education was done '*on-the-job'* where possible, for example, in catering and nursing, but it varied from course to course how much practical experience was gained. Two subjects were compulsory to all Technical High Schools; (1) Foundations of Industry and (2) Industrial Mathematics to help all students understand problems faced by industry. The students preformed practical tasks and were assessed on: a short report, attendance, behaviour and the results of a practical exercise. At the end of the year the student was given a rating on a scale of 1 to 5 or 1 to 10 depending on the school and the mark determined whether or not the student could progress to the next year.

After graduating from vocational school a person entered full time employment in their respective area of training where, depending on the requirements of the occupation, a further two years of training was undertaken, this varied from employer to employer. An example of a good employer was the NEC Corporation which had its own training school recognised by the Ministry of Education. The NEC school annually selected seventy five craftsmen/technicians from carefully chosen high school graduates for their intensive training scheme. The two year intensive course was divided into '*Classroom'* learning and '*Practical'* learning:

Table 2.1: Distribution of Training Hours in NEC

Distribution of Hours		
Year	**First Year**	**Second Year**
Classroom		
Academic	240	140
Vocational	575	590
Practical		
Basic Mechanical	645	305
Basic Electrical	270	265
Health & Safety	80	50
Applied	150	442
Total	1,960	1,792
Equivalent time in weeks	49	44.8

This did not necessarily mark the end of a craftsman's training as Japanese culture expected a person to constantly improve themselves (*Kaizen*) for their own benefit but also for the company's benefit where the number of qualified employees may be a regulatory requirement (Dore & Sako, 1998:102-103). NEC also had mid-career training which was formal off-the-job training for craft and technical workers used partly for upgrading basic training and partly for re-training in preparation for a change in the organisation. This mid-career training took 848 hours or 21.2 weeks, but in reality training periods never formally ended (Dore & Sako, 1998:109).
Vocational training, post second level education, was categorized into two types according to Yan (2007);

1. Long Term Vocational Training Courses
2. Short Term Vocational Training Courses

Long Term Vocational Training Courses did not have fixed training standards or curriculums but participants were required to do a minimum of 1,400 training hours per year, of those 800-1,000 were required with the remaining 600-400 hours arranged on a flexible basis. Short Term Vocational Training Courses which included the trade skill test could include examinations but these were appraised on experience and ability as much as a final exam. The short term courses in general did not have standard curriculums or standards as these were decided locally (Yan, 2007:22). One exception to this was the Trade Skill Test System which had four grades from Special Grade at the

top to Grade 3 for novice workers. Trades covered by the Trade Skill Test System were administered by the Ministry of Health, Labour and Welfare, Prefectural Governments, Japan Vocational Ability Development Association and Prefectural Vocational Ability Development Associations, all of whom worked together to conduct trade skill testing and certification (Yang & Yorozu, 2015:29, Yan, 2007:37). In the steel industry, a survey had been conducted which found that all steel manufacturers had in-company training but off-the-job training that was longer than a year in duration was only offered to those in key positions or with specific maintenance responsibilities and each training programme was set up to meet that companies' particular needs (Sasaki, 2008:67). Japanese vocational training has drifted almost completely under the control of industry and statistics were scarce due to any lack of applicable official regulation and the complex nature of Japanese vocational education made it difficult to understand from an external viewpoint (Yan, 2007:43).

Establishment of the *Den-San* Act 1974

As Japan shifted to a more Western industrialized modern nation in the early twentieth century, manufacturing was focused on the traditional crafts area where machine made art and crafts objects were churned out for export to increase revenue. A reactionary movement, which began with the creation of the word '*mingei'* by Yanagi Sooetsy in 1918 and formalised on a retreat in Koya into the '*Mingei Movement'* (Folk Cultural Movement) in 1926 (Singleton, 1989:15), and it was comparable to the Arts and Crafts movement seen at the same time in Western European cultures. *Mingei* objected to the mass production of art objects, supported by Bernard Leach and pottery artists such as Muneyoshi Yanagi and Shooji Hamada. They established the idea of *Yo-no-Bi* (Functional Aesthetics) to demonstrate the beauty and figurative simplicity of objects that exemplified a handmade character created by skilled artisans (Sarashima, 2013:149). This resulted in an awareness that traditional crafts should be treated differently than industrial re-productions as the traditional crafts were seen as having cultural value and as a result, two separate laws emerged from a policy of safeguarding traditions since 1950 (Sarashima, 2013:138);

1. The Law for the Protection of Important Intangible Cultural Property (PIICP) regulated by the Agency for Cultural Affairs

2. The Law for the Promotion of Traditional Craft Industries (*Dento-teki-kogei-hin Sangyo-no Shinko*, known as the Den-San Law) enforced by the Ministry of Economy, Trade and Industry (METI).

The Law for the Protection of Important Intangible Cultural Property, created in 1950 was a government level designation system that awarded craftspeople and preforming artists the title of '*Holders of Important Intangible Cultural Property'* and when this was launched to the press, a reporter asked if these exceptional people could be referred to as *Ningen-Kokuho* (Living National Treasures) and the phrase quickly entered common usage (Sarashima, 2013:149). The Law for the Promotion of Traditional Craft Industries and Traditional Craft Products was created by the Minister of Economy, Trade and Industry in 1979, following the introduction of the *Mingei-Sangyo* (Folk Craft Industry) policy of 1972 which aimed at stemming the depopulation of rural Japan to urban centres and to help popularise traditional products. The two key aims of the 1979 Den-San Act was to formally promote traditional crafts and protect traditional production methods at a national level. Japan had a variety of inherited items for daily life that were shaped by the country's particular history and environment. However, crafts manufactured through traditional methods and materials have faced challenging economic times due to various factors such as changing lifestyle and the development of new raw materials. For a craft item to be designated a Traditional Craft Product under the Law for the Promotion of Traditional Craft Industries, it was required to satisfy criteria including; regular use, handmade, established provenance of one hundred years or more and must have been above a certain scale of human capital. Items which were not craft products themselves, but which were indispensable for the production of a Traditional Craft Product, and satisfied all the criteria apart from (a) Regular Use, were categorized as Traditional Craft Tools and Craft Materials designated by the Minister of Economy, Trade and Industry, and were promoted in the same way as Traditional Craft Products. Crafts persons who were approved under the Den-San law were allowed to use the official logo (See Appendix H) on correspondence and packaging. The logo designated Traditional Crafts officially recognized by the Ministry of Economy, Trade and Industry as Traditional Craft Products, and guaranteed that a piece had passed the rigorous quality control testing of the local producers' union.

While the traditional craft area persisted in tradition and methods including the format of the traditional Japanese apprenticeship model albeit with a more Western participation influence in the transfer of tacit knowledge, the many factors, especially

economic ones, required to support a robust artisan class no longer existed in Japan (Buntrock, 1998:73). The long traditional methods of training crafts people has been almost completely dismantled in favour of universal standardized education designed to produce office workers (Brown, 1989:30). Trade organizations have attempted to educate the middle-class and foreign tourists but the decline continued. The next generation chose work that in comparison to traditional crafts were more profitable, very few of those interviewed in this research had children that followed them into their trade.

2.2.4 Contrasting the philosophies of vocational education in Ireland and Japan

Reflection on how the different philosophies have evolved within the same relative industrial training framework and with the same ultimate goal of producing master crafts-people provided useful insights. A central dichotomy expressed in the Western cultural philosophy of vocational education was defined in the 19th Century writings of John Ruskin who succinctly framed the two fundamental paths available to vocational educators and industry as;

> *"You must either make a tool of the creature, or a man of him. You cannot do both"* (Ruskin, 1853:161)

The emphasis of an outside body contained in the word '*You'* is the key difference as in Japanese culture, only the individual can transform themselves, typically through dedicated repetitive tasks to internalize the information into knowledge. This divergence of ultimate aims in the West, which has been described as '*restrictive'* or '*expansive'* and '*acquisition metaphor'* and '*participatory metaphor'* (Safrd, 1998:4) were best demonstrated in Western cultures by the British tradition of individual development, leading to individual wealth, with little interest in general education compared to the more European goal of making students part of society, preparing them for social prosperity and general education for citizenship (Kelly, 2001:25). The core Japanese philosophy was based on Zen learning principles, where long years of apprenticeship allowed an apprentice to understand the ways of thinking and feeling of others in the first step of self-transcendence that could lead the dedicated apprentice to knowledge creation within the '*ba'* framework (Nonaka & Konno, 1998:45).

This distinction offered a clear lens to assess the two apprenticeship models of Japan and Ireland using a set of metrics that equated to a final outcome which would impact on the individual and society as a whole. The Japanese traditional apprenticeship model was a more extreme version of company training in terms of conditions, obligations and the length of time served, but the ultimate aim of self-transcendence could still be traced in industrial company in-house training (Nonaka & Konno, 1998:45) of which empirical research by the public sector into on-the-job training in Japan was low in volume (Kito, 2014:65). From a Western perspective, the Japanese traditional apprenticeship model was designed to condition potential craftspeople to produce a certain specialised product, a product with unique design elements but essentially a single product type e.g. a piece of pottery. Okamoto (2011) set out the aims of the traditional apprenticeship in Japan under the tutelage of a Master using pottery as the example. Okamoto (2011) pointed out that, to become an expert potter was to learn the entire process of creating a piece of pottery, where the student had to watch and learn from the master, not asking questions but watching and learning in silence (Okamoto, 2011:161). It was up to the student to improve his or her skills, even after the student has left the Master, the student could never again go back to the Master for help or advice, they must learn on their own (Okamoto, 2011:161).

This concept of constant improvement was seen in many cultures where progression into the next or higher level of learning was validated by successful exam results, but the Japanese training seemed more fundamental than that. Intelligence tests have never taken off in Japan, as the Japanese saw ability as transitory, the important thing was to focus on the task at hand (Lauglo, 1993:53). It was a cultural influence that had derived from Buddhism, Confucianism and Shinto which placed great importance in '*gamburu*', which means, the over-coming of adversity through diligence and perseverance by an individual which potentially led ultimately to transcendence, which was respected in Japanese society (Lauglo, 1993:53, Nonaka & Konno, 1998:40 Yang & Yorozu, 2015:12).

The respect shown by Japanese artisans for the materials used and the tools used to shape those materials also had no parallel in the Irish system. The Japanese apprentice learned from the beginning that he had a debt to repay to the earth from where his material and thereby his income derived. The apprentice and craftsman were expected to do the work quickly, skilfully and without waste, known in Japan as '*the three Mu's'* (Brown, 1989:23, Pringle, 2010:1). The contract of understanding between an apprentice and his trade were carefully spelled out, not in monetary terms alone but

just as importantly, in respect for the environment and in the materials used, all of which combined to form an artisan's skill set (Brown, 1989:23). Compared to the more broad social European aims of community responsibility and integration and the development of character, it reflected clearly the difference in social responsibility between the East and West as seen in the German ideal quoted by Lauglo (1993);

> *"... by learning an occupation the individual becomes socially integrated and is in a position to develop a stable self-confidence ... we think that an occupation is more than a technical qualification."* (Lauglo, 1993:40)

The idea of displaying mistakes was alien to Western ideals of good workmanship, whereas Japanese artisans believed that to hide your mistakes or worse, to destroy timber and start again, demonstrated a lack of respect to the tree that was sacrificed to produce that timber (Odate, 1984:viii). This reverence of materials may have developed through restrictive laws preventing importation of goods enforced from 1590-1868 which in turn may have caused subsequent deforestation and a general ecological collapse in Japan (Buntrock, 1998:72). Okamoto (2011) quoted a Japanese student who said;

> *"God is felt close in Okinawa. Half-hearted work is out of the question."* (Okamoto, 2011:170).

Okamoto spoke about the '*beauty of use'* being a fundamental strength of what craftsmen created (Okamoto, 2011:169-170). Even the treatment of a craftsman's tools demonstrated a divide between both cultures. For instance, traditionally, in Japan it was considered disrespectful to step over your saw, or to touch another's tools would have caused offence (Landis, 1987:152). In Ireland, tool shops sold what were known as disposable or '*Throw-Away-Saws'* that could not be re-sharpened as each tooth was hardened. Equally the display of an actual tree in finished work in Japan was celebrated by having a natural tree trunk, often stripped carefully of bark installed in a teahouse for example, usually about eight to ten inches in diameter as part of the living room décor. The function of which was to connect with nature in an interior setting as a mark of respect to the earth from where the materials came from (Henrichsen, 2004:65). This idea would be an aesthetic curiosity in Western culture and was more typically

associated with rustic living. Pringle (2010) outlined the unique respect that the Japanese gave to elements of the manufacturing process by stating that;

> "*Japanese Shinto religion celebrates an appreciation and reverence for things animate and inanimate. Japanese businesses show this appreciation as well. For example, Japanese multinational pharmaceutical companies perform ceremonies every year to thank their experimental animals for sacrificing their lives to make medicines safe for humans. Japanese electronics companies have annual ceremonies thanking prototyping materials for their service in the development of products. Recognition of prototyping materials' sacrifice is particularly interesting because they never got to fulfil their destiny of being made into products sold on the market and enjoyed by customers*." (Pringle, 2010:1)

The clear divergence of philosophies between the Western systematic measurable Irish apprenticeship model and focus on self-transcendence through hardship for the apprentice of the Japanese apprenticeship model highlighted the ideological differences of two systems with similar final objectives. By mapping out the key developments of statutory apprenticeship in both Japan and Ireland, it was revealed as the two apprenticeship models matured over centuries they were almost perfectly aligned in terms of structure while remaining distinct philosophically until the late twentieth century where the two models of apprenticeship diverged radically. In Ireland the time span between governmental reviews of apprenticeship became shorter while in Japan, regulation was increasingly left to private industry which can be explained when the philosophical origins and influences of both systems were reviewed. However, apprenticeship and vocational education did not operate in perfect isolation as a review of the cultural influence demonstrates, cultural values and credibility derived from a credible quality assurance system were also a strong factor in the success of vocational training within a society.

2.3 Cultural values that influenced apprenticeship

Before looking at the cultural values that have influenced apprenticeship and how that phenomenology was reflected in the context of society, it was important to review and understand what was meant by the term '*Culture'* and how varying research theories

view the concept of culture, contributing to a better understanding of how apprenticeship and its' values related to the wider influences of a particular national character.

2.3.1 Definition of culture

The notion of culture can be a very fluid concept, offering differing aspects within a single study of elements or actions and interactions of groups and societies. Brown *et al* (1989) asserted that the activities of communities were unknowable unless they were viewed from within the culture (Brown, Collins & Duguid, 1989:36). Citing the example of how carpenters and cabinet makers used wood chisels differently, Brown's *et al* (1989) statement demonstrated how a deficit of understand of a particular culture can be misread, as carpenters and cabinet makers actually use chisels in the same way, however they do use different chisels. Colley *et al* (2003) highlighted how culture has influenced the choice of profession taken by individuals, where a sense of '*suitability'* for various careers were constructed from social and cultural cues (Colley *et al*, 2003:477). Alfred Kroeber and Clyde Kluckhohn's (1952) book titled '*Culture: A Critical Review of Concepts and Definitions'* managed to list 164 definitions of the term culture. Cultures are of course comprised of individuals but Hofstede stated that there was no single concept of '*self'* that could be applied across all cultures (Hofstede, 1998:69). Geertz (1993) wrote that if an accurate understanding of culture was required then the researcher must look into the hearts and minds of men (Geertz, 1993:11). Hofstede (2010) reinforced this idea of examining the mind of a people to truly see unfiltered culture within a society, offering this definition of culture;

> "*It is the collective programming of the mind that distinguishes the members of one group or category of people from others*." (Hofstede *et al*, 2010:6)

This may suggest that framing any meaningful or fixed definition of culture would have been a pointless or impossible exercise and yet, different cultures have been recognised by characteristics and social constructs that were contained within political borders but only in vague terms (Heine *et al*, 2002:907).

Oyserman (2006) reminded us of the potential ethnographic hazards of assuming that the psychological models developed in the West were universal and cross-cultural psychologists have drawn our attention to the limits of models grounded in the Western experience as well as the sampling of populations from a narrow demographic such as

college students or employees of a large corporation which could distort the opinions of a particular strata of society (Oyserman, 2006:352). Geertz (1993) conceded that culture was a human paradigm that did not offer any fixed regulation, but could allow discovery in meaning through the understanding and study of practices by those directly engaged in the task, navigating the webs of significance that he himself has created, these webs which were significant to the individual was culture (Geertz, 1993:5).

To study cultural relativism in detail, was to study how individuals act in daily activity and how they have learned from previous generations, this was to be a lot more productive than to study collective groups at a macro level. As people grew and developed they learned social habits, protocols and values, these '*webs of significance'* were not automatic or innate and as such can change, but still, were distinct from the biological developments such as physical characteristics and genetic make-up (Hofstede *et al*, 2010:6). Cox (1993) identified factors such as visible characteristics, gender and race to create cultural diversity (Cox, 1993:10). Other examples of cultural identity differences have included traditions, religion, mannerisms and language, all of which have been used as diversity labels to help with anthropological classification.

Bennett (1998) differentiated between these two perceptions of culture explaining that Culture spelt with a capital 'C' referred to the physical institutions of culture which he termed as '*objective culture'*. Culture spelt with a lower case 'c' however, was described as '*subjective culture'* and referred to psychological aspects of different groups of people. Bennett (1998) continued to define this subjective culture as the learned and shared patterns of beliefs, behaviours and values of groups of interacting people (Bennett, 1998:2). Banks and McGee-Banks (1989) reinforced this definition, describing culture as the various values, symbols, perspectives and personal interpretations that could be webs of significance or character that identified one person from another (Banks & McGee-Banks, 1989:12).

Reflection upon these definitions of culture may lead one to the supposition that two cultures cannot be compared with useful validity. Heine *et al* (2002) outlined the inherent challenges that were part of a cross-cultural comparison system like the Likert Scale. Heine *et al* (2002) outlined two explanations for divergences in the responses from participants of cultures from opposite sides of the globe;

> *"First, they suggested that a deprivation model might be operating. That is, people come to value what they do not have. Just as those who are hungry are*

> *especially likely to value food (Maslow, 1943), people from cultures that feel deprived of certain needs come to value them more.*
>
> *Second, Peng et al (1997) noted that people from different cultural groups use different referents in their self-reported values. For example, Chinese evaluate themselves in comparison with other Chinese, whereas Americans evaluate themselves with reference to other Americans. We term this the reference-group effect, and the present article examines this confound in cross-cultural comparisons."* (Heine *et al*, 2002:904)

While cross-cultural comparisons may have additional hazards for the ethnographer, the '*Habitus'* according to Colley *et al*, (2003) went beyond the notion of identity to include additional factors such as class, race and gender which were useful in a comparison of the '*field*' which was a term to include the sets of influences within particular learning sites and social relational characteristics (Colley *et al*, 2003:477). The concept of '*habitus'* was developed by Bourdieu in his essay '*Intellectual Field and Creative Project*' in 1966, which built upon the ideas of Levi Straus's structuralism and Piaget's concept of practical action and knowledge acquisition (Lizardo, 2004:377). Bourdieu (1990) defined *habitus* as;

> *"… systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is, as principles which generate and organize practices and representations that can be objectively adapted to their outcomes without presupposing a conscious aiming at ends or an express mastery of the operations necessary in order to attain them. Objectively 'regulated and 'regular' without being in any way the product of obedience to rules, they can be collectively orchestrated without being the product of the organizing action of a conductor."* (Bourdieu, 1990:53)

These elements, both *habitus* and *field* created a holistic approach in the study of apprenticeship that Colley *et al*, (2003) concluded, needed to be studied as social, cultural and emotional influences which produced the unwritten and hidden curricula that contributed to the success or failure of vocational education and training systems (Colley *et al*, 2003:493). Brown *et al* (1989) criticized didactic education which assumed a definitive separation between knowledge and the context in which that learning took place (Brown, Collins & Duguid, 1989:32).

The fractal pattern of structured structures could be used to describe the structure of the Standards Based Apprenticeship model within which were contained further structures of seven phases which could be further classified into separate learning outcomes within two distinct *habitus* contexts of learning; off-the-job school based environment and the on-the-job work based environment which combine to anchor the knowledge within a valid context. Compared to the very singular Japanese traditional apprenticeship system with a single *habitus* of work based learning and no structured learning curriculum. Lizardo (2004) outlined the three steps of knowledge acquisition as set out by Piaget in 1970, with the first step being gathering raw information, then transforming this information into more abstract representations and finally responding to a new situation with an action sequence that transforms or responds to the environmental situation (Lizardo, 2004:383) which was in line with the tasks as set out in the curriculum in the Standard Based Apprenticeship model for the apprentice to exercise and demonstrate their acquired knowledge to solve problems during the on-the-job phases as they arose. This structured structure of learning deliberately incorporated in the apprenticeship model was not demonstrated as clearly in the Japanese apprenticeship model of '*watch, learn, try, and repeat'*. Lizardo (2004) stated that;

> *"The primary purpose of knowledge accumulation and development is consequently change and transformation as well as the conservation of previously acquired cognitive structures*" (Lizardo, 2004:384)

The variance in cultures of both training systems were revealed in both the *habitus* of the learning context and the cognitive emphasis of each apprenticeship model respectively, where the Irish apprentice was expected to work independently during the on-the-job phases within a structured *habitus*, itself within a structured *field* of the workshop or site, the Japanese cognitive objectives were less clearly defined, which created a more challenging *habitus* for the learner within an austere *field*.

2.3.2 Individualism versus Collectivism – a comparison of two cultures

Comparisons due to the '*reference-group effect'* Heine (2002) admitted, shifted the standards of comparisons especially with subjective Likert scales which were not context free or reliable, especially with diverse cultural groups such as East Asians and North Americans. According to Takahashi *et al* (2002:454) to date, the largest and most popular study on cross-cultural comparison frameworks between Eastern and Western

cultures was the Individualism-Collective comparisons developed by Hofstede (1980), although Triandis (1995) informed us that while attempts to define Individualism-Collectivism became popular with English political philosophers in the eighteenth century, the study of individualism was started in America with the writings of Alex de Tocqueville in 1835 (Triandis, 1995:20). Hofstede's more recent and comprehensive work mapped fifty-three countries on a continuum of four dimensions (power-distance, masculinity-femininity, individualism-collectivism and uncertainty avoidance) from a survey of one-hundred and seventeen thousand employees of the IBM corporation between 1968 to 1972. The impact and success of the study which Beilmann (2012:208) called a multifaceted and ambiguous construct, prompted misconceptions and inaccurate stereotyping of national characteristics especially of the United States and Japan as examples of an individualistic nation and a typical collective nation respectively. It was interesting to note that Individualism – Collectivism was just one of four areas that Hofstede studied but became the most discussed. Research demonstrated that Individualism and Collectivism were orthogonal to each other and needed to be observed separately (Oyserman, 2006:354). Takano and Osaka (1999) stated that questions in the Hofstede questionnaire which used a high loading factor had a remote relation to the ordinary definition of Individualism/Collectivism (Takano & Osaka, 1999:319). Hofstede himself had tried to clarify the findings by pointing out that Japan came in at a shared twenty-second and twenty-third position on the individualist side putting Japan on the lower end of the scale of collective nations. Takahashi (2002) cautioned that direct comparisons between cultures sometimes misled researchers to simplified conclusions regarding cultural differences between nations, especially when Western developed assessments were bluntly applied to African or Asian cultures (Takahashi *et al*, 2002:455). Hofstede (2001) acknowledged this concern, stating clearly that the research was Western, as it was created by Western minds, and doing research without cultural bias was impossible; there will always be a researcher effect (Hofstede, 2001:352). As an example of this general misled acceptance of cultural characteristics, research into the character of individuals by Yamagishi (1998) showed how Japanese people acted more individualistic then their American counterparts when separated from the group and with reduced sanctions incurred. Oysterman, Coon and Kemmelmeier (2002) reminded us that Hofstede carefully pointed out that, his country wide analysis of individualism could not explain individual behaviour and that Hofstede regarded this as a theoretically distinct problem, as individual attitudes changed over time depending on economic circumstances (Oysterman *et al*, 2002:6). Voronov and Singer (2002)

pointed out in the opening paragraph of their critical review of Individualism-Collectivism that;

> "*When a whole culture or society is pigeonholed in dichotomous categories (e.g., masculine-feminine, active-passive, or loose-tight), subtle differences and qualitative nuances that are more characteristic of that social entity may be glossed over. Such descriptive labels evoke unduly fixed and caricature-like mental impressions of cultures or societies rather than representative pictures of their complexities."* (Voronov & Singer, 2002:461)

Takano and Osaka (1999) supported this view having conducted a review of fifteen studies finding that fourteen of those studies found Japanese people more Individualist then American people. Research by Schwartz (1994) confirmed that the United States was not a highly individualistic nation but Western European nations were (Schwartz, 1994:36). Voronov (2002) stated that a critical review of the Individualism-Collectivism research provided little empirical evidence but it was a useful mechanism of explanation (Voronov & Singer, 2002:462). Helpfully, Voronov (2002) did offer an alternative interpretation referencing Bond (1994) on Individualism-Collectivism which was to view it in terms of Individualism as just another name for modernity. This suggested that Collectivism was a historical concept that allowed a society to evolve beyond Collectivism and into Individualism. This evolution of a society from Collectivism into Individualism was outlined in the concept of '*The Theory of Trust*' (Yamagishi, 1986) in which Voronov (2002) described how people became more individualistic in respect of their own long term goals and only contributed to the '*in-group'* if it was in-line with these long term goals (Voronov & Singer, 2002:471). '*In-groups'* were closely bound individuals that distrusted '*outsiders'* and remained closed to people outside the '*in-group*' which was common community characteristic in East Asian societies compared to communities in the United States that were open to people not from the immediate community, a practice categorized by Voronov (2002) as a universalistic society, where bonds were formed across family, ethnic or business lines but were as a result, less stable (Voronov & Singer, 2002:473). Voronov (2002) gave the example of a rice merchant versus a rice grower to demonstrate how a person changed from Collective to Individualistic depending on the changing environment, but a comparable example of the economic conditions can change the social perspective of a craftsperson from an '*in-*

group' to a '*universalistic society'* group occurred in the craft area in European cultures with the transition from Guild system to the modern construction company structure.

The medieval Guilds were enclosed and tightly bound, this naturally meant that it was not in the long term interest of the craftsperson to defraud any of their peers and resulted in a very stable system of apprenticeship and skills development to very high standards. Compare this with the modern equivalent of sub-contractors in the construction industry in Ireland, a group who benefited only in the short term as they got work on the basis of price primarily, with reputation coming a distant second. This contributed to the decline of standards and skills training as there were no effective quality assurance protocols employed which in turn added to a decline in public perception of the craft area in society.

Beilmann (2012) recognised that the Individualism-Collectivism paradigm were at polar opposites at a cultural level, at an individual level the two constructs have been found to be orthogonal to each other (Beilmann, 2012:208). Voronov *et al* (2002) concluded his critical review of Individualism-Collectivism theory by saying that Individualism-Collectivism was too reductionist to capture the complexities of human behaviour, a single dimensional view of any complex social structure was not enough (Voronov & Singer, 2002:476). Takahashi *et al* (2002) did not dismiss the Individualism-Collectivism theory completely concluding that the Individualism-Collectivism offered a useful but experimental framework when comparing cultural comparison of close relationships between Japanese and Americans, but it was too monolithic and inadequate to describe deeper complexities of cultures (Takahashi *et al*, 2002:462). Beilmann (2012) used the subgenres that include; family members (*Familism*), peers (*Companionship*), and society (*Patriotism*). Shavitt *et al* (2006) endorsed the value of cross-cultural studies in the field of consumer psychology at least, in that it generated parallel effects on prominent goals, information processing and persuasion (Shavitt *et al*, 2006:326). Shavitt *et al* (2006) did qualify this endorsement by saying that there were limitations of the results generated by any broad focus and new insights may be generated by a more precise or detailed approach to research into the interactions between culture and consumers (Shavitt, Lalwani, Zhang, Torelli, 2006:326). A useful example of this refinement of the broad definition of Individualism-Collectivism was the Horizontal/Vertical dimension offered by Shavitt *et al* (2006), when comparing two societies labelled '*Individualistic'* like Britain or the United States of America (Vertical- Individualist) with cultures of the Scandinavian (Horizontal-Individualist) countries; where in Britain people tended to be concerned

about improving their individual status, people in the Scandinavian countries aimed to be equal to others. Further refinement of these categories suggested it had the potential to enhance greater understanding and accuracy of cultural descriptions (Shavitt *et al*, 2006:303-304). Takano and Osaka (1999) dismissed Individual –Collective studies almost entirely listing three major issues with broad cross-cultural studies by stating that;

> "*First, the specifics of those constructs are not consistent across studies. Second, I/C as multidimensional constructs lose their efficacy as analytic tools in scientific investigation. Finally, I/C as multidimensional constructs make cross-cultural comparisons arbitrary*."(Takano & Osaka, 1999:315)

Oyserman (2006) *inter alia* suggested that a narrow definition of Individualism-Collectivism in terms of the core elements were required to act as a benchmark or datum to measure Individualism-Collectivism research which would have been most beneficial to this area of study (Oyserman, 2006:356, Schwartz, 1994:40).

When comparing two cultures in broad terms, one must be aware of the limitations as highlighted by Markus and Kitayama (1991) that exist within any culture as individuals vary in the extent to which they could be described as good or accurate cultural representatives (Markus & Kitayama, 1991:226). Markus and Kitayama (1991) offered an insight into the typical cultural characteristics usually portrayed at opposite ends of the cultural scale through vernacular phraseology;

> "*In America, "the squeaky wheel gets the grease." In Japan, "the nail that stands out gets pounded down." American parents who are trying to induce their children to eat their suppers are fond of saying "think of the starving kids in Ethiopia, and appreciate how lucky you are to be different from them." Japanese parents are likely to say "Think about the farmer who worked so hard to produce this rice for you; if you don't eat it, he will feel bad, for his efforts will have been in vain".* (Markus & Kitayama, 1991:224)

The use of popular phrases were also used by Takano and Osaka (1999) to demonstrate the Individualist nature of the Japanese people in their paper which strongly argued against the stereotype of a complicit and uniform, collective people, quoting;

> "*If you make the first move, then you will dominate others (Sakinzureba hito o seisu), compared to a Western proverb, "When in Rome, do as the Romans do*." (Takano & Osaka, 1999:313)

While these sayings could not be comprehensive evidence of cultural dichotomies and may in fact, highlight how cultural translations and language can create problems of ethnocentricity, especially using the Japanese example given above which could be interpreted as either a submissive stance or as an aggressive statement of intent, these problems are created because language '*fixes'* concepts according to Philips *et al* (2014) and can lead to misrepresentations of meaning. Language has often given an insight into the mental construal's commonly found in each country and the values that they have engendered to the next generation (Philips & Schweisfurth, 2014:114). Oyserman *et al* (2002) began their paper on the evaluation of Individualism and Collectivism research by stating that to Americans, being an individualist was a good and a very American trait, tracing the individual characteristic of Americans to the French Revolution (Oyserman *et al*, 2002:3), but their research conclusion admitted that they were not aware of any scientific process that demonstrated how European Americans were anymore individualistic than any other culture (Oyserman, Coon & Kemmelmeier, 2002:4). Oyserman *et al* (2002) suggested that individualism and collectivism should be conceptualized as worldviews that differed in the issues they made noticeable. This did not make the Hofstede 1980 study irrelevant; it merely suggested that we should note that the Hofstede questionnaire was focused on work satisfaction only. Triandis (1995) outlined the difficult birth of clarification between Individualism and Collectivism when the promotion of the individual was placed above the collective by John Loke, an argument countered by Jean-Jacques Rousseau who argued that the individual was free only by submitting to the general will, which could also be a description of Western democracy at all levels (Triandis, 1995:19).

With a comparative study between a Western apprenticeship model and an Eastern apprenticeship model, it would be tempting to follow cultural preconceptions and assign all attributes to these existing beliefs. However the review of one of the most widely regarded and comprehensive cross-cultural studies demonstrates how cultural bias can mislead research if taken at face value meaning that Western bias requires further exploration.

2.3.3 Western misconceptions of Japanese culture

Esyun *et al* (1985) carefully explained the origin of Western misconceptions of Japanese culture through a dissection of three of the most popular theorems; (1) Benedict's shame theory, (2) Nakane's vertical society theory and (3) Doi's '*amae'* theory which were inherently flawed in the opinion of Esyun *et al* (1985) because Western scholars did not fully explain a number of phenomena that existed in Japanese culture and this lack of nuanced understanding was overcome by blunt theories deemed to be unique to Japan (Esyun *et al*, 1985:291). Reischauer (1977) made it clear that despite the common view of a complicit, uniform society; the fact was that all of Japanese history contradicts this stereotype (Reischauer, 1977:159). Although Miyamoto (1994) wrote an entire book giving innumerate examples of how Japanese bureaucracy was collective in the extreme. Western researchers were studying a culture from an '*etic'* or outsiders' viewpoint rather than an '*emic'* or insiders perspective (Reischauer, 1977:162), this limitation had always played a part in cross-cultural research and it was important to recognise this reality as many of the influential early researchers such as Ruth Benedict who wrote *The Chrysanthemum and the Sword* (1946) or Lowell, *The soul of the Far East* (1888) (Benedict did not spend any time in Japan and Lowell was there for just over a year) set the template of cultural misunderstandings for decades (Takano & Osaka, 1999:312). Esyun *et al* (1985) gave the example of '*shame culture'* as set out in Benedict's book and propagated by many Western researchers. Esyun *et al* (1985) explained that in China where it originated, shame was not simply a public regulator but an internal autonomous motivator;

> *"According to Sakuta, Benedict overlooked the possibility that in a shame culture, despite the supposed externality of the criteria of action, the simultaneous existence of autonomous actions is also possible. Mori Mikisaburo points out that in China, where shame consciousness originated, shame as the inverse of name (honour) is thought to be "the internal motivation that drives people from evil to good." Hence, says Mori, "the notion of guilt is produced by a strong external force, punishment, while the notion of shame is an internal ethical consciousness which is fostered by morality and courtesy." Clearly, Mori and Benedict perceive inversely the internality and externality criteria associated with shame and guilt."* (Esyun *et al*, 1985:292)

With this clarification, it was interesting to review the sayings of parents given to children at meal times given earlier in this chapter, viewed through the lens that shame and guilt were not mutually exclusive in Japanese culture. It was the Japanese ability and practice of moderating desire (a Confucian principle) according to Yayoi (1976) that was so fundamentally opposite to the Western attitude of '*having it all'* which separated the two cultures most (Yayoi, 1976:172). The East Asian preoccupation with the importance of interdependence as the foundation of any stable society stems from Confucianism which had its strongest influence in the Republic of Korea (500 years), the People's Republic of China and in Japan (250 years) as opposed to the emphasis on individualism in the Western cultures (Yum, 1988:375; Yang & Yorozu, 2015:12). Yum (1988) captured the kernel of interpersonal communication ideologies and their divergence in the abstract of her paper on communication patterns in East Asia;

> *"It is argued that East Asian communication patterns differ from those of North America because of the Eastern emphasis on social relationships as opposed to the North American emphasis on individualism. This East Asian preoccupation with social relationships stems from the doctrines of Confucianism, which considers proper human relationships to be the basis of society. The cardinal principle of Confucianism is humanism, which is understood as a warm human feeling between people and strongly emphasizes reciprocity. Confucianism has also contributed to East Asian communication patterns of process orientation, differentiated linguistic codes, indirect communication emphasis, and receiver-centred communication. In contrast, North American patterns of communication represent outcome orientation, less-differentiated linguistic codes, direct communication emphasis, and sender-centred communication."* (Yum, 1988:374)

Markus and Kitayama (1991) stated that the Japanese were most fully human only in the context of others (Markus & Kitayama, 1991:227), this concept was termed '*Ubuntu'* by the Zulu in Africa. Additionally, Markus and Kitayama (1991) reinforced this distinction of cultural contextualized mind sets with the Chinese example of synthesizing any problem into its constituent parts and treating each individual part as an essential part of the whole (which can be traced back to the Confucian emphasis of interrelatedness and kindness) and each separate piece can only be understood as an interconnected part of the whole. This holistic view was in direct opposition to the

Western thinking in which the self was separate from the natural world (Markus & Kitayama, 1991:227). These Asian principles and the importance upon empathy with others were seen in Japan, (where it was crucial not to disturb the *'wa'*, or harmonious ebb and flow of interpersonal relationships) because if people thought of themselves as part of a larger entity then it was important for them to be sensitive and knowledgeable about others who make up the constituent parts of the entire whole (Markus & Kitayama, 1991:231). The induction of the importance of harmony, reciprocity and hierarchy began in early childhood where much of the interactions with children were to reinforce these ideals (Hendry, 1987:43). This outward priority of concern for the group above the individual itself, did not automatically make Japanese society collectivist. A careful study of the Japanese language by Hasegawa and Hirose (2005) revealed that far from being collectivist, Japanese people were separate from each other, each with an inner self-consciousness (Hasegawa & Hirose, 2005:248). This difference of perception of oneself in relation to the rest of society translated itself into different work habits which was demonstrated by the experiences of research ethnographer Dorinne K. Kondo (1990). As a Japanese-American in Japan, Kondo (1990) related how the reciprocal culture became suffocating and complained about this to her friend who replied;

> "*Nihonjin wa ne, jibun o taisetsu ni shinai no, ne." (The Japanese do not treat themselves as important, do they? That is, they spend time doing things for the sake of maintaining good relationships, regardless of their 'inner' feelings.*) (Kondo, 1990:22).

Interestingly Kondo knew it was time to leave Japan when she heard herself say the phrase;

> *"Let me escape before I'm completely transformed!"* (Kondo, 1990:24)

This statement revealed a very individualist fear. Markus and Kitayama (1991) pointed out that self-enhancement or self-promotion were perceived quite negatively in Japanese culture while the American attitude was to confidently display and express one's strengths which was viewed positively in American society.

There was a philosophy in Japanese bureaucracy known as '*messhi hoko'* or self-sacrifice for the sake of the group; where saying no to something like voluntary

overtime would mean at the very least looking for another job (Miyamoto, 1994:20). The word '*hoko'* was again reflected in this research through the responses of Japanese Masters, who recounted their apprenticeship experience, at the end of which, were expected to work for their Master for an additional year without salary to repay the obligation of the apprentice to the Master for housing and feeding him, this year of service was known as '*hoko'*. This transcended into labour unions which were based on membership of an organization first and by industry type second (Hendry, 1987:142). This culture of reciprocal service was seen in the management styles of the Japanese who preferred a '*father-like'* figure who was interested in workers personal matters and as a result the workers felt more motivated to work harder for that benevolent employer. This was the very format of the Japanese apprenticeship system where an apprentice was taken into the family of the Master who looked after all of the needs of the apprentice and the Master also decided when the apprentice had achieved the standard necessary to become a qualified craftsman. The American culture were more focused on the clear achievement of a task, or goal oriented leadership (Markus & Kitayama, 1991:242), which was comparable to the Irish Standards Based Apprenticeship system which was task oriented, broken into seven phases, each phase was further broken down into separate tasks which the apprentice needed to achieve to a predetermined standard for an employer, educator and examiner in order to become a qualified craftsperson.

Blunt or thick descriptions of national character and cultures were a well-travelled road, fraught with potential errors and misunderstandings. It could be argued that the two cultures of Japan and Ireland were different but only in very specific ways which could change depending on the parameters, terms and references of the research conducted. To deliver a more multi-dimensional understanding of both apprenticeship systems, an examination was required of the values in both cultures of apprenticeship and how the role of quality assurance has contributed to the status of the apprenticeship model in society, free from any one particular cultural stereotype.

2.3.4 The value of a skilled craftsperson in society

Despite the heterogeneity of skills, both apprenticeship systems in Ireland and Japan faced uncertain futures. Okamoto (2011) informed us that the practices of skill and knowledge transfer were in crisis and that many practical arts which required high skill levels have ceased to exist in modern Japan due to the lack of successors (Okamoto,

2011:158, Manpower, 2015:4). Brown (1989) related the view of a Master Temple Carpenter on the decline of the value of his craft by saying that;

> *"Academics can be very foolish," he says, "They take simple things and make them difficult…Japanese society today measures people by their educational credentials, with the lamentable result that other equally valid ways of learning are being forgotten, even though they're backed by 1,300 years of experimental observation in Japan alone. And this has happened so quickly: in a mere 100 years, thirteen centuries of accumulated knowledge has been allowed to leak out of our culture, not just in architecture, but everywhere."* (Brown, 1989:29-30)

It is not uncommon to value something only when it is lost and apprenticeship was no exception, many countries have called for the return of an apprenticeship based on qualitative standards, only when their systems were revealed to have been degraded beyond usefulness (O'Connor, 2004:37). Payne (2001) *inter alia* concluded that after studying the various revisions and training initiatives in the United Kingdom throughout the eighties and early nineteen nighties, the one common goal was the need to tackle youth unemployment rather than focus on the growing skills gap (Payne *et al*, 2001:61, Fitzenberger *et al*, 2015:140) resulting in low academic performers choosing vocational education which devalued the traditional apprenticeship in the eyes of the public (Descy & Barabasch, 2014:22) with evidence in the OECD area that it did not achieve the aim of solving youth unemployment (Brunello, 2009:23).

While it may be argued that high prices for quality work, whether it was in ceramics or timber, had always ensured the hereditary of a craft, this economic imperative may not sustain an entire apprenticeship indefinitely, especially if customers have not fully appreciated the skill required to produce quality products. The Japanese realised this and have actively recognised and promoted crafts people, both in manufacturing and in traditional crafts. There was a word in Japan '*Monozuri'* which meant '*making things'* in blunt terms, however it had a more subtle meaning of '*the art, science and craft of making things in the Japanese way'* and it reflected an initiative of the Japanese government to promote the high standards of Japanese manufacturing and skills which had been hollowed out after the financial collapse of the 1990's (Pringle, 2010:1).

Another way of reflecting the cultural value of traditional crafts and skills, was the recognition of the highly skilled artisans as Living National Treasures as designated

by the Agency for Cultural Affairs as outlined by Philip (1989) with factors such as linage and skill used to judge the worthiness of an individual to receive the designation. It was not given to anyone who was self-taught regardless of skill, a subtle way of emphasizing the need for apprenticeship (Philip, 1989:162). There was no equivalent honour in Ireland for qualified craftspeople but there was significant respect for the apprenticeship model both in Ireland and internationally. For instance, we may note that there was a biennial global competition entitled '*The World Skills Competition'*, sometimes referred to as '*The Olympics of Craft Skills'*, where apprentices from all over the world, who have won national titles, compete for the prize of '*World Skills'* medals at the levels of gold, silver or bronze (Worldskills, 2009). In Sao Paulo in August 2015 there were fifty countries who competed in forty-five skill areas over four days, with the aim of inspiring future generations of high quality skilled professionals as well as promoting crafts and apprenticeships globally. The competition had a significant history, having begun in Spain in 1950 and has been hosted twice by Ireland and three times by Japan (Worldskills, 2009). Nonetheless, one may ask whether such events are enough to maintain structured apprenticeships into the future. For instance, the trade of printing had only two apprentices and the trade of book binding had only one apprentice (FÁS, 2010) in the same country that produced books of the highest standards of their time in Europe including the Book of Kells (c.750 AD), the Book of Durrow (c.600 AD) and the Book of Kildare (Ryan, 2000:36).

The promotion of value in high quality work and the economic benefits created by having skilled artisans within a region produced by a qualitative apprenticeship system was essential for an apprenticeship model to retain value within a culture. Companies who valued and promoted premium quality relied more on skilled labour and as a result, valued apprenticeship as a means to acquire that skilled labour (Descy & Barabasch, 2014:21). A study on the economic value of cultural heritage by Bowitz and Ibenholt (2008) found that economic studies on cultural heritage were grossly exaggerated and that many studies were unreliable or of poor quality (Bowitz & Ibenholt, 2008:2, 5). Bowitz and Ibenholt (2008) did reveal in their research details of the historic town of Røros, Norway where the cultural heritage of the town contributed 7% to the overall employment of the region (Bowitz & Ibenholt, 2008:7). A study by Ecorys (2010) reported that creative and cultural sectors including the heritage sector was estimated to be worth 2.6% of EU GDP as of 2003 (Ecorys, 2010:7).

The common perception of vocational training was that it offered '*the perfect'* solution to improve the opportunities for youths who lacked resources, skills or

motivation to continue into higher education (Eichhorst *et al*, 2012:1). In the economic crisis, more young people in Europe were made redundant than any other age cohort between 2007 and 2009 (Tamesberger, 2015:29). Lee (2009) argued that vocational education and training was;

> *"... also inclusive of a social issue, alleviation of poverty, through increases in employability."* (Lee, 2009:54)

While Tamesberger (2015) showed that young people benefited from strong vocational training structures by having a lower likelihood of becoming unemployed (Tamesberger, 2015:29). Berlia (2012) argued that vocational education could be used effectively to combat dropout rates in education and believed it was the answer to reducing unemployment and the migration to urban centres (Berlia, 2012:1, Meer, 2007:572). This was not the original aim of apprenticeship but it became the sole purpose of vocational education and training emphasised by the economic crisis which led to a devaluing of all technical education globally and damaged the quality of the apprenticeship as countries moved from the '*Dual system'* to a full State Controlled system which was poorly received by industry partly due to a decline in quality and partly because industry lost their influence into vocational educational curriculum (Koudahl, 2010:1903). Castro (1992) put it in stark terms;

> *"The widespread failure of diversified schools has much to do with the presence of an academic ethos which devalues the vocational subjects to the point where they are not taken seriously, even by working class students. Prejudice drives behaviour."* (Castro, 1992:147)

Lee (1998) highlighted the key issues that vocational education had to overcome in Mexico including high costs, lack of clear objectives, shortage of suitably qualified teachers and the low status of vocational subjects as viewed by students and the community. Lee (1998) outlined the trends in 1978, which showed that a steady decrease in the enrolment of vocational training programmes was due to the perception by parents and students that technical and manual jobs, hence technical and vocational education were '*inferior*' to professional jobs and academic education. As a result of this, a key part of the redevelopment strategy was to enhance the public image of vocational education (Lee, 1998:2-6). Connell (2004) highlighted the results of research

that showed workers in countries with general education such as Ireland and the United Kingdom were more likely to engage in work related training than those from countries such as Germany which had a highly stratified school systems, as the employees of general education had to compensate for a lack of specialisation in initial education (Connell, 2004:6).

Culture and traditions have also exerted a strong influence on the perception of apprenticeship in society (Knight, 2012:9). Knight (2012) and Meer (2007) stated that vocational education and training was predominantly associated with sub-professional occupations even though fifty years ago, an apprenticeship in pharmacy was available in Australia (Knight, 2012:9, Meer, 2007:59). Vocational training cannot be judged without context as many who have entered vocational education may have become a low earner even if they chose the general education path (Meer, 2007:560). One possible reason for a devalued perception of vocational training was that it offered little significant societal benefits such as having more enlightened parents and citizens compared to general education but that attaining a recognized certificate in a skill can signal a generalized value of that skill and it was the duty of the state to inform the employer about the benefits that a recognized qualification in vocational training could offer (Gorman *et al*, 2008:393). Elbaum and Singh (1995) demonstrated how the completion of an apprenticeship in the late nineteenth and early twentieth century preformed the same role as a degree does in modern times, i.e. acting a basic filter for job applicants (Elbaum & Singh, 1995:610). Although that connection may not have been broken completely, as in 2015 the University Vocational Awards Council in the United Kingdom released a guide on the newly approved Higher Apprenticeships and Degree Apprenticeships which were available in areas such as; Chartered Surveying, Construction, Aerospace Engineering among others (University Vocational Awards Council, 2015:13). While Kahyarara and Teal (2008) stated that the evidence of higher education offering better returns than vocational education was inconclusive (Kahyarara & Teal, 2008:2224). The Mexican experience demonstrated that promotion of an apprenticeship had little value unless it was built upon a credible and accountable model with rigorous quality assurance protocols.

2.3.5 Quality Assurance – the currency of societal value

In the seventeenth and eighteenth century, quality assurance in vocational apprenticeships were regulated by market forces with Masters who had a good

reputation of demonstrable training methods being able to charge a greater premium from apprentices who wished to learn from the Master (Minns & Wallis, 2013:348). Modern day apprentices in Ireland were designated as being '*employees'* and not considered to be '*in education'* as they were in other countries that operated the Dual System of apprenticeship (Steedman, 2010:27), often causing a lack of quality assurance controls in enterprises (Tamesberger, 2015:31). This created an inbuilt conflict of ideologies in Ireland between industrial training and further education versus the development of an individual as being the primary purpose of an apprenticeship, between the stakeholders within the National Training Advisory Committee who advised the Minister of Education on issues relating to vocational education. The reality for apprentices in Ireland was that the vocational apprenticeship higher certificate did not become a '*gateway'* award to Higher Education (English & Collins, 2010:4). Many providers within the vocational educational system found that the implementation of quality assurance was a challenge (Tierney & Clarke, 2007:136) not just in Ireland but across Europe (EU Commission, 2012:11). Bates (2011) stated that there were no effective quality controls within the Standards Based Apprenticeship system (Bates, 2011:68). O'Connor (2004) found that a high proportion of employers did not actually carry out any assessments of apprentices but returned a result merely on the presumption of ability (O'Connor, 2004:48), this issue of reliability across Competence Assessment Programmes was not uncommon as it was unclear if the programmes were designed to test *for* information or were a test *of* knowledge (Baartman, 2007:119). Further education and training in Ireland suffered from a lack of accountability and transparency (Steedman, 2010:27) with little national focus and an inconsistent quality of provision (McGuinness, 2014:viii). This question of quality control by those responsible for the implementation was cited as a concern in a 2010 report by the OECD who recommended that all VET trainers, teachers and instructors should have had some pedagogical training (EU Commission, 2014:3, EU Commission, 2012:11, ReferNet, 2013:31, Unwin, 2014:17, Tierney & Clarke, 2007:138). The lack of empirical evidence regarding vocational training in Japan suggests that similar issues may exist (Kito, 2014:64). The issue of teachers who lacked pedagogical training but were responsible for delivering the theory based elements of apprenticeship off-the-job education was not a new problem as highlighted in Ireland by the Ingram Commission in 1926 (Ryan, 2000:281). A contributing factor was highlighted by the OECD (2010) in a report which stated that some employers reported that apprentices were unable to complete their training due to the low level of literacy and numeracy, which was only

highlighted in the final and more sophisticated academic phases of the Standards Based Apprenticeship (O'Hare, 2013:14).

The concerns over quality in apprenticeships was not just confined to Ireland as the European Union established a European Alliance for Apprenticeships in July, 2013, with the aim of improving the quality and supply of apprenticeships as well as changing the perceptions of work-based learning in Europe (ETUC, 2012:9, Brunello, 2009:21). The European Parliament also set up the European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET) in June, 2009 which set out a systematic approach to quality through internal and external evaluation and reviews of vocational education in all EU member states (EU Commission, 2014:3). In the Canadian province of British Columbia, a survey of 2,750 apprentices was conducted in 2010 in which 16% complained about the quality of instruction experienced in their apprenticeship (Industry Training Authority, 2010:22). Dolphin and Lanning (2011) described the move by the United Kingdom Government to move away from provider based apprenticeships which was understood by both employers and young people to have been of poor quality and generated a low status of vocational education in England (Dolphin & Lanning, 2011:127-128). This negative experience, warned Dolphin and Lanning (2011), should be taken into account in other countries against increasing quantity to the detriment of quality as poor quality training had not benefited anyone (Dolphin & Lanning, 2011:128). The International Network on Innovative Apprenticeship stated that cost-benefit analysis of training showed how higher quality training increased the return on investment in training (Rauner *et al*, 2012:12). Although Tabbron and Yang (1997) averred that a review of the empirical literature over decades would show that the benefits offered by vocational education did not outweigh the costs (Tabbron & Yang, 1997:323). A survey conducted in 2011 by the European Commission into the attitudes towards vocational education and training showed a correlation between people's overall impression of vocational education and whether they think it offers high-quality learning (Eurobarometer, 2011:33).

This raises the question of competence of those responsible for the training apprentices; educators, instructors and employers and of the qualified apprentices at the end of their training period. Ashworth and Saxton (1990) stated that competence is a quality possessed by an individual as a direct result of learning and that performance is an expression of that learned competence (Ashworth & Saxton, 1990:10). Mitchell (1990) argued that competence was the ability to perform to predefined standards expected in industry and was best examined through the use of ongoing assessment to

offer highest validity (Mitchell, 1990:61). Sfard (1998) stated that competence meant being able to repeat what was required to repeat while changing what needed to be changed (Sfard, 1998:9). O'Connor (2003) argued that competency was something that the '*owner'* brought to his/her profession enabling that person to deliver higher order performance in their respective duties (O 'Connor, 2003:57). Baartman *et al* (2007) stated that education has become more increasingly learner centred and competence-based and offered a description of competence in action as;

> *"… consisting of connected pieces of knowledge, attitudes and skills that can be used to adequately solve a problem."* (Baartman *et al*, 2007:115)

Winter (1995) outlined research into competence based learning that reflected differing standards applied to academic and work based learning and roundly condemned the lack of intellectual rigour in vocational education in the United Kingdom (Winter, 1995:2). However Baartman and de Bruijn (2011) recognised that vocational learning was thought to be different from learning in academic settings, stating the difference as;

> *"In vocational education, learning addresses concrete professional tasks, taking place in the workplace or inside vocational schools. As vocational education aims at simulating students to gradually develop a vocation, competence development and identity formation are more specific and oriented to social practice. Academic education has a more general focus and is not oriented towards performance in social practice."* (Baartman & de Bruijn, 2011:126)

With the move of countries in almost every part of the world moving toward a competency based vocational education (Gonczi & Hager, 2010:403) it raises the critical importance of each constituent participant responsible for the delivery of apprenticeship model. The questions raised surround the quality of the those responsible for the delivery of apprenticeship training in Ireland and in Japan (Dolphin & Lanning, 2011:128, Kito, 2014:64, EU Commission, 2014:3, EU Commission, 2012:11, ReferNet, 2013:31, Unwin, 2014:17, Tierney & Clarke, 2007:138) suggested that for an apprenticeship to be a competence based apprenticeship model, required higher qualifications of those delivering the syllabus and better quality assurance protocols of on-the-job training.

A clarification in the language used to describe apprenticeship as well as a commonly accepted definition of apprenticeship would usefully inform the first principles and purpose of vocational education through those who have chosen work-based learning as a route to professional development to establish a sustainable and credible apprenticeship model as well as developing the human factor in vocational education.

2.4 User experience

A user-centric phenomenology of apprenticeship and the systems employed by different countries revealed key insights and experiences both positive and negative in the '*field'* within the *habitus* context of the users' perspective which indicated elements that can contribute to a successful apprenticeship. Brown *et al* (1989) emphasised the importance of activity and context within the learning model of what they termed cognitive apprenticeships (Brown, Collins & Duguid, 1989:33). As an educational model, apprenticeship has provided a number of learning precepts that allow an examination of the learning methodologies employed both successfully and unsuccessfully in both the Irish and Japanese apprenticeship models. Through first-hand accounts, the efficacy of the existing training systems were described, but before exploring the personal developmental journey of apprentices through their training, it may be informative to examine the origin of the language surrounding the delivery of apprenticeship including the key difference between vocational education and vocational training.

2.4.1 The Concept of an Apprenticeship Model

As outlined in the historical development of apprenticeship the words that surrounded a training model dating back centuries reveal its scope, structure and purpose. Words like '*gilda'* meaning money in Dutch, '*premiums'* which had to be paid to a master reflect the economic forces acting on apprenticeship, '*indentured'* or '*pactum'* show that a formalized structure has existed for centuries and even the word apprentice itself originated from the Latin root of '*apprehendere'* which means to seize, or lay a hold of as the apprentice seizes information and skills throughout the term of apprenticeship (O'Connor, 2003:36) reflect the pedagogical intent of the an industrial training model. The word apprentice is derived from the Old French word '*apprentis'* meaning someone learning, but the word for apprentice used in contracts by the Guilds that were written in

Latin was '*discipulus'*, a student (Brockmuller, 2008:69, Ó Murchadha, 2013:10, Bates, 2011:2) suggests a social aspect to the role of an employer toward the apprentice as the apprentice was guided through the knowledge acquisition process although the actual word '*apprentice'* did not appear in English documents until 1660, although the word '*prentice'* was used from about 1330 (Ryan, 2000:39).

2.4.2 Defining apprenticeship

There was no single fixed definition of apprenticeship as apprenticeship was subjected to varying policies from country to country (Ó Murchadha, 2013:10, Mazenod, 2014:1, Gopaul, 2013:6). Steedman (2005) explained apprenticeship as a formalised system;

> "*… in which the apprentice acquires the skills and knowledge required of the skilled worker, technician or professional practitioner*." (Steedman, 2005:1)

The use of key words such as "*learns*" and "*acquires*" in the definition of apprenticeship revealed the lower academic expectations of technical education when compared to liberal education as outlined by Unwin (2014:12), it also reflected the historical roots of apprenticeship as an instructional model based on acquisition metaphors (Sfard, 1998:5). A definition that covered the key aspects of the apprenticeship system was set out by Descy and Barabasch (2014) as;

> *"In this article, the term apprenticeship is used to designate forms of vocational education and training (VET) in which learning at the workplace alternates with learning in a school or training centre. Apprenticeship is fully part of formal education and training and upon successful completion, learners receive an officially recognised certificate. Apprentices usually have a distinct legal status. They have signed a contract or formal agreement with the employer and receive remuneration. The apprentices' wage is typically lower than that of a normal employee, thus accounting for their lower productivity.*" [sic.] (Descy & Barabasch, 2014:8)

This definition underlined, literally, the core principles that formed the prerequisites to a credible and formalised apprenticeship framework. The use of the word '*formal'* highlights the importance of a recognised structure of an apprenticeship model that

facilitated an identity and character to this model of training which separated apprenticeship from other types of vocational training or further education. O'Connor (2007) argued that;

> *"... legitimate professional identity or habitus derives primarily from an inner dedication to scholarly and professional activity and the accumulation of a distinctive body of knowledge which is practically engaged with the needs of others."* (O'Connor, 2007:749)

What was not obvious was a distinction between scholarly vocational education and vocational training activities within the structure of an apprenticeship model. A clear distinction between vocational training and vocational education would inform the separate aims of each phase of learning within the paradigm of apprenticeship.

2.4.3 Separating vocational education and vocational training

The literature from a number of countries suggested that vocational educational training was used as a catch all phrase to cover everything from non-academic subjects in schools to any type of industrial training including apprenticeships and up skilling traineeships of company employees. Lauglo (1993) highlighted the key difference between vocational education and vocational training as;

> *"Vocational training refers to deliberately organized measures to bring about learning as a preparation for work tasks in designated occupations or clusters of kindred occupations. As such, it implicitly aims to improve the productivity of labour. Traditionally, the term applies to preparation of crafts and skilled industrial work, below 'technician' level.....Conceptually 'vocational education' differs slightly from 'vocational training'. In addition to mastery of vocational skills, it aims to provide general education."* (Lauglo, 1993:1).

The separation of '*vocational education'* from '*vocational training'* may have been missed by many but it had major implications in the fundamental aims of apprenticeships under review in a changing industrial environment. This key variance was again emphasised by Hawley (2006) who quoted UNESCO and ILO (2003) for a more technical definition;

> *"Technical and vocational education is "used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life." This general view in practice leads to a differentiation between 1) vocational education focused on practical skills and 2) technical education which is focused more on technologies and related sciences. Additionally, in general technical education is provided at a higher level then vocational education, although this is not a simple division."* (Hawley, 2006:10)

Adams *et al* (1992) set out the core purpose, in board terms, of technical vocational education and vocational training as a system that by design was intended to engender or develop skills that were applicable in a specific occupation (Adams *et al*, 1992:128). Astumbe *et al* (2014) gave a more succinct definition of technical vocational education as education that led to the acquisition of practical skills underpinned by a basic scientific knowledge (Astumbe *et al*, 2014:56). In his paper on partnerships with industry, Lee (2009) '*clarified the essence'* of TVET by stating that;

> *"TVET encompasses programs providing participants with skills, knowledge and aptitudes that enable them to engage in productive work, to adapt to rapidly changing labour markets and economies, and to participate as responsible citizens in their society."* (Lee, 2009:39)

The use of the words '*responsible citizen'* by Lee (2009) was a sentiment echoed by the Guilds who saw apprenticeship as an important step in the development of a young person not only into mastery of his/her craft but also into civic participation (Thomas, 1929:37, Minns & Wallis, 2013:338). Knight (2012) highlighted the fact that even the term '*apprenticeship'* had a generic meaning consisting of both on and off-the-job training and should have been regulated and recognised by government and industry (Knight, 2012:9). While Gorman *et al* (2004) noted that much of what was labelled as on-the-job training was not effective training practice and did not lead to significant gains for the individual (Gorman *et al*, 2004:387, O'Connor, 2004:48). This confusion was reinforced by authors with a different lens on vocational education and training as demonstrated by Foster (1992) in a paper for the World Bank;

> *"Misunderstandings about this issue still dogs contemporary debate: when educators speak of vocational training they think in terms of a curriculum with an industrial, agricultural, or possible commercial content, but for the economist a 'vocational' curriculum is defined with respect to outcomes [sic],whether measured with respect to increased income or possibly enhanced opportunities for social mobility"* (Foster, 1992:150).

The lack of definitive clarity surrounding apprenticeship, vocational education and vocational training has added to the confusion of the core purpose of industrial based training systems. A clear line of demarcation should be made within the paradigm of apprenticeship to highlight the phases that are focused on vocational training, within the Irish standards based apprenticeship model were Phase 1,2,3,5 and 7 while the focus of vocational education were in the Phases 4 and 6 where more general education topics such as Leadership, and Communication were delivered but a clear progression is not visible through the progressive phases. Both vocational training and vocational education are required within the educational landscape, but vocational training has a very separate intent to vocational education and should be reflected in the title and structure of the training model. An examination of how the learner responds to the challenges of acquiring technical and social skills within a paradigm of learning that combines both vocational education and vocational training is explored next through the experience of the apprentice.

2.4.4 Apprenticeship as a Paradigm of Learning

Sfard (1998) opined that modern educational theories were divided into two metaphors, which she termed '*Acquisition Metaphor'* and '*Participation Metaphor'* with the more historical former concept which treated knowledge as a possession to be acquired while the latter more modern concept suggested that knowledge could only be fully developed within the participation of a community (Sfard, 1998:5,6). The apprenticeship model included elements of both knowledge acquisition in respect of certain technical processes and practices but also included learning that included several elements as set out by Wenger (2008) such as meaning, practice, community and identity, all of which combined and interacted to form a '*community of practice'* (Wenger, 2008:5). Lave and Wenger (1991) defined a community of practice as;

> *"… a system of relationships between people, activities, and the world; developing with time, and in relation to other tangential and overlapping communities of practice."* (Lave & Wenger, 1991:98)

The key characteristics of an effective community of practice as reviewed by Amin and Roberts (2007:354) outlined fourteen elements that could be categorized into the four basic elements set out above that revealed how the Irish model of structured apprenticeship which required a number of participants and environments allowed for a much more active community of practice to exist compared to the Japanese model of just a Master and an apprentice. Communication between the members of a community was an important factor in the effectiveness of an organization, a factor not explicitly practiced in the traditional Japanese apprenticeship model. However, Akhavan *et al* (2015) concluded that six factors were required for communities of practice to succeed, including; organization, interactions, infrastructure, support, strategy and overall organizational support (Akhavan *et al*, 2015:202, 210). A mix of learning modes within a single model to include elements of knowledge acquisition and participation (Tynjala, 2008:131) which was offered to the individual apprentice within the Irish apprenticeship system, offered the apprentice the context to participate within a community of practice with a strong identity during the on-the-job phases while the off-the-job phases focused on the acquisition of key skills and concepts, in an environment that was authentic and conducive to learning, regulated the potential negative effects of either metaphor (Sfard, 1998:11). This authentic learning environment, when reinforced with strong leadership and support through social partnership, ensured the training was varied and of a standard, that would develop the experience of the learner in the skill of contextualised reasoning, leading to knowledge creation (Faizal Amin Nur *et al*, 2015:158, Tynjala, 2008:133). The traditional Japanese practice of spending the entire apprenticeship with a single Master from whom the knowledge had to be stolen, did not offer the same balance of encouraged participation with the open delivery of technical concepts or knowledge, creating a very literal concept of training that was likely to have adverse effects on both the practice and theory of learning and teaching (Sfard, 1998:7). Brown *et al* (1989) believed that when educators act as practitioners to tease out key concepts to solve real world problems, the process may seem informal but is an authentic process that can be deeply informative for the learner (Brown, Collins & Duguid, 1989:37), these '*authentic activities'* were exercised in the off-the-job phases of the Irish

apprenticeship system, where apprentices were tasked with making a model piece of a real world item or installing some piece of equipment or infrastructure that required numerous opportunities of problem solving with the support of educators and peers while in a training centre or college. Thus the problem, the solution and the cognition were combined and embedded within the mind of the learner with the successful completion of each task (Brown, Collins & Duguid, 1989:42). The challenges that emerged despite the presence of these prerequisites were expressed in the experiences of apprentices surveyed in Ireland. Research by O'Connor (2004) of 165 apprentices showed that they found the off-the-job phases became more difficult as they progressed through the phases but 94% stated that the Standard Based Apprenticeship was either '*ok'*, '*good'* or '*very good'* (O'Connor, 2004:43). Wenger (2008) stated that human engagement in the world generally was first and foremost a constant process of negotiating meanings of our surroundings (Wenger, 2008:53), the apprentices in the Irish system may have found the negotiation of meaning difficult but rewarding when they engaged fully within their community of practice.

The Japanese apprentice was presented with a much more difficult negotiation, with little participation or time given to reification within the traditional Japanese apprenticeship experience which lacked the scaffolding of a nationally agreed structure such as the dual system but was perfect example of what Lave and Wenger (1991) described as a fundamental contradiction where the newcomer was being trained to replace the old-timer, setting up an inherent conflict within a narrow community of practice (Lave & Wenger, 1991:57). Okamoto (2011) outlined the difficult methodologies of the traditional apprenticeship for an apprentice in Japan under the tutelage of a Master using pottery as an example, he pointed out that, to become an expert potter was to learn the entire process of creating a piece of pottery, where the student had to watch and learn from the master, not asking questions but watching and learning in silence (Okamoto, 2011:161). Pringle (2010) described a particularly Japanese concept in the key principles of the '*3 Mus'* which was an attitude to work practices and methods that the apprentice was expected to learn peripherally from the Master, these three principals were outlined as;

> *"Traditional Japanese craftsmanship creates excellence by trimming away the "3 Mus". Muri is activity that is not reasonable or overly burdensome in relation to the task. Learning to apply just the right amount of force with a wrench is an example of weeding out muri. Muda is an activity that is wasteful*

> *and doesn't add value. The master's movements show an economy of motion that preserve his stamina so that he can be more productive than his young apprentices, who still show muda, wasted effort. Mura is inconsistency of process leading to uneven results"* (Pringle, 2010:1)

According to Tynjala (2008) this method of covert learning was criticised by Billett (2004), as hidden concepts or knowledge that were not self-evident required close interaction between the novice and the more experienced artisans who could make these hidden concepts more assessable (Tynjala, 2008:135). Lave and Wenger (1991) stated that conditions for newcomers that were adversarial or essentially involuntary servitude partially or completely distorted the conditions for learning in practice (Lave & Wenger, 1991:64). This invisible wall created between the Master and the apprentice meant that the primary characteristic of a community of practice could not be created as Wenger (2008) argued that the coherence of a community was the mutual engagement of all the participants (Wenger, 2008:73). The tradition of '*stealing the knowledge'* was in direct conflict with the Japanese concept of '*ba*' according to Tynjala (2008) who outlined this concept which was an intensely Japanese variant of Vygotsky's (1978) idea of the '*zone of proximal development'* (Tynjala, 2008:142). Vygotsky (1978) defined the zone of proximal development as;

> *"It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers."* (Vygotsky, 1978:38)

The key difference between the concept of '*ba'* and Vygotsky's '*zone of proximal development*' was the guidance of the teacher or instructor that created the conditions for the student to develop their knowledge from what they can achieve and what they may potentially achieve with the correct scaffolding of support. Vygotsky (1978) also highlighted a study of primates by Köhler in 1925 which Vygotsky cited to argue how a primate can learn through training by using its mental and mechanical skills but the primate cannot be made more intelligent, that is, it cannot solve advanced problems independently, it could not turn useful information into new knowledge (Vygotsky, 1978:39). Wass and Golding (2014) clarified that the scaffolding created by educators within the zone of proximal development assisted the learner in completing tasks but at

the same time enabled the student to learn from the experience, that is, to make a conscious distinction between '*structuring a task'* and '*structuring **and** critically analysing a task*' (Wass & Golding, 2014:677). Amin and Roberts (2007) recognized that craft/task based activity occurred within a community that was characterised by hierarchy but that these hierarchical communities were open to new entrants as long as the newcomers are willing to engage (Amin & Roberts; 2007:359).

The use of words such as '*scaffolding'* '*structuring'* and '*defined zone'* revealed the Western philosophical belief in external systems within educational theory that were not transposed easily onto Eastern ideas of self-transcendence, an internal transformation that was begun using the platform of '*ba'*. Nonaka and Konno (1998) begin the explanation of '*ba'* by stating that it was originally developed by the Japanese philosopher Kitaro Nishida and further developed by Shimizu and explained it as;

> *"… ba can be thought of as a shared space for emerging relationships. This space can be physical, virtual, mental or any combination of them. What differentiates ba from ordinary human interaction is the concept of knowledge creation. Ba provides a platform for advancing individual and/or collective knowledge. It is from such a platform that a transcendental perspective integrates all information needed. Ba may also be thought of as the recognition of the self in all."* (Nonaka & Konno, 1998:40)

Nonaka and Konno (1998) further explained that when knowledge was separated from the '*ba'* it became external '*information'* or '*explicit'*, it became tangible, transferable, however when the information was internalised by an individual it was transformed into '*knowledge'* or became '*tacit'* and could be used to generate knowledge creation. '*Ba'* can be amplified within a '*community of practice'* when it becomes '*basho'* and allows an individual to transcend one's limited perspective or knowledge (Nonaka & Konno, 1998:41). The development of the individual from one level of knowledge to a higher level of knowledge through positive influence of others shares a parallel with Vygotsky's (1978) idea of the '*zone of proximal development'*, the key difference within the paradigm of apprenticeship between the two concepts was expectation on the apprentice. Through '*ba'* the apprentice alone was expected to take explicit information and internalize it into tacit knowledge through the '*pure experience'* of a shared environment rather than through written or verbal instruction from an expert, this is kernel of the Japanese concept of '*stealing the knowledge'* and the '*the three Mu's'*

(Brown, 1989:23, Pringle, 2010:1,Okamoto, 2011:161) where exercises of repeated patterns and reflection were the focus rather than analysis or explanation, the aim of which was designed to develop external technical skills as well as internal higher cognitive skills such as ideals, values, mental models, beliefs and schemata (Nonaka & Konno, 1998:42) that was encapsulated by the title '*Shokunin'* referred to by Odate (Odate, 1984:viii) and described in detail by Brown (1989) as;

> *"In order to maintain continuity with the past, one of the master carpenter's most vital functions is that of education: training those who work under him. In real terms, this means providing them with the best possible example and allowing them to learn through observation and experience. Rarely is anything explained fully to the apprentice; he must draw his own conclusions and develop his own instincts. The reasons behind given instructions become evident in time, and no amount of prior speculation or analysis is as effective a learning tool as witnessing an actual process in an alert frame of mind. Some factors, such as the natural settling and movement of wooden structural members over time, can be grasped only after several years of observation, and then only if the carpenter has his original actions continually in mind."* [sic.] (Brown, 1989:31-32)

A hybrid of the two concepts discussed above was proposed by Kaiser and Fordinal (2010), termed a '*vocation ba'* where the opportunity of self-transcendence would be available with structured support (Kaiser & Fordinal, 2010:934).

In both apprenticeship models, the engagement with education and learning, a display of willingness in personal growth and metacognition were critical preconditions to the self-transcendence of a good craftsperson, who understood and valued the principle that the most valuable form of learning was focused on thinking rather than actions (Tynjala, 2008:131, Vygotsky, 1978:36, Kaiser & Fordinal, 2010:933). For a craftsperson who did not identify themselves with their craft was a mere spectator, this ethical and cognitive failure of the craftsperson made them, in the view of Crawford (2009), an '*idiot'*, a person who was not involved, the problem at hand was not his/her concern (Crawford, 2009:97-98, Tynjala, 2008:141). The attitude of the apprentice was a key constituent of competence as defined by many researchers that included knowledge, skills and attitude (Baartman, 2011:127). Vygotsky (1978) stated that learning was not development, but if properly organized, learning resulted in mental

development (Vygotsky, 1978:40). Wenger (2008) believed that participation meant that the individual was required to engage and contribute to the practices of their communities (Wenger, 2008:7). Mullins (2005) believed that no-one could teach a person who did not want to learn regardless of the model of teaching, that education of every kind began with an implicit contract between the student and the teacher, with each accepting that what they were engaged in was a meaningful activity (Mullins, 2005:157-158) which made the role of the employer as educator as important to an apprentice as the teacher was. This inclusion of the employer in critical aspects of the educational process of apprentices became more pronounced as the role of the '*technician'* changed and new and additional skills that included communication, analytical thinking and teamwork were required by the employment market (Garavan, 2011:8, Baartman, 2011:130). These new demands of the apprenticeship model offered a chance to realign the syllabus to include opportunities for engagement by the learner that would help strengthen the identity of learner with the knowledge and skills learned (Wenger, 2008:271)

In research conducted by Bates (2011), three apprentice painters and decorators outlined the resistance that existed in the work based environment to the asking of questions and the practicing of new or key skills, while the opposite was found in the off-the-job phases (Bates, 2011:38), a positive *habitus* of inquiry was believed by Unwin and Fuller (2008) to add an expansive element to apprenticeships (Fuller & Unwin, 2008:8). Asking questions and being given the space to practice skills were encouraged in the college, where there was '*a freedom to learn'* (Bates, 2011:38-51). Surveys in Canada (Industry Training Authority, 2010:34). In Ireland, research had shown that in the opinion of the apprentice, the time spent in a college was too short and should have been increased (Ó Murchadha, 2013:56, O'Hare, 2013:51). The need for transferal skills was a concern outlined by the EU Commission (2012) as abilities such as critical thinking, initiative, collaboration and problem solving were required in the new norm of unpredictable career paths (EU Commission, 2012:3). This focus on transferal skills was reflected in the curriculum review of the apprenticeship syllabus in Ireland in 2015 where two common modules were introduced, these new modules were focused on communication and team leadership. The Japanese tradition of apprentice education automatically included a physical, social and philosophical engagement of the craftsperson, this philosophy was reflected in the word for master craftsmen defined by Odate (1984) as;

> *"The Japanese apprentice is taught that shokunin means not only having technical skill, but also implies an attitude and social consciousness. These qualities are encompassed in the word shokunin, but are seldom written down"* (Odate, 1984:viii)

The transfer of the spirit of the curriculum as well as the letter of the curriculum was also a concern highlighted in the shift in emphasis from on-the-job training to third level training of nurses where an underline anxiety was growing that the soul of the nursing profession was being lost with the break in the connection between the practical task and the theoretical emphasis (O'Connor, 2007:752). The importance of cognitive engagement was equal to kinetic ability in skill acquisition characterized by Nokes (2010) into three equal parts: the cognitive (reflecting on mistakes made), associative (repeated practice of a skill) and automatic (the skill has become internalised and required little cognitive resources) stages, all three were required to master a skill (Nokes & Schunn, 2010:270). The engaged learner apprentice not only learned from more experienced craftspeople but also learned by teaching other apprentices in the situated learning context, an element that was often overlooked by educational ethnographers (Fuller & Unwin, 2002:5).

Bruijn and Leeman (2011) outlined how practice based learning can only occur if there was ample opportunity to access and experience that practice (Bruijn & Leeman, 2011:694). Yet, the apprenticeship model was still a series of pre-set tasks to be completed to a certain standard, these task oriented training systems which omitted the higher level competencies, Gonczi and Hager (2010) argued, were flawed (Gonczi & Hager, 2010:405). The effect was a reduction in status of the apprenticeship from a century earlier in 1925, where qualified crafts people were among the high paid elite of British workers and were expected to work autonomously with minimal supervision (Elbaum & Singh, 1995:598,611). This decay also emerged in the implicit educational contract between the apprentice and the employer, revealed through the criticism of the on-the-job training by those interviewed. The interviewees regarded the lack of on-the-job regulation and quality assurance as the main weakness of the Standards Based System (O'Connor, 2004:47). A survey by Tynjala (2008) and Virtanen (2005) revealed that respondents learned independence and vocational skills most of all, but they also learned negative things as well, including bad practices and how to shirk their duties (Tynjala, 2008:134).

An examination of the various theories of education and methodologies of learning show that the Irish apprenticeship model had moved in part to the more modern participation metaphor while still retaining sets of tasks that were to be acquired by the learner with no clearly defined pedagogical pathway of cognitive development from a reflexive to a reflective learning model even though the experience of the apprentice showed that it became more difficult as the phases progressed, the final phase, Phase 7 returned to a series of basic tasks to be completed on-the-job. A clear identity in the aim and structure of the Irish apprenticeship model should demonstrate the various stages of learner development from vocational training to a mix of vocational training and education ending with an emphasis on vocational education or bringing the learner who is typically in their late teens and a low academic achiever from an acquisition metaphor along the continuum into a participation metaphor with full participation in a community of practice. The Japanese apprenticeship model was intended to allow a learner travel along a personal journey of self-transcendence, typically through a difficult experience of '*stealing the knowledge'*, there was no structure or time limit on this journey but with the development of new educational methodologies and cultural changes it has become outmoded. While the difficult practice of '*ba'* may no longer be tolerated by modern apprentices in Japan, it was not without its merit, as information that was internalised into knowledge was not easily forgotten and the need to frame the Japanese apprenticeship model within a structure of an accepted learning methodology that encompasses both '*ba'* and a zone of proximal development is required to sustain the traditional skills into the future.

2.4.5 The benefits of the apprenticeship model to the apprentice

There were many primary and secondary benefits to a person who undertook an apprenticeship (Descy & Barabash, 2014:15), benefits which were as a consequence rather than a prime objective in the curriculum as set out by Unwin (2014) including;

- "*Human Capital: Knowledge, skills and competences.*
- *Social Capital: Networks and connections.*
- *Cultural Capital: Wider knowledge beyond the immediate occupational field.*
- *Identity Capital: Character attributes including self-confidence and self-efficacy*." (Unwin, 2014:9)

Apprenticeship also contributed in the development of entrepreneurship in the younger generations and ensured the continuity of craft, trades and small to medium size enterprises (Berneri, 2000:5). A survey referenced by City and Guilds (2009) showed that there were real financial benefits to completing an apprenticeship as those who completed a Level 3 (United Kingdom) apprenticeship received an 18% increase in wages while those who completed a Level 2 (United Kingdom) apprenticeship received a 16% increase in wages compared to other vocational qualifications (Shoesmith, 2009:2). However, the actual experiences of apprentices were varied but not without patterns emerging across time and geography. Research by Vickerstaff (2003) of former apprentices from 1945-1980 showed that apprenticeship was a popular option for young men throughout this period (Vickerstaff, 2003:271). Lewis (2013) showed that there was still an oversubscription of apprenticeship schemes run by employers with a good reputation (Lewis, 2013:4, Aring, 2014:2) with the prospective career earnings of apprentices being far superior to those in working-class jobs, 37% higher than semi-skilled occupations and 61% higher than unskilled work (Elbaum & Singh, 1995:599). In 2005 a common misconception of apprenticeship was printed in the New York Times newspaper, in an editorial that supported the cut in federal funding to vocational programmes in the United States of America, believing that vocational training prepared young people for low skilled jobs that no longer existed. In fact, the Bureau of Labour showed that wages for apprentices in a number of trades increased by an average of 16.3% between 1997 and 2002 while real wages for white collar workers increased by a mere 1.5% (Meer, 2006:559). In Ireland, the choice of apprenticeship was still a popular one among school leavers but the lack of employers meant many could not enter into a formal apprenticeship (Ó Murchadha, 2013:15). Steedman (2005) informed us that the dual-system apprenticeship in Austria, Germany and Switzerland provided training to more than half of all their young people, even in these countries there were not enough employers offering apprenticeship places in certain sectors (Steedman, 2005:21).

2.4.6 The negative experience of an apprenticeship

Apprentices in the mid sixteenth century recounted difficult experiences which had some parallels to the modern apprenticeship regarding their vocational training. Apprentices of guilds were tightly regulated in appearance and conduct, with punishment for crimes such as long hair or pilfering from the Master resulting in a flogging at the local Guildhall in the presence of other apprentices (Ryan, 2000:44). The industrial setting was often a difficult one for the vulnerable apprentice, who were

typically just out of school but had to adjust to the culture shock of now being in an adult world where systemic physical bullying of juniors occurred and verbal abuse was the norm (Vickerstaff, 2003:277-279, Fuller & Unwin, 2008:12). This behaviour was both experienced and witnessed by this researcher on a number of occasions during his time as an apprentice and as a craftsman in the late 1990's and early twenty-first century. The general belief of policy makers that the school to work transition was linear and smooth was misguided as it was actually quite fractured and chaotic in the actual experience of young people (Smith, 2004:263). The social conditions in a work environment can contribute to structured cognition (Billet, 2013:134) and the negative experiences of apprentices may have informed their view of education and training in the long term. Even relatively modern apprentices complained of being asked to conduct repetitive work or tasks that were not related to their craft (O'Connor, 2004:49).

The apprenticeship experience remained largely unchanged until recent times, the focus was on formal instruction using a prescriptive model of information transfer with little concern for quality assurance standards or the raw experience of young people in apprenticeship. Recent trends showed that the needs of employers have progressed beyond the traditional model of acquiring a specific skill which could be employed throughout the entire career of the craftsperson. The new symbolic-analytic service multi-role of the graduate and the apprenticeship was now required by industry as demonstrated by the example outlined in a cross border international case study of three German companies in the United States of America (Aring, 2014:54). The study focused on quality instruction and an adaptive curriculum that generated a successful model for the apprentice, employer and educational institutes involved. More and more studies into workplace learning have grown since the 1990's according to Tynjala (2008) that have shown how most graduates learn the required skills '*on-the-job'* and not in third level education where the skills they learned in college did not transfer to the work environment (Tynjala, 2008:131), this level of skills mismatch was reported to be at 40% in Ireland (McGuire, 2016:3).

A review of the various vocational educational approaches adopted by countries around the world demonstrated how apprenticeship has faced and endured challenges that revealed the importance of cultural context and correlations of vocational education and training systems from Asia to the Americas to demonstrated a an overall trend in vocational education and vocational training globally.

2.5 International perspectives on apprenticeship and vocational training systems

The Japanese and Irish apprenticeship systems may have shared similar origins, but they have evolved into very different paradigms which reflected the different cultural influences that have permeated down through the centuries old process of tacit knowledge delivery between the Master and apprentice. However, they were not the only versions extant and the experiences of other countries in apprenticeship has demonstrated important lessons in both the success and failure of various types apprenticeship models (Lave & Wenger, 1991:63) that were useful in the study of vocational education and training to determine the potential outcomes and futures for a competence based system of skills transfer in Ireland and Japan.

2.5.1 International overview of apprenticeship models

With the advance of technology and the increase of globalization over the past twenty years, the ability to openly compare vocational educational training systems has increased. The coordination and establishment of organisations like the Asian Academic Society for Vocational Education and Training, the European Network of VET researchers and the International Network on Innovative Apprenticeship (INAP) have demonstrated the move to an international level of quality vocational training development generally that would include apprenticeships (Rauner *et al*, 2010:19). In the global skills deficit noted by the Manpower Group (2015), the most chronically problematic sectors were recorded in the trade areas, followed by sales second and engineering third, with the greatest shortage faced by Japan at 81% - 83% from 2012 – 2015, with Ireland at the opposite end of the skills deficit spectrum at 2% -11% in the same period. For these reasons the need for coordination and development of the next generation of apprentices was already a pressing issue for many countries (Manpower Group, 2012:5, 2015:4). A study by the International Labour Organization on the apprenticeships of eleven countries stated that apprenticeship could offer solutions to youth unemployment and poverty if the apprenticeship model was a more attractive and efficient pathway to a productive career (Smith, 2013:v). This view was contradicted by Brunello (2009) with evidence in the OECD area that it did not achieve the aim of solving youth unemployment (Brunello, 2009:23). Steedman (2011) highlighted Switzerland as being the only '*dual-system'* that trained apprentices on a cost-neutral

basis (Steedman, 2011:103). Lee (2009) summarised the most common criticisms levelled against vocational education as follows:

> "*… poor quality, very high cost, training not suited to actual socio-economic conditions, disregard of the informal sector's needs, and disregard of the labour market and of the high unemployment rate among graduates*" (Lee, 2009:40)

Poor quality vocational training highlighted another concern globally which was a lack of quality assurance leading to a discredited system in society, the concerns increased when vocational training was divorced from government regulation (Adams *et al*, 1992:134). Young people voted with their feet as Gopaul (2013) stated that in most countries including Germany, young people were choosing the academic route over the apprenticeship route (Gopaul, 2013:7).

The informal or non-structured apprenticeship was widespread in a number of countries including the G20 countries, where the apprentice or apprenticeship was not governed or protected by legal statutes (Steedman, 2012:4). There existed essentially three basic methods of learning new skills for industrial purposes which Eichhorst *et al* (2012) classified into three distinct vocational education and training systems; (i) school based, (ii) a dual apprenticeship system combining school training with an industry based approach, and (iii) informal based (Eichhorst *et al*, 2012:1). This overly generalised definition may have been too broad and a more refined and useful description was offered by Koudahl (2010) as:

(a) The Market Model: Found in the United Kingdom, North America and in Asia, including Japan, where training was determined by market forces and had little State involvement. The main advantage was that labour was trained to a specific need and ensured employment. The main disadvantages were the concertina cycles of training which led to an uneven supply of skilled people and the quality was inconsistent with a narrow focus in the curriculum.

(b) The State Controlled Model: This model was used in France, Sweden and Finland where the training and regulation was conducted within state schools. An advantage of this model was the uninterrupted pathway into higher education if the student changed career direction. The main disadvantage was the skills learned by the student were not the ones required by industry and created a potential skills mismatch.

(c) The Cooperative Model: This was best demonstrated by the '*Dual System'* which operated in Germany, Switzerland, Austria, Denmark and Ireland. This social partnership model, where industry, Trade Unions, educators and government work together to a nationally agreed standard in both on-the-job and off-the-job training, this method was more expensive to the tax payer than the Market model but cheaper than the State Controlled model. (Koudahl, 2010:1901-1902)

According to Hawley (2006), the cooperative model was operated most successfully in Germany, known as '*Formal-Based VET'* but was it an expensive method and difficult to replicate in other countries including East Germany (Hawley, 2006:3). Despite the success of the German model, Steedman (2005) highlighted the decline in German apprenticeship numbers of 8% over twelve years (Steedman, 2005:15-16) and Smith (2013) showed that only the manufacturing industries attracted increasing number of apprentices while other areas struggled to attract any new apprentices (Smith, 2013:8). The State controlled model was regulated completely by a government body as in Mexico as well as in the Nordic countries where school based training suffered the perception of a low status among students and in the labour market due to the poor quality of educational standards (Koudahl, 2010:1903). The market model was popular with industry in Asia, many countries in Sub-Saharan Africa, Middle East, and North Africa and was largely exercised in the United States of America, as it gave industry full responsibility for vocational training but it had mixed results in quality. This type of training belonged to the category of '*Informal-Based VET*' and it was difficult to frame in a unified sense (Eichhorst *et al*, 2012:28). Berlia (2012) outlined six different approaches to vocational education from a second level student's perspective using the following cases from around the world;

1. Japan – simplest design with no streaming; relied on industry for vocational education.
2. French system – students were streamed into either vocational courses or humanistic scientific streams.
3. German and Irish system – based on a long tradition of apprenticeship using the '*dual system*'.
4. Latin American system – a hybrid of the French and German system.

5. Australian system – allowed transition between vocational and tertiary education systems.
6. North American system – used no streaming and relied on short term courses for vocational education (Berlia, 2012:20-21).

Berlia (2012) *inter alia* highlighted a problem faced by many countries in that adopting any one paradigm for any country would be unwise and unworkable as all the systems mentioned have evolved over decades and have been influenced by cultural, political and economic demands but Berlia (2012) did recommend the social partnership structure as the best course forward for vocational education in any country setting up or adopting a vocational educational programme (Berlia, 2012:21, Aring, 2014:1, Smith, 2013:1).

2.5.2 North Western Europe

A vocational system of education and training does not need to operate as a separate entity; it can work in a community of partnership as was the case in Western Europe and was also implemented in Nigeria where Public Private Partnership was seen as the best way forward to solve the skills deficit with industry contributing toward the costs of providing equipment and technologies (Atsumbe *et al*, 2014:56). The reason behind the partnership model was more than just a transfer of tacit knowledge, it was also to create a technological culture in Europe (Castro, 1992:145) if the curriculum of vocational education was to remain relevant (EU Commission, 2012:13). Ireland too, had a system of social partnership where industry provided training that functioned in partnership with colleges, a system that emerged from the traditional time served apprenticeship into the Standards Based Apprenticeship. This was developed under reforms in 1993, formally moving from the '*Time served'* system to the German '*dual system'* of apprenticeship training, but for that training to have value outside of a company it needed to be regulated and accredited by an approved government body as part of a National Qualification Framework. Lee (2009) argued that a two part objective was required in partnership delivery of vocational education. It should generate a tangible shared understanding of the varying skills required by society and provide proper training to the benefit of all the stakeholders (Lee, 2009:41). Public-private partnerships were important to the credibility of high quality vocational education because of the ability of the different parties involved to regularly discuss issues and develop policies that made a stronger and more relevant vocational educational system

(Hawley, 2006:2). Hawley (2006) pointed out that the most important lesson learned was that companies must believe that active participation in vocational education was in their best interests before they would hire graduates of vocational education programmes (Hawley, 2006:2). In countries where there was no tradition of partnership and the commitment to apprenticeship training was low, a decline was shown in the number of talented young people who chose the apprenticeship route (Steedman, 2005:7). This was one of the key aspects in the success of the '*dual system'* that Germany had exported to countries such as; Austria, Ireland, Switzerland, Egypt, Benin and Mali. Interestingly, in Germany, the apprentice had a special trainee status defined in 1969 and was not an employee as occurred in Ireland (Steedman, 2011:96).

Apprenticeship enjoyed credibility in society only when the entire programme had the following elements as outlined by Eichhorst *et al* (2012);

- *"The acceptance of apprenticeship contracts paid below regular contracts by trade unions;*
- *The willingness of many employers to provide training, not primarily in an informal manner but according to occupational curricula, to send apprentices to vocational school leading to certified occupational qualification, and to provide them with a credible prospect of sustainable employment;*
- *The support from the government in not only providing vocational schools and teachers but also preparatory training for young people failing to enter apprenticeships;*
- *The acceptance of VET by young people and their parents as a solid alternative to academic education."* [sic.] (Eichhorst *et al*, 2012:24)

Even the much vaunted German system has faced challenges in the recruitment of new entrants to the apprenticeship system as the registration rate fell from 70% in 1990 to 62% in 2002 in the 16-20 year old cohort. A similar decline in apprentices also occurred in Switzerland but had levelled off in Austria (Steedman, 2005:15-16). Smith *et al* (2013) described how differing areas of German industry generated different results between industry, crafts and trades with large companies receiving huge interest from prospective apprentices, while employers in less attractive trades like butchers and bakers struggled to recruit any apprentices (Smith *et al*, 2013:8). The German system suffered a further issue where demand outstripped supply of training places in certain

sectors and since the early 1990's delivered full apprenticeships entirely within a vocational school system, although this was not supported by industry due to the poor quality of the syllabus and lack of input into the vocational training content from industry (Koudahl, 2010:1903). The shift in students' preference towards higher education, after the introduction of shorter university degree courses in leading nations such as Germany, had resulted in a lowering of the average ability levels of applicants into apprenticeships as demonstrated by successive international tests of educational standards, adding to the difficulty of recruitment of suitable applicants for employers (Steedman, 2005:13). The variance of duration and types of apprenticeships in Germany may also have been a factor in decline in support from industry support and students of vocational training who can choose to be apprenticed in 320 areas ranging from Ice cream maker (24 Months), Banker (36 Months), Housekeeper (36 Months) or Bicycle Mechanic (42 Months) (Fitzmaurice, 2015:40-47). In contrast, the Swiss experience of higher entry requirements, raised the quality of the apprenticeships generally and reduced the training costs (Steedman, 2011:99). The '*dual system'* which has operated in Ireland, Germany, Austria and Switzerland was also considered expensive with the employer incurring all the on-site training costs and the government paying for the off-site training costs (Hawley, 2006:3, Eichhorst *et al*, 2012:20, Nyhan, 2013:3, Steedman, 2011:95).

However, a more expensive version of vocational education has existed in Finland where the cost of apprenticeship was entirely incurred by the government, offering compensation to employers who engaged in work based training (Mazenod, 2014:6). Finland was notable in one key respect, it achieved full equality of male/female apprentices in 1998 (Viinislao, 2000:22). In France, the Netherlands and in Denmark, apprenticeship was not part of the core DNA of industrial training and this has created better vertical integration, which allowed students to progress easily from vocational education into higher education, reducing the need for a rigid apprenticeship system (Steedman, 2005:20). In Denmark, a key feature that echoed the traditional Japanese apprenticeship, was the length of time served by an apprentice was determined, not by any national standard but in college between the apprentice and the teacher and could last anywhere from half the academic year to eighteen months, the employer was paid compensation while the apprentices studied in college (Shoesmith, 2009:3). France offered a complex range of varying types of qualifications at all levels achieved through day release off-the-job training, all of these qualifications could be achieved through full time study in school based or higher education institutes as a direct alternative

(Mazenod, 2014:7, Steedman, 2010:19). Sweden had a strong vocational route that was entirely based within the school system, it had no apprenticeship provision except for chimney sweeps or '*Skorstensfejarna*' (Torneklint, 2000:50) up until 2011 where limited reforms were discussed (Steedman, 2010:30).

In 2012, the EU Commission produced a report for member states on how Europe should develop a unified approach to skills development and asked Member States to step up efforts in;

- *"Developing world-class vocational education and training to raise the quality of vocational skills.*
- *Promoting work based learning including quality traineeships, apprenticeships and dual learning models to help the transition from learning to work.*
- *Promoting partnerships between public and private institutions (to ensure appropriate curricula and skills provision).*
- *Promoting mobility through the proposed Erasmus for All programmes."* (EU Commission, 2012:3)

The key aspects of the EU Commission report could be applied to all new forms of apprenticeships which should include; high quality training, promotion, social partnership and skills transferability.

2.5.3 United Kingdom

The United Kingdom demonstrated how a country with a strong tradition of quality apprenticeships regulated by the Guilds could be diluted to what Payne (2001) described as;

> "*… a somewhat fragmented system that has led to an inadequate supply of labour with intermediate level vocational skills"* (Payne *et al*, 2001:5)

The primary aim of apprenticeship became a vehicle to tackle youth unemployment rather than to close the skills gap (Payne *et al*, 2001:6). Regular reviews of apprenticeship occurred at Government level, and the first modern discussion began

with the Crowther Report of 1959, to move to a more participatory model with the introduction of generic core '*soft skills'* of problem-solving, communication, numeracy etc. at the expense of manual dexterity using the vehicle of the Tawney paradigm (1922), where the benefits of apprenticeships were delivered not just to the individual but to society as a whole, in the belief that this would align the British vocational education closer to the European tradition where vocational education enjoyed a parity of esteem with academic education (Kelly, 2001:25). Winter (1995) outlined research into competence based learning that reflected differing standards which applied to academic learning and work based learning, roundly condemning the lack of intellectual rigour in vocational education in the United Kingdom (Winter, 1995:2). Fuller and Unwin (2007:21) described the perception of apprenticeship as a '*third-rate pathway*' and pointed out that the United Kingdom was a good example of an apprenticeship in trouble when compared to its European counterparts since apprenticeship was chosen by less than ten percent of the 16-18 year old cohort in the United Kingdom compared to sixty-six percent of a similar cohort of whom were engaged in apprenticeship training in Germany and fifty percent in Switzerland (Stedman, 2008:1). A more recent effort to restore the reputation of apprenticeship in the United Kingdom was the formation of the National Apprenticeship Service in 2009 (Smith *et al*, 2013:12). A new version of apprenticeship called the '*Cognitive Apprenticeship Instructional Method'* as outlined by Maigida and Ogwo (2013) for automobile mechanic apprentices in Nigeria may be what the British system was aiming for. The authors outline the model as based on the traditional apprenticeship structure combined with modern pedagogical practice of engaging students with contextual problems based on real world experiences, it was aimed at facilitating the acquisition of multi-level thinking skills where the principles underpinning each action at every level were explained by an expert (Maigida, 2013:30-31). Although, according to McGuinness *et al* (2014), the Irish Standards Based Apprenticeship was seen potentially to offer lessons to the United Kingdom in a recent reform called the '*Modern Apprenticeship'* in the United Kingdom (McGuinness 2014:xii). Recognising the need to adapt and develop the much criticised traditional apprenticeship in the United Kingdom, the government through the University Vocational Awards Council developed Higher Apprenticeships and Degree Apprenticeships with the difference between these new apprenticeships and the traditional apprenticeship reflected in the language used in each definition;

(a) The United Kingdoms' Government definition of apprenticeship (Level 2-3) was:

> *"An apprenticeship is a job, in a skilled occupation, that requires substantial and sustained training, leading to the achievement of an apprenticeship standard and the development of transferable skills to progress careers."*

(b) The United Kingdoms' Government definition of Higher apprenticeship (Level 4 -7) was:

> *"Higher apprenticeships are national work-based programmes based on employer need that enable individuals in employment to develop the technical knowledge and competence to perform a defined job role. As such, a higher apprenticeship is not just a learning programme, but an approach to workforce development and enhancing business performance."* (University Vocational Awards Council, 2015:2-3)

The emphasis was clearly on vocational training with the aim of giving workers the required information to perform in a competent manner despite the intention of the Higher Apprenticeships to introduce vertical integration that would allow an apprentice to attend college or university via day release or block release which was to be decided by the employers and universities. The key development was the ability of the apprentice to progress along a predefined educational pathway through the levels up to Master's Degree (University Vocational Awards Council, 2015:12). An additional avenue of development in England was the establishment of Creative Apprenticeships at Level 2 and Level 3 (United Kingdom), launched in September 2008. They were designed exclusively for the creative and cultural industries in England, including craft, cultural heritage, design, literature, music, preforming arts and visual arts delivered by the National Skills Academy (Clifford *et al*, 2011:9). In 2013 the Department for Business, Skills and Innovation in England produced a number of reforms as a result of the '*Richard Review of Apprenticeships*' in 2012 with a move toward industry regulated and funded apprenticeships known as '*Trailblazers'*, these were exemplar employers who delivered quality apprenticeships with the expectation that from 2017/2018 all new Apprenticeship starts will have adopted this new system using '*Trailblazers'* marking the end of Government funded apprenticeship in England (Dept. of Business, Skills and Innovation, 2013:5) bringing apprenticeship in the United Kingdom full circle to a modern version of the Guild system of self-regulation, which reduced the cost to the Government but potentially at the cost of the quality of the apprenticeships delivered.

The United Kingdom showed how a country and culture with a strong tradition in craft skills and apprenticeship was not enough to offer security of tenure in society, despite having used a formal apprenticeship model for centuries.

2.5.4 The Americas

An independent vocational educational competence based system with the aim of high standards that would be valued by industry delivered entirely by a government body was attempted by Mexico in Central America. In December 1978, the Mexican government set up a new vocational and technical education system called the Colegio National de Educacion Profesional Technica (CONALEP) to address the shortfalls and inefficiencies of the old vocational education system which suffered from insufficient educational output, poor quality and management issues (Lee, 1998:3). The new training programme was three years long; it was a pre-service course for adolescents aged between 16-20 years of age who had to pay annual fees to participate. Training was delivered by experts from industry who could only teach part time up to twenty hours maximum and has proven itself in terms of increased numbers of applicants and the success in their graduates getting work at higher than average salaries (Lee, 1998:3). These reforms were Government led and not at the behest of industry which was interesting as the vocational developments in Mexico have been influential in many Latin American countries (Gonczi & Hager, 2010:407). Although it was reported that even at the height of the global economic crisis in 2009, more than 40% of employers in Mexico reported having difficulties in finding workers with the appropriate skills (OECD, Schleicher, 2011:1).

In Brazil the National Industrial Apprenticeship Service (SENAI or SENAC in Brazil and SENA in Colombia) was funded by the Brazilian Confederation of Industries with the aim of establishing standards and/or sharing costs (Adams *et al*, 1992:134). The rest of Latin America including Chile, Argentina, Uruguay, Paraguay, Peru, Colombia, the Dominican Republic and Venezuela began with a system similar to the Brazilian SENAI. In the early 1990's the Brazilian system moved to a second phase of vocational education that targeted the under privileged sectors of society, this was called the '*Jovenes'* or Youth Programmes, which were run by industry who also set the curriculum but it was regulated by government. This new demand led version of vocational education had a '*dual system'* element with classroom training followed by an internship and has proven to be quite successful, especially for women in terms of

higher employment and wages for those in the lower socio-economic strata of society (Eichhorst *et al*, 2012:21).

A similar system was set up in the state of California in the United States of America, with the enactment of legislation which created the California Employment Training Panel in 1982 since apprenticeship was not a standardised, uniform institution in the United States of America (Wonacott, 1992:3). This state sponsored panel was charged with providing funding for training in companies but not supplying actual training. The Employment Training Panel was a complex system with an independent panel, central administration, regional offices, a wide range of contractors and subcontractors. Its focus was to provide industry with structured quality on-the-job training in vocational training (Gorman *et al*, 2004:390). It was interesting to note that a number of attempts to introduce the '*dual system'* across the United States of America failed due to the inability of employer organisations to coordinate long-term training plans and a failure of the federalist government to adopt a national framework of qualifications (Eichhorst *et al*, 2012:24). In fact, structured apprenticeship in North America began to decline after the 1812 War between the United States of America and Great Britain, when Master Craftsmen declined to sign apprenticeship contracts due to the difficulty of enforcing these contracts, along with the rise of factories, which divided a craft such as weaving into separate repetitious production tasks requiring little training (Hamilton, 2000:2). Lave and Wenger (1991) stated that in the 1920s and the 1930s in Western Europe and the United States of America, apprenticeship was renewed as a form of worker exploitation to control the most valuable and least powerful workers (Lave & Wenger, 1991:64). Another factor in the decline of formal apprenticeships may have resulted from the fact that throughout North America there were no guilds or formal certification process in any craft (Hamilton, 2000:1), with the recent apprentice population in the United States at 0.3% of the working population (Smith *et al*, 2013:5, Elbaum & Singh, 1995:593). The first legislation in the United States of America to promote an organized system of apprenticeship was enacted at state level in Wisconsin in 1911, which placed apprenticeship under the jurisdiction of an industrial commission. This followed the enactment of state legislation requiring all apprentices to attend classroom instruction five hours a week. The most recent significant legislation in the United States of America was the Fitzgerald Act of 1937 which set the pattern for a system of Federal Government assistance in apprenticeship programs. The Federal Committee on Apprenticeship was reorganized and enlarged to include equal representation of employers and labour, plus a representative of the United States Office

of Education (Washington State Department, 2015). A judgement of the American apprenticeship system was delivered by industry when three German companies, VW, BMW and Siemens transplanted the '*Dual-system'* from Germany to the United States of America in 2011 (Aring, 2014:5) to address the lack of skilled technical staff required as the companies expanded their manufacturing facilities in North and South Carolina and Tennessee.

The American experiences demonstrate the challenge in reforming an existing system without the support of all the social partners to offer a sustainable and credible apprenticeship system.

2.5.5 Asia

Asia had a mix of countries at varying states of economic development and this was reflected in their respective vocational educational systems, with the most developed countries such as Japan, focused on higher skills and specialist areas, with Cambodia at the other end of the spectrum having no secondary vocational schools (Na, 2010:3). An example of a country in transition was the Republic of Korea where vocational schools were in decline compared to general schools since the 1980's (Na *et al*, 2009:16). As the Republic of Korea developed, specialised vocational training schools were branded '*second-class education'* and were considered suitable only for academically inferior students (Rho & Lee, 2008:12). In general, Asian countries followed the Nordic model of streaming young people into specialist vocational schools and then industry chose applicants from these schools. In Malaysia, legislation was enacted to create the Human Resource Development Council in 1992 with the primary aim of collecting a levy from industry to pay for training in the workplace, this was a successful initiative primarily for smaller size enterprises (Eichhorst *et al*, 2012:20). This system allowed vocational schools to move up the value chain to become technical schools, leaving industry to train '*blue collar*' professions that used to be the remit of the vocational schools. In Japan, a distinct evolution occurred between the traditional apprenticeship and industrial training with the rise of mass production which organized into a division of labour system requiring only workers with few skills but a high level of industrial discipline (Adams *et al*, 1992:128). This occurred in other Asian countries such as; Taiwan, the Republic of Korea, Hong Kong and Singapore, where the investment in general education allowed them to transform from low-income to high-income countries as specific skills were left to industry to provide and regulate (Foster, 1992:152). This industry led training policy produced a hybrid system of vocational education which

became known as Human Resource Development (HRD) or what Hawley (2006) referred to as '*the third way'*, which was the combination of education and training of individuals for the improvement and growth of both the individual and the organization (Lee, 2009:50-51). In Eastern Asia, the influence of Confucianism typically meant that citizens valued harmony, within family, community and society, however changes and globalization or '*cultural climate change'* caused a shift in attitudes towards the individual especially as companies could not afford to train employees as before, self-directed learning became the norm (Yang & Yorozu, 2015:12). With the rapid adoption of social modernisation policies in the People's Republic of China, a focus on vocational education revealed a skills shortage and the first of a number of reviews began in 1988 when the Ministry of Labour revised the national skill grade standards, followed by the first Catalogue on Job Classification published in 1992, a second and more detailed catalogue of occupations was published in 1999, it identified 1,838 job species, the Vocational Education Law of the People's Republic of China was adopted on May 19th, 1996 (Yan, 2007:61). Vocational training in the People's Republic of China was divided into low, medium or senior levels, with the majority of vocational training delivered in technical schools similar to the Scandinavian model, since the establishment of national occupational qualification certification system in 1994, the People's Republic of China has given occupational qualifications a statutory status. In 1995 the People's Republic of China also began the annual '*China National Skill Grand Award*' for 10 skills and '*National Skill Crackerjacks*' [sic.] for 100 participant places (Yan, 2007:62).

The documentary research on apprenticeship and vocational training in Asia revealed how countries can outgrow the apprenticeship model as the economy develops and the country moves towards a service based economy, leaving apprenticeship to be left behind general education in the minds of students looking toward future career paths.

2.5.6 Russia

The role of Guilds in the past to regulate the quality and number of entrants was reintroduced in a modern format, that of the Enterprise or Company Associations in Russia. The Russian Union of Entrepreneurs and Industrialists had over 328,000 members from across various enterprises in Russia which had committees focused on standards and quality of vocational education and training (Hawley, 2006:8). The Russian review of vocational training involved the introduction in early 2000's of

'*Functional Analysis'* to review what core skills existed and what core skills were required and would be required by industry (Oleynikova, 2007:78). This system was a basic part of the educational review that fed into the key learning objectives in the partnership model. It was also a reaction of economic fortunes which saw the use of the *'dual system'* before the transition to free market capitalism which marked the abrupt end to the expensive '*dual system'* in favour of the current industry demand led model (Eichhorst *et al*, 2012:20).

The Russian example highlighted how quickly the fortunes of apprenticeship can change, without warning, showing the fragility of the apprenticeship model even in a large socialist country.

2.5.7 Australia

In Australia, a bilateral system evolved from the early British system of indentured apprenticeship at the time of colonisation in 1788 to a shift in focus towards '*traineeships'* in 1985 with a further change of the vocational progression pathway to the front loaded 2+2 model in vocational schools in 1996. In this model the first two years of apprenticeship were delivered while an apprentice was still at school, with the remaining two years spent with the employer that included on and off-the-job training (Knight & Karmel, 2011:106). Known as school-based apprenticeships, they were introduced to industry in 1998 marking the end of the time-served model to a competence based model which allowed the removal of the rigid structures that regulated the intake of applicants to accommodate the changing needs of society and industry (Knight, 2012:10). A distinction evolved in the nomenclature of vocational training in Australia, where '*traineeship'* covered Levels 2-3 on the National Qualification Framework belonged to non-trade occupations and '*apprenticeship'* which were at Levels 3-4, referred exclusively to trade occupations. Both levels were regulated by a '*contract of training'* which specified the rights and responsibilities of the major parties, although there were no penalties for braking the contract and completions rates were 52% for Traineeships and 45% for Apprenticeships (Knight & Karmel, 2011:106). Unlike Europe, apprenticeships did not represent a major part of vocational education with just over one-fifth of applicants engaged in vocational education that led to a recognised qualification and less than 10% of 15-19 year olds were taking part in an apprenticeship, although demand increased temporarily as the number of apprenticeships increased (Steedman, 2010:5-7). While apprenticeships enjoyed a higher status and more recognition than traineeships due mainly to the

established career paths that apprenticeships led to, the total number of apprenticeships declined as a result of technological change or because the products produced no longer needed the same amount of repair or maintenance (Knight & Karmel, 2011:108). The management and regulation of the Australian apprenticeship system was delivered through a fragmented infrastructure of state, semi-state and private bodies including; Australian Apprenticeship Centres, Skills and Training Information Centres, Registered Training Organisations, Further Education Colleges and Group Training Companies, with funding available from State and Federal sources (Steedman, 2010:7-8). While the Australian apprenticeship system was highly regarded, the need for change received little support from the stakeholders who were satisfied with the status quo (Knight & Karmel, 2011:108).

Australia made a deliberate effort to distinguish between traineeships and apprenticeships to maintain the credibility of the apprenticeship model in society however, despite this and having a formal structure to scaffold the apprenticeship model, economic forces resulted in a decline in some areas of craft skills.

A condensed review of apprenticeship models delivered in a number of countries across the globe including developed nations in Western Europe, developing nations in Asia and South America revealed some key patterns in the delivery of vocational education and training. Culture was an integral element in the choice and method of apprenticeship delivery, the exemplar apprenticeship paradigms occurred in countries such as German, Austria, Switzerland and Australia with a high regard for technical knowledge and skill, maintaining a robust vocational training tradition offering clear pathways through a country's educational qualification framework but even this was not enough to prevent the decline in potential vocational applicants who selected general academic education over the apprenticeship route. The move toward general academic education and away from vocational education by prospective students increased with each country's economic development and this was seen in Korea as well as in countries with highly regarded apprenticeship models such as Germany. It was also shown in North America and Russia how the absence of social partnership between governments, educators, employers and trade unions was essential, combined with a tightly regulated quality assurance process, to make up two of the key pillars in any successful apprenticeship system valued by society and supported by industry to help prevent sudden shocks to the system. The move globally toward industry led training systems and away from expensive traditional apprenticeship models, with the only cost neutral

example available being Switzerland, suggests difficult circumstances for both the Japanese and Irish apprenticeship models into the future. Without industry support, apprenticeship cannot exist in any meaningful way, but industry is synchronized to economic fortunes, nationally and internationally which can produce opportunities and challenges in equal measure, determining the viability of any apprenticeship system.

2.6 Opportunities and challenges for apprentices and apprenticeship

Traditionally, completion of an apprenticeship did not mark the end of a crafts-persons training, it was the opposite, but what was the potential reward for the years dedicated to perfecting a skill and how were newly qualified apprentices affected by economic events outside the realm of craft training? The craft area was not independent or protected from economics, it was generally industry led and tightly bound with the economic cycles which triggered reviews of the apprenticeship model in various countries, with preferences swinging in emphasis from vocational to general education and back again. But despite the numerous crises faced by the apprenticeship model, it continued to persist, largely unchanged into modern times in Ireland and Japan, the reasons for this may be that it offered benefits to both the employer and apprentice that outweighed the costs (Elbaum & Singh, 1995:620).

2.6.1 The economics of apprenticeship

Apprenticeship was once a protectionist device employed by Guilds to regulate competition, but it was also a contributing factor that facilitated the industrial revolution in Britain (Ben Zeev *et al*, 2015:3). The supply of skilled mechanical apprentices facilitated the technological conditions for industrial advancement, which fuelled the industrial revolution, a cycle that may be repeated as the world emerges from a global economic decline and the demand for skilled workers in the traditional craft area as well as new areas such as services and Information Technology increase (Manpower Group, 2015:4). The conditions for a renewed importance of the role the apprenticeship model within an economy were potentially available with the development of new and adapted forms of vocational learning structures such as Degree Apprenticeships, available in the United Kingdom that offered clear progression pathways into higher education. This pathway of educational development was important as it potentially added value to

human capital investment as the economic investment in apprenticeships offered a loss in areas such as manufacturing or at best were cost neutral in craft or service areas to employers (Mohrenweiser, 2008:19). The single exception being Switzerland where a return on apprenticeship was shown in the first year for three year apprenticeships and in year two in four year apprenticeships (Wolter & Ryan, 2011:522). As countries around the world developed at various rates of economic growth, the need to employ differing types of apprenticeships was demonstrated. The cost and quality of these programmes of knowledge transfer were a key factor in their long term success or failure. In well-established dual apprenticeships, companies had achieved long-term returns even when the training costs of apprenticeship in the first two years exceeded the investment costs to the company (EU Commission, 2012:12). A good economic example of apprenticeship was demonstrated by the Swiss experience of having higher entry requirements which raised the quality of the apprenticeships and reduced the training costs (Steedman, 2011:99). Steedman (2011) pointed out that Switzerland was the only '*dual-system'* that trained apprentices on a cost-neutral basis (Steedman, 2011:103, Wolter & Ryan, 2011:522). One contributing reason for the economic success of the Swiss model may have been due to the practice of companies '*sharing*' apprentices as required (Koudahl, 2010:1904). Countries without a strong vocational structure have suffered higher unemployment rates especially among the 15-24 year old age group compared to countries such as Austria and Finland which enjoyed relatively low youth unemployment during the economic recession. Data collected in twelve European countries from 1988-1997 showed that a 1% increase in aggregated unemployment led to a youth unemployment rate increase of 1.3% (Tamesberger, 2015:27-28). Benefits to the employer were examined by Clifford *et al* (2011) through the newly established Creative Apprenticeships in the United Kingdom, where positive financial returns were shown through reduced induction costs, recruitment costs, and greater productivity of employees (Clifford *et al*, 2011:36-39).

2.6.2 Market conditions; supply and demand

The fortunes of all supply led apprenticeships, including the Irish apprenticeship, was directly linked to the economy, as the first condition of an Irish apprenticeship was to sign a four year employment contract with an employer. This principle functioned well when the new Standards Based Apprenticeship was implemented in 1993 as the Irish economy was at the beginning of a long rise in economic fortunes meaning the need for apprentices was amplified due to the economy becoming almost entirely dependent on

construction (Kis, 2010:21). The total number of apprentices in twenty-seven recognised trades registered in Ireland (See Apendix F) during 2006 was 8,461 by 2010 this number was reduced to 1,204 (FÁS, 2010:9), by 2011 only 2% of school leavers entered an apprenticeship (ETBI, 2013:5). More and more apprentices became redundant to the economy, literally, resulting in 7,409, apprentices in 2010 being officially recorded as having no employer and unable to finish their apprenticeship (FÁS, 2010:9). This created a ripple effect throughout vocational education and training in Ireland. In the researchers' own college for instance, there were ten classes of Carpentry and Joinery apprentices in 2008, in the academic year of 2012-2013, that number was reduced to zero. This abrupt decline resulted in new discussions on the development and progression of apprentices into different areas of expertise through the acquisition of transversal skills education such as Rainwater Harvesting, Farm Forestry, Rural Tourism etc. (FÁS, 2010:17) something many apprentices may not have considered previously.

At the same time in Japan, the economy was progressing quietly with the GDP per Capita in US$ in 1998 growing from 23,966 to 34,132 in 2008 a forty two per cent increase, by comparison in Ireland in 1998 the equivalent figure was 23,996 and rose to 41,493, a seventy three percent increase in the same time period (OECD, 2010:3). However, whilst the Japanese may not have enjoyed or suffered the consequences of a construction '*bubble'*, the interest in the craft area as a whole in Japan had slowly declined with many trades and crafts facing extinction (Henrichsen, 2004:6, Philip, 1989:48) as the conditions required for a sustainable craft culture no longer existed (Buntrock, 1998:71-73). Brown (1989) stated that carpentry as an occupation was not finically rewarding as the Japanese value system had come to distain manual labour and young people do not want to do manual labour anymore (Brown, 1989:30). Statistics from the Association for the Promotion of Traditional Crafts (2016) in Japan recorded a decline in the in the craft area as follows:

Description	2012	1979	% Difference
No. of People employed in the Craft area	69,635	288,000	-75%
No. of Companies in the Craft area	13,567	34,043	-60%
Annual Turnover of the Craft Sector in Billions of Yen in 1983*	¥104	¥540*	-80%

Table 2.1: Decline in Craft Area Employment in Japan

The Japanese Government responded to the long term decline by enacting the Den-San Act in 1979 to promote traditional crafts and protect production methods at a national level. This included the establishment of the Association for the Promotion of Traditional Crafts which set up a retail website (www.kougeihin.jp) in 2009 which allowed crafts people to sell their goods directly to customers domestically and internationally.

2.6.3 Emerging trends in apprenticeship

The challenges faced by vocational education generally was summarised by McCrone (2014) for the National Foundation for Educational Research as;

(a) "*establishing sustainable structures and funding systems*

(b) *providing high-quality vocational qualifications*

(c) *addressing entrenched views that academic routes are better*" (McCrone, 2014:2).

McCrone (2014) revealed the public perception of apprenticeship stating that, in England;

> "*65% of Teachers would rarely or never advise a student to take an apprenticeship if they had the grades required for University entry.*
>
> *Only one-quarter of parent's judge vocational education to be worthwhile.*
>
> *Approximately one-third of 14 to 15 year-olds said they were quite happy to do an apprenticeship, but by 19 to 20 years old, only one-tenth had actually done an apprenticeship."* (McCrone, 2014:3)

This negative perception toward apprenticeship was also evident in Ireland, where apprenticeship has a serious image problem (McGuire, 2016:1) as well as in Europe, with the European Commission (2012) reporting that education and training systems were falling short in providing the right skills for the reality of the working environment, which created a skills mismatch (EU Commission, 2012:2) with 40% of employees reporting in 2015 that they were not working in the area they had been educated in (McGuire, 2016:3).

Mouzakitis (2010) highlighted the key role of vocational education and training, regarding it as key to the economic development of a nation with the main benefits being;

- Providing instruction in specific fields that required technical skills over a general academic education.
- It allowed students to develop an expertise in a specific career.
- It provided flexible programmes that were available from a variety of sources (Mouzakitis, 2010:3916).

A review of the recent research into possible trends and/or warning signals in the ecology of Japanese skills also revealed negative indicators as identified by Okamoto (2011) who warned that crafts were at a key turning point in the history of Japanese traditional skills (Okamoto, 2011:158). Okamoto (2011) came to this conclusion after studying closely the master craftsmen of pottery in Okinawa where the lack of successors meant that many arts which required a high degree of skill were not being passed on to the next generation and three key aspects were identified that have brought Japan to this critical point in the Japanese culture of craftsmanship;

1) *"The astounding development of an information-distribution system that allows information through research on the internet, making it unnecessary to ask masters and mentors for guidance;*
2) *The master-student relationship has a lower value since it is a strong hierarchical relationship, and this paternalism is not so much respected today.*
3) *An adverse effect of mass democracy where the wise and ignorant are all equal."* (Okamoto, 2011:158)

The second and third points are interconnected with individual cultures becoming homogenised, a system built on a particular cultural tradition was always going to have an uncertain future. One of the factors that may have contributed to the perceived demise of apprenticeship in traditional craft areas in Japan may have been as a result of the actual training methods themselves, where a student was expected to '*steal the knowledge'* from the Master rather than a Master instructing an apprentice on the best practices of a particular skill, perhaps in this new '*information-distribution system'* the traditional method of '*watch and learn'* instruction had moved to the Internet as

suggested by Okamoto (2011). Tahara-Stubbs (2014) reported that in Japan the dwindling population and severe labour shortage due to large projects such as the reconstruction of the North-East region of Japan following the earthquake of 2011 and the 2020 Tokyo Olympics meant that Japan's construction industry faced a shortfall of 230,000 workers in 2015 and the Japanese Government began to seek workers from other countries even though only 12% of the Japanese population found this option acceptable (Tahara-Stubbs, 2014:1). Another factor was highlighted by Lyau and Liu (2010) in a study conducted in Taiwan comparing the income levels of vocational school graduates with the income levels of general education school graduates which showed that during the period from 1977 to 2006 general education school graduates earned higher incomes, this research related to general education students who did not enter into any further schooling. Two reasons were offered, the first was that the vocational school curriculum was too narrow meaning newly graduated students could not adapt to newer technologies used by industry and the second was that education was used as a filter by employers, who saw students with ability in school having the potential to be valued employees (Lyau & Liu, 2010:78-80). This weakness in vocational education was recognised by Na (2010) who highlighted the change in developed Asian countries to reform their respective vocational education and training systems to meet industries' demand for creative and intelligent workers with abilities in science and technology (Na, 2010:2). Chuang and Tsai (2010) outlined the change in the curriculum in vocational education in Taiwan to include two concepts; Science Technology Society and Project Based Learning to develop knowledge and skills in science, technology, communication and problem solving (Chuang & Tsai, 2010:74). The general shift from knowledge domain-based to criteria-based qualifications that Allais *et al* (2009) stated was an emerging trend, created an inherent conflict between vocational education and higher education;

> *"… it is important to raise questions about how far the quality of learning can be guaranteed without the stipulating content that is specific to different occupational sectors and without recognizing that the learning opportunities in college are different from and cannot be equated with those offered by workplaces and vice-versa.*" (Allais, Raffe & Young, 2009:15)

The Irish system of apprenticeship had also gone through major structural changes to remain relevant to all the stakeholders involved, while maintaining a credible

standard. Hawley (2006) outlined the major stages in Irish vocational education policy with a fundamental change to a more formal vocational structure to include accountability of standards. A major change occurred after a severe economic crisis in the 1970s-1980s which marked the birth of Social Partnership programmes that would involve government, industry, trade unions and NGO's in forming agreements and policies including educational policies to promote economic prosperity (Hawley, 2006:13). It was from this system of partnership in 1993 that the new apprenticeship model was created, which took the traditional apprenticeship from a time served model to a standards based model that included distinct phases divided between the employers and vocational education providers. The view of the Education and Training Boards Ireland (2013) was that changes were needed to sustain apprenticeship in Ireland into the future, the ETBI proposed;

- Expanding the range of career areas covered by apprenticeship
- Changing the curriculum to include key areas such as creativity, technology, communication, innovation and science where appropriate.
- Raising the basic entry requirements into apprenticeship.
- Offering exit qualifications for each stage of the apprenticeship completed.
- Expanding the levels of qualification on the National Framework of Qualifications up to Level 7.
- Having varying lengths of apprenticeship terms.
- Greater interconnectivity between apprenticeship and higher education.
- More and better use of modern information technology to deliver off-the-job training.
- Develop a more balanced apprentice recruitment policy to minimise skills shortages. (ETBI, 2013:6-16)

In Ireland the establishment of Skillnets in 1999 as an independent body made up of the social partners was charged with the responsibility of responding to the critical need for up-skilling the workforce in small and medium size enterprises, which would lead to enhanced skills, employability and competitiveness, funded by €24.24m in government grants (Berlia, 2012:19). Foster (1992) outlined how general education was preferred by the World Bank over vocational education in the economic development of third world countries;

> *"Now, we are informed that the Bank proposes to reduce massively its assistance to vocational and technical education and increase its support for improvement in the quality of general education at the primary and secondary level"* (Foster, 1992:152).

Although the European Commission (2012) stated that;

> *"Investment in education and training for skills development is essential to boost growth and competitiveness; skills determine Europe's capacity to increase productivity. In the long-term, skills can trigger innovation and growth, move production up the value chain, stimulate the concentration of higher level skills in the EU and shape the future labour market."* (European Commission, 2012:2)

One possible explanation for the shift away from vocational education by the World Bank was based on the evidence that general education offered the population of a developing nation more opportunity than vocational education would, especially when government resources were not available to set up high quality training centres with recognised standards, so that parents were acting completely rationally by choosing general education over vocational education (Foster, 1992:150).

McIntosh (2007) showed that the costs of training incurred by employers using the Modern Apprenticeship in the United Kingdom in five different areas including; Construction, Engineering, Business Administration, Retail and Hospitality were out weighted by the value returned to the employer once the regular wages were subtracted (McIntosh, 2007:31). In Ireland, a comparison of costs was done comparing the unit cost of delivery for laboratory based courses in Institutes of Technologies for Engineering students which were €10,233 while the Average Net Cost to the State per apprentice was €4,705 in 2011 (Fitzmaurice, 2015:18). The issue of cost in vocational education was a recurring one, it was a factor behind the rise of public private partnership models in vocational education that were '*demand driven'* and '*market-oriented'*, returning vocational education and training to its roots (Oleynikova, 2007:75).

But the original industrial landscape where the indentured apprentice would pay the master for his training and the master would be responsible for the vocational and

general education of the apprentice throughout the seven years of the apprenticeship (Knight, 2012:9) had itself become obsolete. Modern economies required individuals with transferable skills who were flexible, adaptable and mobile within the labour market to be effective (Kelly, 2001:21). A study by Fitzenberger *et al* (2015) showed that apprentices who moved to a new employer suffered a wage loss of 3.3-4.0% for a period of up to 7 years, however a change of occupation within a firm resulted in a wage increase of 12% (Fitzenberger *et al*, 2015:149), which showed that transversal skills can have a financial benefit to a qualified apprentice but only if they remained with the same employer. With the requirement of the individual to be mobile and transferable, it made it unlikely that firms would invest in long and expensive forms of traditional apprenticeship training such as the '*dual system'* and the willingness of firms to invest in apprenticeship training was an essential element in the success of skills training (Eichhorst *et al*, 2012:15).

In the long term however, the evidence showed how the benefits of such a rigid structured system of training dissipate over time (Eichhorst *et al*, 2012:23). In developing economies the trend was toward entrepreneurship or to work unrelated to the occupations learned as shown by the Gambian experience which ran the National Youth Service Scheme in the 1990s (Eichhorst *et al*, 2012:26). Payne *et al* (2011) defined the key metrics in assessing the overall value of modern apprentices within a United Kingdom context but it could be applied to all modern apprenticeships;

> *"First, the effect of MA's [Modern Apprenticeships] on individuals. If individual productivity is not affected by participation in MA compared to a counterfactual involving non-participation, then the wider economy effects of the policy will generally be absent. Second, the scale of the programme. Even if MA is very successful in raising earnings and the job chances of participants, it is unlikely to have significant implications for the rest of the economy if the number of participants is very small in relation to the aggregate labour force."* (Payne *et al*, 2011:60)

A review of the benefits to the individual who successfully completed a Modern Apprenticeship demonstrated that a graduate of a Level 3 apprenticeship earned 29% higher income than an individual with the higher qualification of Level 2 (McIntosh, 2007:17). The same research showed the Net Present Value of a Level 3 apprenticeship per pound sterling of state funding in the United Kingdom was £17 and the Internal

Rate of Return was 35% (McIntosh, 2007:35). So if the economics of a traditional standard's based apprenticeship produced positive financial returns but the content was outmoded, a change in the learner outcomes was required, referred to as transversal skills or a transience curriculum as outlined by Mouzaakitis (2010) which would produce learners who would be able to; (1) use technology, (2) think critically, independently and creatively, (3) communicate concepts and ideas, (4) develop and enterprising mind-set and (5) work effectively in teams (Mouzaakitis, 2010:3916) which was very different to the principles of traditional vocational education, especially in Ireland where the 1931 Apprentice Act was designed to address some of the deficits created by the earlier 1898 Act which was criticised for the academic nature of the curriculum (McGuinness *et al*, 2014:9).

2.6.4 Potential sectors for apprenticeship development

The economic crisis in Ireland eroded the monolithic cornerstone of the economy that was the construction industry to reveal the value of the Repair, Maintenance and Improvement works of buildings to construction firms. Ireland's stock of protected structures and built heritage, a default legacy gift from colonial times, created the statuary obligation not to endanger these valuable architectural structures, contributing in real terms to the tourism and richness of the Irish Landscape (Ecorys, 2010:6-8). A study by the National Trust in the United Kingdom demonstrated the value of the built heritage to be 2.6% of Scotland's overall Gross Added Value, 1.9% of Welsh GAV and in Europe the value of the Heritage, Creative and Cultural sectors generated 2.6% of EU Gross Domestic Product in 2003 (Ecorys, 2010:7,8). In 2010, the Office of Public Works in Ireland was responsible for twenty-eight historic properties but there were 124,066 National Monuments and 38,475 protected structures recorded, with 175,000 surviving buildings, approximately 11% of the total building stock within the Republic of Ireland which were built before 1919 (Ecorys, 2010:11). Potentially the repair of this heritage stock could create 17,921 jobs in the support of the built heritage construction sector, worth €775 million or 4.2% of the total national construction output (Ecorys, 2010:20). In 2013, The Heritage Council of Ireland called for the creation of new apprenticeships tailored to the specific needs of the National heritage including the crafts of;

- Retrofit insulation installation
- Lead sheet working

- Thatching
- Slating
- Lime mortar and plastering (Starrett, 2013:3).

Other areas such as the Service Industry and Information technology began to lobby to have these areas included in the range of apprenticeships on offer in Ireland. In 2015 a survey of twenty-five hotels across Ireland reported that 82% faced long delays of more than six weeks to source suitable staff with the Restaurant Association of Ireland stating that 3,000 vacancies went unfilled in 2014 and that apprenticeship programmes were needed for over 1,000 participants (Fitzmaurice, 2015:29-30). The Education and Training Boards of Ireland called for apprenticeship programmes to expand into areas such as retail, financial services, health care, child care, office administration, ICT, personal services, technical and operative services similar to the Northern European models (ETBI, 2013:6). The majority of the new twenty five apprenticeships developed in 2016 covered these areas (See appendix F). Analysis of job vacancies in 2011 found that the highest number of vacancies were in healthcare services, sales and clerical workers, with these three areas of employment alone accounting for over one half of the 96,000 vacancies advertised that year (Sweeney, 2013:51). The view was that medium to low skills would play an important role in global skills. Cedefop predicted in a 2010 report that in Europe in 2020 the number of those employed in medium to low skills employment will be 65% of the total working population, broken down into 50% with medium skills and 15% with low skills (ETBI, 2013:17, Fitzmaurice, 2015:3).

2.6.5 Apprenticeship comes full circle

The apprenticeship model has faced many crises, both economic and existential, Ryan (2000) outlined the format of apprenticeship in Ireland in 1926 which was reviewed by the Ingram Commission on Technical Education in partnership with the trade unions who stated that the apprenticeship model was not fit for purpose. The Commission examined the Day Apprenticeship School, the only existing one was in Bolton Street in Dublin Institute of Technology which delivered eight trades for girls and boys full time for two years after which, when placed with an employer, they entered the trade as a third year apprentice (Ryan, 2000:278). The same system was proposed in the England in 2001, called a Programme Led Apprenticeship (PLA) and already existed in Denmark and the Netherlands (Fuller & Unwin, 2008:16). Fuller and Unwin averred that the Programme Led Apprenticeship initiative reduced the paradigm of

apprenticeship to a form of work experience and the best apprenticeship model was the '*dual system'* apprenticeship as operated in Germany, Austria, Switzerland and Ireland (Fuller & Unwin, 2008:19). Despite the high regard for the '*dual system'* it was not immune to economic cycles and Koudahl (2010) outlined how it was under pressure with young people not being able to finalise their training as the number of training places available declined with the continued economic crisis and as a result, the '*dual system'* needed revision to avoid a skills crisis (Koudahl, 2010:1901). With the increase in globalization which has been marked by technological innovation, demographic shifts as well as increased competition across borders, new and adaptable skills were required, with the growing belief that a reduction in the gap between vocational and academic education was required to produce multi-skilled, adaptable and creative labour (Mouzakitis, 2010:3915) just as a supply of skilled mechanical apprentices contributed the conditions for a technological advance that allowed for the Industrial Revolution in Britain (Ben Zeev *et al*, 2015:3).

The economics of an apprenticeship model are only sustainable when that model is of a high quality, with high entry requirements and serves an industrial need or has a value to the heritage of a country in order to reduce the training costs and increase the flexibility of the apprentices as they adapt and learn new technologies and better communication skills, this failure to professionalize and recognize the economic case for apprenticeship can condemn it to history.

2.7 Summary of chapter

This chapter has explored some of the recent research in vocational education and apprenticeship under the five headings that emerged. From the origins of the Guilds through to the current examples of apprenticeship in several countries that revealed concentric patterns of reviews which witnessed the pendulum of opinion to swing from core kinetic skills and processes to general education, from specific narrow technical training to general transversal skills.

Apprenticeship Structure

The review of the apprenticeship structure showed how two systems can have similar origins and strong parallels but can be moulded and changed by the winds of culture and economics over time, meaning that apprenticeship was not a fixed or rigid form but has been cut and re-sewn to meet the needs of Government and economic demands which

can change dramatically as demonstrated by global events impacting on the Japanese experience twice.

Cultural values that influenced apprenticeship

The cultural value of apprenticeship was explored by first examining the concept of culture itself and how difficult it was to define in concrete terms any aspect of a culture that was not untainted by prejudiced mental constructs, especially a Western bias on Eastern culture typified by the interpretation of research by Hofstede (1967-1973) which cautioned against using caricatures in cross-cultural studies. It was useful to examine the key elements that were required to establish a credible training system, with the most significant element being quality assurance at every level of an apprenticeship which determined the status and credibility of an apprenticeship system within society.

User Experience

The terms applied to apprenticeship showed a confusion in the principle aims between vocational training and vocational education without a clear overarching primary objective. The various modes of learning also showed how educational theory in vocational subjects had evolved from merely acquisition to a more participatory based community of practice in the West while the Japanese focus in vocational education was the aim of taking external information and internalize it into tacit knowledge which could lead to new knowledge creation. Apprentices have had comparable experiences through the centuries, these standards have varied depending on the cultural context in general terms. However, the experience of apprentices in each country has been shown to be a difficult one unchanged since the time of the guilds. The importance of having an apprentice engaged with the contract of learning can predict the quality of the craftsperson who will be responsible for transferring the skills and professional standards onto the next generation.

International perspectives on apprenticeship and vocational training

The format of apprenticeship in other countries around the world demonstrated that not all apprenticeships were created equal and many were seen as a solution to a particular problem of a certain skills shortage or youth unemployment, this created a negative spiral of new entrant ability and the active avoidance of potential students away from vocational education and toward general education. The rise or decline in the status of

the trade area was also examined with the importance of involving all the stakeholders in a partnership environment being critical to the success of vocational training, but education of the public was also a key element that can determine the long term success of apprenticeship and craft skills. One aspect of vocational training that became apparent was that once an apprenticeship system was lost, it required a huge effort to re-establish it and restore its credibility in society.

Opportunities and challenges for apprenticeship

As apprenticeship was directly linked with industry and the economy generally, the employment prospects of apprentices were directly impacted by the economics of that country. The research revealed how the training of young people was negatively affected by the significant cost of operating a '*dual system'* and how that triggered a review with uncertain outcomes and a general acceptance that as countries develop, they outgrow vocational education in general, unless that vocational system was of the highest quality as in Switzerland, as economies move toward a service society in the eyes of institutions such as the World Bank. Technology has also played its part in changing the nature and dynamic of the traditional Master/apprentice relationship with some positives and negatives generated.

In the next chapter the methodologies used in this thesis will be reviewed and outlined with reference to current thinking in anthropological research. The interview methods and the challenges involved in conducting this research in two countries with very different cultures at opposite ends of the globe will also be outlined as well as the ethical considerations adopted in this thesis.

Chapter 3 Methodology

3.1 Introduction

This chapter describes the tools and protocols used to conduct the research for this study. The process of disaggregating the paradigm of apprenticeship in objective terms and subjective terms is outlined using both qualitative and documentary research data to give a more comprehensive view of apprenticeship in Ireland and Japan. The actual mechanics of attaining the interviews in both countries and the cultural differences experienced will also be outlined with reference to attaining data that can be presented and analysed in a direct comparison of both systems of apprenticeship in a clear narrative framework. Ethical considerations are fundamental to the validity of ethnographic research and the policies employed by the researcher in the collection and management of the data is also outlined with the chapter ending with a summary of the methodologies employed.

3.2 Conceptual framework

The basis for this ethnographic research at a fundamental level was a comparison of two training systems that have evolved utterly isolated from one another in the petri dish of their respective cultures. Deanscombe (2005) defined ethnography as a description of peoples or cultures (Deanscombe, 2005:84). However, culture is the combination of many separate parts contained within the term itself, according to Punch (2005), it was important to understand the context of behaviour within a culture regardless of the specific focus of the research conducted (Punch, 2005:152). The researcher offered a context of the apprenticeship model through the themes of historical evolution, the cultural values that influenced apprenticeship, the user experience, by examining differing models in various countries and investigating the economic factors that directly impacted apprenticeship in the Literature Review, these themes formed the areas of investigation in the semi-structured interviews conducted in Ireland and Japan. The broad definition of Culture offered by Punch (2005) suggested that any examination or study involving humans would fall within the domain of ethnography. Brewer (2000) offered a more focused definition of ethnography as;

> "*The study of people in naturally occurring settings or 'fields' by methods of data collection which capture their social meanings and ordinary activities, involving the researcher participating directly in the setting, if not also the activities, in*

order to collect data in a systematic manner but without meaning being imposed on them externally." (Brewer, 2000:6)

The conceptual paradigm of this research increased the probability that a comparison of two independent systems would be conducted using metrics as similar as possible to collect data objectively in order to highlight any differences or parallels leading to conclusions with the aim of contributing to the epistemology of apprenticeship. To produce a valid grounded theory, careful triangulation of data was paramount, including documentary research and qualitative methodologies, which revealed central phenomena common to both paradigms of training. These parameters were a guide to whom should be identified for semi-structured interviews and revealed the themes that deserved to be investigated in detail though the narrative inquiry of participants engaged in apprenticeship at differing levels and aspects.

3.2.1 Research approach used in this study

The research techniques explored in this chapter emphasised interpretation and flexibility (Liamputtong, 2010:18) to dissect the parts of the apprenticeship paradigm in order to be viewed individually before being reconstituted to give meaning to the whole system, avoiding the risk of missing the interaction of the parts within a system (Cohen *et al*, 2011:29). The researcher argues that this was the strength of the ethnographic approach in that it allowed flexibility in the study of the parts of the system (objective) but also had the rigour to reveal the relationship of the parts to the whole (subjective) in cultural terms which allowed comparisons to be made by those not directly involved in that particular system.

Adopting the Narrative Inquiry approach allowed for a thematic analysis (Creswell, 2013:192) which emerged from the initial Literature Review and informed the themes to be explored in the questionnaire that facilitated the analysis to focus on the '*what'* spoken during data collection.

To achieve a holistic understanding of a subject, Robson (2002) suggested that multidimensional methods of research gave valuable scope for triangulation (Robson, 2002:190), to this end the researcher employed qualitative semi-structured interviews in concert with documentary research to reflect the long traditions and historical practices exercised in several countries to develop a multidimensional understanding of the influences which have shaped apprenticeship in both Ireland and Japan.

3.2.2 Qualitative and documentary research in an ethnographic study

Matsumoto and Jones (2009) cautioned of the greatest danger inherent in qualitative research which was the operationalization of a culture that could support a particular bias, rather than offer a valid contribution to ethnography (Matsumoto & Jones, 2009:324). Cohen *et al* (2011) also highlighted that virtual documents, that is primary documents stored electronically, are valuable to the researcher but they can lose their immediacy of the original document that they represent (Cohen *et al*, 2011:250). Silverman (2009) quoted Denzin and Lincoln (2000) who stated that the benefit of qualitative research was that qualitative researchers believed that they could get closer to the '*actors'* perspective through interview, this closeness to '*the truth'* was not available to researchers who relied on remote, inferential data from which to draw conclusions (Silverman, 2009:342-3). The researcher found that the qualitative data gained in Japan in particular, from the semi-structured interviews revealed rich personal detailed accounts not achieved using documentary research methods alone, especially as documentary research on apprenticeship experiences were difficult to source. Qualitative methods were especially useful when comparing two reflexivity based systems that evolved in very different cultures. Documentary analysis collected by international bodies also offered greater triangulation of information, minimizing the potential axiological constructs that may have been held by the researcher. Elementary positivism elements of analysis would have provided limited new knowledge on their own, but triangulated with the interpretivist method of semi-structured interviews produced a multidimensional analysis of the two apprenticeship systems.

Documentary research can be comprised of primary documents and secondary documents with many comprising of both. Primary documents are produced as direct record of a process or event by a subject involved in that event, while secondary documents are the result of analysis of primary documents to outline or examine an event or process (Cohen *et al*, 2011:249). The documentary research conducted utilized both primary documents to reveal insights and processes by those who were directly involved as well as using secondary documents to develop a broader understanding of the educational, economic and political aims of apprenticeship systems in a number of countries at differing levels of development and cultural diversity. Silverman (2011) argued that that less focus should be placed on the mode of research and more on rigorous and critical standards regardless of the methods employed (Silverman, 2011:24-25).

Qualitative research has been employed by researchers in the study of the human group since its introduction by the Chicago school in the 1920s and 1930s (Denzin *et al*, 2003:1). Qualitative research methods also had its critics within epistemology as well as those who saw the value and uniqueness which qualitative research can bring to a unique research project that is human interaction. Denscombe (2003) stated that qualitative data that produced words or images were the product of a process of interpretation (Denscombe, 2003:268).

3.2.3 The researcher as inside researcher

It was the acceptance or acknowledgement of the role of the self as a factor in interactionist research that can deliver context and a valid grounded theory to information that is found principally from a subject's natural setting, especially when the researcher has experience in that area of study (Denscombe, 2003:268). By using ethnographic qualitative methodologies a '*thick description'* or detailed narrative that progressively explores each stage of the apprenticeship experience can help the understanding and comparison of epistemology and methods of tacit knowledge transference used in training and education that may not be clear to those not directly involved. This may raise concerns of reliability in the research conducted, to this end, three principles as described by Denscombe (2003) were employed by the researcher when making initial requests for interviews that outlined to the potential participants;

- *"The aims of the research and its' basic premises;*
- *How the research was undertaken*
- *The reasoning behind key decisions made (e.g. in relation to sampling)"* (Denscombe, 2003:274).

Bogdan and Taylor (1975) argued that the methods by which we study people affected how we viewed them. They added that, when people are reduced to statistical aggregates we lose sight of the subjective nature of human behaviour. Qualitative methods, allowed us to know people personally and to see them as they develop their own definitions of the world. We experience what they experience in their daily struggles with their society (Bogdan *et al,* 1975:37). There were concerns about the interpretation of qualitative data as Miles and Huberman (1994) asked;

> *"But the analyst faced with a bank of qualitative data has very few guidelines for protection against self-delusion, let alone the presentation of unreliable or invalid conclusions to scientific or policy-making audiences. How can we be sure that an "earthy," "undeniable," "serendipitous" finding is not, in fact, wrong?*" (Miles & Hubermann, 1994:2).

Bickman and Rog (1998) outlined Maxwell's position that there was no typology into which qualitative research could be put into, but that all models were '*one-directional sequences of steps*' which formed the logical order for conducting the different parts of a study (Bickman & Rog, 1998:69). The subjective nature of qualitative research was an issue that required careful cognisance as Bryman (2008) outlined, on how researcher's findings relied too much on the researcher's unsystematic views about what was important as well as being difficult to replicate because of the unstructured nature of interviews and the fact that interviews can be reliant on the ingenuity of the researcher (Bryman, 2008:391). To minimise any particular unconscious leaning of the researcher, a broad and comprehensive documentary analysis of the apprenticeship model as operated in many countries over centuries was conducted, revealing both positive and negative experiences. Kvale and Brinkmann (2009) highlighted the importance of the moral integrity of the interviewer, which they stated was the decisive factor in the quality of the research conducted (Kvale & Brinkmann, 2009:74). Hitchcock and Hughes (1999) explained how the reliability of structured interviews can be distorted, as the actual process of coding the raw material of qualitative data distorted what that phenomenology actually meant to the person who experienced it (Hitchcock & Hughes, 1999:159).

Hitchcock and Hughes (1999) expanded the point by saying that surveys and structured interviews were not commensurate with the nature of the social world, these research instruments were not sensitive or flexible enough for the problems of recording experiences (Hitchcock & Hughes, 1999:159). It was this interpretivist flexibility May (2001) posited, that gave qualitative research its primary advantage enabling the researcher to consider how meaning was developed and employed (May, 2001:193) which can add colour to the monochrome numerical or documentary data. Bryman (2008) argued that there was no necessary reason why research using qualitative precepts could not be recruited to investigate a specific problem in research (Bryman, 2008:393). One rebuttal to the charge that the creditability of qualitative research suffered from a lack of replicability came from Schofield (1993) who opined that the

goal of qualitative research was not to produce a set of results that could be replicated, it was to contribute a coherent and illuminating perspective of a context that was consistent with a detailed study of the situation (Schofield, 1993:202).

3.2.4 Cross-cultural studies and comparative research

Cross-cultural studies have considerable appeal but Bryman (2008) warned that they increased the cultural, ethical considerations and barriers upon the researcher (Bryman, 2008:58, 299). Kvale (2007) cautioned on the difficulty in cross-cultural studies of being aware of the multitude of cultural factors that affect the relationship between the interviewer and the interviewee (Kvale, 2007:68, Bryman, 2008:59). Kvale and Brinkmann (2009) recommended that a native translator be used, to offer guidance of cultural norms to the interviewer who may not be aware of tiny but significant gestures or language meanings (Kvale & Brinkmann, 2009:144). This was the approach adopted by the researcher who employed a translator who was a Japanese native and a full time translator for the interviews conducted in Japan. Beauford *et al* (2009) stated that while cross-cultural research was needed to meet the growing thirst for global exchange, many research methods were designed in English speaking countries but cultural sensitivity, deeper understanding and respect were required if valid translations of cross-cultural research was to be achieved (Beauford *et al*, 2009:77). Being cross-culturally literate increased the chances of ethically appropriate methods (Marshall & Batten, 2003:140). As advised by Kvale (2007) a researcher should minimise any potential offence through cultural misunderstandings (Kvale, 2007:68) and so the researcher studied Japanese culture and learned that in Japanese culture, it was considered aggressive to maintain eye contact, in the Western culture this can interpreted as sincere or showing a genuine interest in the person who is speaking. Other cultural differences discovered by the researcher were that in Japan, shoes must be removed in the hallway of private houses, so footwear with laces were an inconvenience, additionally, if a Japanese person leaves their front door open by 50-75 mm it was a sign that you were expected and to enter without the need to wait for your host. There was also a rigorous ceremony around the exchange of business cards which must be exchanged at the beginning of the meeting, using both hands to offer your business card and to receive the other persons card, as giving a Japanese person your business card or gift with one hand suggested a lack of care or appeared too casual. Punctuality was very important to the Japanese, which can add a level of stress when one is in a strange city, using taxis or public transport to travel between interviews in differing locations during the day. The Japanese tradition

of repaying your debt to someone known as '*Houon*' (Karelova, 2009:136) or shortened to '*on*' (Alston & Takei, 2005:8) created a labyrinth of protocols. If a Japanese person accommodated you, it was expected to offer them a small gift '*to repay your debt'*, however this created another level of obligation, where they were in debt to you for the small gift and were obligated to give you a gift of similar size or value in return. This reciprocal cultural custom can ripple outwards, as the person who first arranged the interviews was also under an obligation of gratitude to each interviewee, to this end, the Deputy Director of the Crafts Museum who arranged the interviews of Japanese craftspeople asked the researcher to write a letter of gratitude at the conclusion of the week to each participant for their kind cooperation and generosity in assisting with the research, this was duly done, translated into Japanese and sent out to each participant by the Deputy Director. While the researcher was aware of the protocols around, eye contact, punctuality, receiving business cards and gifts, customs such as removing shoes and knowing when to enter a house without being received directly by the host were a revelation but did not impact on interviews in any meaningful way. Choi *et al* (2012) stated that cross-cultural, cross-language research was typically more expensive and more time consuming than non-cross-cultural research and an additional area that required careful consideration was the relationship between the researcher and the translator with regard to the research conducted (Choi *et al*, 2012:653). While every reasonable effort was made to produce a questionnaire that was clear and consistent in two languages, using two native Japanese speakers in Ireland, and the employment of a professional Japanese-English translator in Japan, who was a former English teacher, limits to resources meant that some cultural misunderstandings may have occurred but the consistency in the broader themes that relate to the findings in the Literature Review which emerged from the interviews in Japan demonstrated a value to ethnographic research.

Comparative research according to Perry (2011) was the very definition of social research while recognising that others have rejected it as impractical, unfeasible or undesirable (Perry, 2011:247). McNeill and Chapman (2005) quoted Durkheim (1895) who said that;

> "*Comparative sociology is not a branch of sociology. It is sociology itself."*
> (McNeill & Chapman, 2005:85)

Bloor (2004) supported this statement by positing that any ethnography was essentially comparative in approach (Bloor, 2004:313) as comparative studies involved an understanding and explanation of the similarities between cultures to fully understand the underlying variations of an individual culture using more or less identical methods (Bryman, 2008:58, Perry, 2011:243). Bryman (2008) argued that the multiple-case study approach potentially focused the researcher more on methods employed than the specific context studied (Bryman, 2008:61). Vidich and Lyman (1998) in their outline of the development of the '*comparative method'* and the anthropology of primitivism believed that comparative research was fundamentally flawed due to the Eurocentric bias and its methodological inadequacies (Vidich & Lyman, 1998:72). Flick (2014) recommended that it was essential to clarify the level of comparison to be made in the research; between individuals, systems or phenomena, equally important was that several cases were included in the study for comparison (Flick, 2014:115). Perry (2011) highlighted the difference of focus in ethnographic research of intra-societal comparison within a system and inter-societal comparisons between two separate systems (Perry, 2011:247). Bloor (2004) noted that comparison can occur within a single study when writing the ethnography as the writer generally weighed numerous and varying accounts to illustrate or develop the argument in the text (Bloor, 2004:313).

A comparison between the Irish and Japanese apprenticeship systems may be categorized as '*Outlier Sampling'* as described by Patton (2015), where an extreme case or example can offer a more concentrated version of larger trends (Patton, 2015:277). Perry (2011) cautioned against the practice of bolting on our own preconceptions or prejudices on the practices of societies, as that did little to advance understanding in research (Perry, 2011:248). McNeill and Chapman (2005) concluded that the comparative method was fundamental to any sociological research that went beyond mere description as comparisons lead to causal explanations of instances (McNeill & Chapman, 2005:88).

3.2.5 Narrative inquiry

Connelly and Clandinin (1990) stated that narrative inquiry had a long intellectual history both in and out of education from principles developed by Dewey in 1938 (Connelly & Clandinin, 1990:2) they defined narrative inquiry as;

> "*Narrative inquiry in the social sciences is a form of empirical narrative in which empirical data is central to the work.*" (Connelly & Clandinin, 1990:5)

The semi-structured questions used in this research included some short questions on key details such as the amount of time given by an employer to training and more open questions asking the reasons behind their choice of craft to offer both empirical data and qualitative responses to fully develop the narrative of their career experiences. However Wells (2011) argued that there were many definitions of narrative inquiry as variants were adopted depending on the area of study (Wells, 2011:5). The relationship between the knower and the known was, according to Maykut and Morehouse (2003) interdependent, the knower cannot be distinct from what it was to be known and that interconnectedness and interaction between the knower and known was framed within a narrative, our stories have given meaning to shared experiences (Maykut & Morehouse, 2003:37). Cohen *et al* (2011) stated that stories personalize generalisations and were evidence based, they revealed the chronology of events and have enabled the researcher to infer causality (Cohen *et al*, 2011:552) or as Connelly and Clandinin (1990) explained; the phenomenon was called the '*story'* while the inquiry was the '*narrative'* (Connelly & Clandinin, 1990:2). The semi-structured questions used in this research were structured in a narrative arc, inviting the participant to recall the entire journey of their learning experience from the initial choice of becoming a craftsperson, through their training experience and culminating in their reflections of how their experience is viewed by the next generation. By using the narrative approach, the causality of their attitude toward apprenticeship was developed and gave context to why the interviewees held a positive or negative view of apprenticeship, a context that would not have been available through multiple choice questions. While a direct narrative can animate ethnological research, there was a drawback;

> *"Narratives are a foil to the supremacy of coding and coding-derived analysis."* (Cohen *et al*, 2011:553)

Cohen *et al* (2011) further advised that since narratives or biographies cannot record all the details of events, a selective focus was required, based on the criteria that were relevant to the purpose of the research and interpret the text for the meanings contained within, to produce valid working hypotheses. This selective focus was delivered through the framework of the five themes investigated in the Literature Review, which acted as reference points in both Ireland and Japan. Through reliability of cross checking these

hypotheses with other relevant data and seeing the text as a whole as opposed to discrete units (Cohen *et al*, 2011:553) because;

> *"Narratives are powerful, human and integrated; truly qualitative."* (Cohen *et al*, 2011:554)

The researcher used the narrative construct to guide the research which mirrored the progression pathway of the individual through each chapter of the apprenticeship paradigm, from the introduction of the structures of the apprenticeship model, to the cultural influences that directed and guided the individual toward the craft route and then examining the experience of those who had directly experienced an apprenticeship and investigating how that experience compared to other apprenticeship models, concluding the journey of apprenticeship with a look into the potential future of a training method that had spanned centuries. This method worked especially well for the Japanese interviewees who typically offered short answers to questions recalled in great detail the experience they endured which was comparable to apprenticeships described in the era of the Guilds as well as explaining how the modern generation of apprentices have demonstrated a change of attitude toward the difficult of self-transcendence. This examination of the educational model known as an apprenticeship used direct quotes of participants to highlight key points in the five themes investigated to demonstrate the two experiences of Japanese and Irish crafts people using the same basic reflexive training paradigm as well as using qualitative analytical software QDA Miner to analyse transcripts to reveal some minor additional dimensional quantitative data on the number of years served and the percentage of interviewees who would recommend an apprenticeship to the next generation.

3.3 The interviews

The interviews conducted in Ireland and in Japan were semi-structured in nature with the additional complication of two languages requiring translators, three in total, to be employed to check the accuracy of the questions and responses. The difficulty in counter-translations to verify the exact meaning of interviews in another language proved a real challenge. The specialized nature of the Japanese craft traditions which was divorced from heavy industry as well as the broad range of very narrow craft areas did not have a direct equivalent with the Irish craft areas which had a narrow number of

trades, twenty-seven compared to one hundred and twenty-five trades in Japan, with a sub-division of these trades into specialist areas, for example Ireland had a formal recognized trade of Carpentry & Joinery which included a broad range of skills from machine and tool use, roofing geometry and construction of all kinds of roof constructions, church furniture, windows, stairs, doors, louvres etc. while in Japan the tradition of specialization created three sectors of craft areas, with woodworking in two of the three, while one of the participants interviewed stated that his trade was '*House Carpenter'* which is another tradition of specialization in Japan where there exist, House Carpenters, Temple carpenters and Teahouse carpenters (Brown, 1989:24). The focus of this research was a comparison of two training systems rather than a comparison of two craft areas and in this respect the choice of participants was secondary to the fact that they had completed a formally recognised craft apprenticeship. The additional challenge of finding Japanese crafts people to engage with a researcher from another country further limited the applicants potentially available to conduct interviews with, it was almost impossible to find Japanese respondents willing to engage with the research and after two years of attempting to make contact with potential participants was progress made in securing interviewees in Japan.

3.3.1 Semi-structured interviews

Flick (2009) stated that open interviews and in particular semi-structured interviews were more dominant in the German speaking areas but were attracting increasing attention in the English speaking world (Flick, 2009:150). Hitchcock and Hughes (1999) considered the semi-structured interview to be the type most favoured by educational researchers as it allowed depth to be achieved by providing the opportunity on the part of the researcher to probe and expand the respondents in seeking comparable experiences distilled into quantifiable formats that offered concurrent validity of responses from individuals who may have vastly different experiences in a system designed to produce the same outcome, even though concepts like '*reliable'* and especially '*validity'* can be difficult to quantify in definitive terms (Hitchcock & Hughes, 1999:157). The range of interview methodologies most suitable to this research was reduced to three options; open-ended questions, semi-structured questions and thirdly, short answer questions. Less structured approaches can produce highly sensitive and specific information relating to the individual according to Cohen *et al* (2011;235)

which was less relevant to this research being a comparison of two apprenticeship systems, while at the other end of the spectrum, short answer questions did not offer the opportunity for the interaction of the parts to be given expression as well as requiring more respondents than would be realistically possible to take part for the research to be valid. For these reasons a mix of both question types were combined within a semi-structured interview format. The semi-structured design had the flexibility to allow for avenues to be explored, expansion on various points of interest and digressions into sub-themes that may prove relevant (Cohen *et al*, 2011:236) while still allowing for some short answer questions to be embedded within the questionnaire. The main areas investigated were divided into the five themes outlined in the Literature Review with additional probing questions to act as signposts on detailed areas such as; '*Were you required to do state exams?*' to allow for a direct comparison of key areas common to both apprenticeship models. A guiding principle as set out by Sapsford and Jupp (1996) offered advice relating to the information collected, in that interpretations should be derived from measurement and characteristics produced by the author which should be the exclusive source of the conclusions (Sapsford & Jupp, 1996:1).
To achieve this, careful consideration was given to potential problems, which according to Cohen *et al* (2011) were inherent in the interview process:

1. *"There are many factors that inevitably differ from one interview to another, such as mutual trust, social distance and the interviewer's control.*
2. *The respondent may well feel uneasy and adopt avoidance tactics if the questioning is too deep.*
3. *Both the interviewer and respondent are bound to hold back part of what is in their power to state.*
4. *Many of the meanings which are clear to one will be relatively opaque to the other, even when the intention is genuine communication.*
5. *It is impossible, just as in everyday life, to bring every aspect of the encounter within rational control."* (Cohen *et al*, 2011:410)

While it may be difficult to avoid any or all of these issues completely, the fact that this was research, primarily of a system with people in it rather than a study of people within a system should have reduced the concerns respondents may have had, allowing them to expand more freely on the apprenticeship model and their experience of it. Piloting

questions, a clear ethics policy and careful explanation of the purpose of the research also helped to achieve validity in the research (Bell, 2014:178) but it did not identify all of the problems that were encountered by the researcher, especially in Japan.

The use of semi-structured interviews minimized variations as participants followed a fixed schedule of questions delivered in a standardized format although some open-ended questions were used to encourage participants to share more personal experiences or opinions (Punch, 2005:170) which revealed some unexpected sub-themes in the experience of an apprentice. The purpose of each question was:

1. To outline the structure of the apprenticeship framework in each country to examine what, if any quality control procedures existed and to see if there was a deliberate development pathway for the apprentice through the apprenticeship model.
2. To determine the factors in how a young person chose the career path of apprenticeship and investigate if that participant felt apprenticeship was a career valued by society.
3. To examine the actual experience of an apprentice as they progressed through the training process and how much time an employer gave to the key aim in apprenticeship of technical and kinetic knowledge transfer.
4. To explore the awareness and possible experience of crafts persons in other types of apprenticeships or experience in the craft area abroad and how that experience if any could be used to improve the domestic apprenticeship model.
5. To review the potential career pathways available to qualified crafts persons and to get a sense of whether the training the participant received was relevant with the benefit of experience in the workplace.

These questions were formed from a logical examination of the paradigm of apprenticeship that were common to both Ireland and Japan through an initial literature review as well as from the experience of the researcher in the area of apprenticeship participation and training.

Denscombe (2003) highlighted the issue of how an interviewee may feel defensive or in the case of this research may want to project a particular view of their methods or institution for reasons of professional or national pride but Denscombe (2003) admitted there was little a researcher can do about this in a small scale project (Denscombe, 2003:170). Bickman and Rob (1998) pointed out that in natural settings, an observer was generally much less of an influence on participants' behaviour than was

the setting itself (Bickman & Rob, 1998:92), as all of the interviews were conducted in the participants own workplace or in a neutral venue, the potential influence of the setting was minimized as a negative factor.

The selection of interviewees focused on key participants at varying levels within the apprenticeship system to offer a maximum variation sample within the constraints of the craft area as Denscombe (2003) opined that the choosing of key players was required if the aim was to delve into the specifics of an area (Denscombe, 2003:172).

3.3.2 Selection and piloting of research questions

The pilot research interviews were conducted in Ireland and involved three participants; an educationalist involved in apprenticeship, a Japanese citizen who was a designer in Japan and an apprentice undergoing training, all three were based in Ireland. No issues were revealed with the nature and structure of the questions, with no changes to the content or structure required based on the feedback of the pilot participants, however the actual experience of delivering the same questions in a different country, culture and language revealed issues that required minor adjustment to the questionnaire in the field. This occurred despite the researcher using a native Japanese speaker to translate the questionnaire from English into Japanese and then having the Japanese version reviewed by another Japanese citizen for clarity and to avoid cross-cultural difficulties. Choi *et al* (2012) highlighted the difficulty in cross-cultural translations of interviews where direct equivalence of meaning may not exist. In the view of Choi (2012) this may result in fully developed and accurate transcripts not being achievable (Choi *et al*, 2012:656).

There were twenty-six interviewees in total, fifteen in Ireland and eleven in Japan. The candidates were selected to reflect, as much as possible, the various levels of an apprenticeship and the differing types of roles and crafts that engaged with the apprenticeship model. To identify the interviewees in Ireland, the researcher sent a request to a number of third level Institutes of Technology inviting volunteers to participate in the research which yielded a single response. The researcher asked the Head of Faculty to send the same request to his counterparts in the third level Institutes of Technology and seven responses from Lecturers were received with an additional offer of apprentices who were attending the Institutes at the time to participate. The Lecturers were based around Ireland and did not represent any one geographic area, although the trade of Carpentry and Joinery was most heavily represented. The

participants from industry were selected on recommendations from some Lecturing staff members who thought that they would have a particularly useful insight or experience that would be of value to the research, despite the fact that two interviewees did not have a craft qualification, they were in positions of authority that interacted directly with crafts people.

The selection of the Japanese crafts people was determined by the Deputy Director of the Crafts Museum in Kanazawa, the researcher met with no success in trying numerous avenues and attempts to contact academic institutions or crafts persons in Japan while based in Ireland. The assistance of the Deputy Director was critical to the research and each crafts person was chosen to offer the best possible sample variance reflecting, crafts, experience and the most challenging of all, gender. A number of Japanese crafts people were part of trade organizations or unions that offered an additional perspective on the craft area over generations in some cases, see appendix C – Participant Information for more details on each interviewee.

Table 3.1: Matrix of Interview Participants

Matrix of Interview Participants			
No	**Role**	**Craft**	**Country**
1	Master	Urushi-ware (makie artisan)	Japan
2	Master	Kaga yuzen painter/dyer	Japan
3	Master	Japanese Bamboo Fishing Rod	Japan
4	Apprentice	Japanese Bamboo Fishing Rod	Japan
5	Master	Urushi-ware (makie artisan)	Japan
6	Master	Urushi-ware (makie artisan)	Japan
7	Master (Female)	Urushi-ware (wood turner)	Japan
8	Master	Kutani porcelain 'akae'	Japan
9	Master	Hyogu (paper mounting)	Japan
10	Master	House Carpenter	Japan

11	Master	Urushi-ware (artisan for undercoating)	Japan
12	Educator/Craftsperson	Carpentry & Joinery	Ireland
13	Craftsperson	Carpentry & Joinery	Ireland
14	Employer/Craftsperson	Carpentry & Joinery	Ireland
15	Educator/Craftsperson	Plastering	Ireland
16	Apprentice	Carpentry & Joinery	Ireland
17	Craftsperson	Carpentry & Joinery	Ireland
18	Craftsperson	Carpentry & Joinery	Ireland
19	Apprentice	Mechanic	Ireland
20	Educator/Craftsperson	Mechanic	Ireland
21	Educator/Craftsperson	Carpentry & Joinery	Ireland
22	Industry Body Representative	Construction	Ireland
23	Employer	Construction	Ireland
24	Educator/Craftsperson	Carpentry & Joinery	Ireland
25	Educator/Craftsperson	Carpentry & Joinery	Ireland
26	Employer/Craftsperson	Carpentry & Joinery	Ireland

3.3.2 Irish interviews

The fifteen interviews were conducted at each level of the apprentice structure in Ireland, an apprentice, an educator and an industry representative expert, craftsperson or employer. The questions were well answered generally; however the respondents with the least experience, i.e. the apprentice, gave the briefest of answers to the questions while those closest to retirement spoke the most voluminously about all aspects of the apprenticeship process. The results showed that the follow up probing questions worked well when needed and that an unhurried pace worked best, allowing the respondent to think about each question and reflect on his experience and often it allowed the interviewee to reaffirm an opinion or statement. Each interview was transcribed prior to analysis along the five themes set out in the Literature Review to allow for a more direct

comparison with existing research generally as well as offering a direct comparison with the Japanese respondents. Identifying individuals to participate in the research was a challenge, particularly with industry as they could not see the value of the research to them. Educational institutes and industry bodies were more helpful and arranged for the interview of apprentices who were attending the institutes at the time.

3.3.3 Japanese interviews

Candidates were selected from a single Prefecture of Japan, Ishikawa, which geographically was similar in size to the island of Ireland. Eleven crafts people were selected through a connection in Ishikawa, the Deputy Director of The Museum of Traditional Arts and Crafts in Kanazawa City, where many traditional crafts of Japan were displayed. The difficulty in finding someone in Japan to assist and arrange interviews with craftspeople in Japan was extremely challenging and involved almost two years of non-answered emails and unproductive visits to Embassies. The Japanese interviews which were a key element of this thesis was possible only due to the charity shown to the researcher by the Deputy Director of the Museum who contacted each interviewee, arranged an interview schedule over seven days and sent a copy of the purpose of the research, background of the researcher and statement of confidentiality as well as the interview questions, all of which had been translated into Japanese to each participant prior to visiting Japan. Without this assistance from the Deputy Director, the research was in danger of being abandoned in favour of a more accessible cultural exemplar. The interviewees were mostly comprised of Master craftsmen, with only one apprentice and one craft student graduate interviewed. Some of the Masters came from different disciplines originally, before deciding to enter into their current craft area, but all studied under a Master. Following the advice outlined by Beaford *et al*, (2009) who recommended that in a questionnaire, words that had no direct equivalent should be avoided, clear purpose and content meaning should be apparent or explained with additional context if required and simple sentences in the active voice were the most easily translated (Beauford *et al*, 2009:78). The interview questions for Japan were first written in English and then sent to a translator who was a native Japanese person living in Ireland, who translated the questionnaire into Japanese. The questionnaire was then given to another Japanese native to double check that the translation was consistent, clear in purpose, with obvious context and matched the original English text. No obvious adjustment was apparent to reflect the different culture in the opinion of each translator, however the actual interaction with participants in Japan revealed some

significant cultural adjustments that were required, a regular challenge in cross-cultural research (Beauford *et al*, 2009:77). Simple questions like '*What position do you currently hold in your organization and what role does this involve'* contained a key word '*organization'* which in Japan meant a very specific membership of an organization such as a Trade Union group or a Craft Union or Guild, whereas in Ireland this would be any kind of organization such as a college, company etc. This required a more specific question such as '*How long have you been a Master?*' and '*What is your specific craft?*' The Japanese language is very precise, minimalist and context specific and long questions do not exist and the interviews needed to reflect that. Some questions such as '*Were you required to do state exams?*' received a quizzical look from respondents because they had already stated that they had studied under the Master and under the traditional Japanese system if the Master did not think you were good enough then you would be an apprentice until you were good enough and so the question seemed redundant and ridiculous to the Master crafts people interviewed despite the existence of state craft exams. Another cultural difference was revealed when asking Japanese crafts people about their experience with other apprenticeship systems in other countries. Japan was still relatively isolated compared to Ireland, especially for crafts people who work in rural areas of Japan and had little experience of apprenticeship outside their Prefecture, never mind another country, so asking about other countries caused some slight embarrassment as the respondent did not want to appear unknowledgeable and '*lose face'*, they spoke instead about when their work was exhibited abroad in New York, Berlin or London and so the question had to be rephrased from '*Have you any experience of apprenticeship in other countries?*' to *'How do you think the Japanese apprenticeship rates internationally?'.*

Prior to selecting an interview translator, the translation company was given information on the type of content to be covered and the purpose of the visit to Japan, to allow them find the most suitable staff member to be selected as a translator for the research. To ensure clarity of purpose, the needs of the research were outlined to the translation company by a native Japanese speaker living in Ireland who was very familiar with the research and had assisted in the back translation of the questionnaire. The interviews were recorded digitally using a Dictaphone, recording a translator who translated the verbal English research questions into Japanese and then translated the Japanese response back into English. Choi *et al* (2012) stated that a translator who fully understands the culture and language of the participant reduced the potential threats to the validity of the data (Choi *et al*, 2012:654). Sometimes however, while the translator

was relaying the answer in English, the interviewee would start talking before the translator had finished or the translator would try and translate as the respondent was giving the full answer of a question making it difficult to hear and transcribe parts of some interviews.

A final cultural adjustment was the interview settings in Japan, often done in traditional Japanese style houses with low tables and no chairs, which caused excruciating pain to a Westerner unaccustomed to kneeling for an hour at a time. It proved difficult to maintain concentration on the interview while enduring burning pain all the while smiling politely. The interviews were recorded with the informed consent of the participant (Bell, 2014:48) and later transcribed for analysis and referencing. Because of the language barrier and the opportunity for misinterpretation, extra care was taken in translating questions into Japanese and similarly translating the Japanese answers into English, while the use of multiple translators to convert a full interview from English to Japanese and another translator to convert an interview back in to English to verify the accuracy of the sentiment expressed proved to be unfeasible, every effort to minimise the risk of misrepresentation of respondents views were taken by using only quotes that were unambiguous and clear in intent.

3.4 Data analysis

The codifying of interviews which reflected the themes revealed through the Literature Review which subsequently informed the focus of the questions asked and created a clear distinction of the interviews into segments of the areas to be questioned. This allowed for a more efficient analysis of the themes, using direct quotes and using qualitative software to analyse the frequency of keywords which offered a more multi-dimensional analysis of the data recorded. Matsumoto and Jones (2009) highlighted a potential flaw in the data analysis within a cross-cultural study, which was an unconscious and automatic value orientation applied by the researcher based on stereotypes (Matsumoto & Jones, 2009:333). Creswell (2013) outlined the central steps of coding data that formed the core elements of qualitative data, which required the researcher to distil the data into meaningful segments, labelling these segments and then reconstruct these segments into broader categories or themes and making comparisons (Creswell, 2013:180).

Creswell (2007) described the process of data analysis in terms of a spiral that began with the collection of the data and through a refining process, led to conclusions (Creswell, 2007:151). Data analysis of the transcribed interviews were conducted using content analysis to identify conditions, actions, phenomena and consequences in relation to the experience of the Master crafts people in their training of their respective crafts (Choi *et al*, 2012:656).

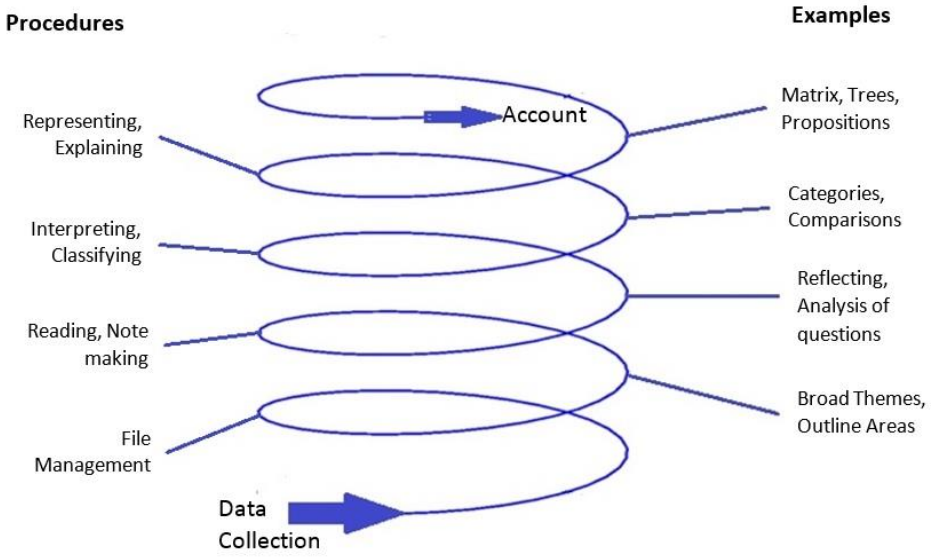

Figure 3.2 Analysis of Data

Creswell (2013) advised against the use of code counting within the written body of the research as the counting of codes conveyed a quantitative approach contrary to qualitative research and it may also suggest that all codes are equal in emphasis at the cost of more balanced findings (Creswell, 2013:185). The process of data analysis followed the spiral of analysis outlined by Creswell (2007) as follows;

Stage 1. Code the data into meaningful segments

Stage 2. Categorize the data into broad areas

Stage 3. Group categories together to produce themes by exploring the complex interrelationships of the content drawn out from each category.

Stage 4. Select exemplars to illustrate participants' experiences of apprenticeship

3.5 Ethical considerations

With any ethnographic research, the ethical concerns of those involved were paramount, especially when it came to anonymity and confidentiality, even though as Bryman (2008) pointed out, discussions about ethics were often frustrating for four reasons;

1. Authors differed widely over what was and what was not ethically acceptable.
2. The same issues that were discussed in the 1960's were constantly recirculated.
3. The same few cases (Religious cult, '*Tea room'* sex, and police force) of extreme ethics transgressions were used as a lesson of what not to do.
4. These cases were in one specific area of ethnographic research where covert methods were used. (Bryman, 2008:113-4)

Hitchcock and Hughes (1995) outlined two basic positions being rejected by qualitative researchers; (a) that research was neutral and (b) that anything was justifiable in ethnographic research (Hitchcock & Hughes, 1995:147). This was compounded by cross-cultural ethical considerations and the researcher was aware that Western cultural norms were not the norm in Japanese culture, which was respected by the researcher as suggested by Marshall *et al* (Marshall & Batten, 2003:142). An example of this occurred in Japan during the interview process when a participant was asked about an area they were not knowledgeable, the participant deflected the question, this area was not further pursued to avoid the participant '*losing face'* over the need to extract information or record a definitive negative answer.

Miles and Huberman (1994) outlined five different ethical approaches covering different areas and levels of qualitative research, one of the more understated theories was termed '*Ecological'* and they quoted Flinders who suggested that researchers were obligated to be sensitive to the environment they were studying and interacting with, consideration must be given in acting responsibly with the knowledge gained when making the findings public (Miles & Huberman, 1994:289). The Japanese have many levels of politeness and a cultural tradition of independence which required the researcher to be cognisant of the ecological chain reactions that meanings within interviews may produce adding an extra layer of ethical consideration across language, culture, and interview reliability. Before any interviews were conducted, approval of the proposed questions to be used were submitted to the Research Ethics Committee of John Moore's University, Liverpool and were duly approved.

Ryen (2011) categorised ethics into four areas; Codes, Consent, Confidentially and Trust, stating clearly that consent referred to '*informed consent'* and that the

interview participant had the right to (a) know that they were being researched, (b) be informed about the nature of the research and (c) withdraw at any time (Ryen, 2011:418). This was done by sending in advance, to each participant, the background to the study, the background and motivation of the researcher as well as the questionnaire to allow each participant the choice of partaking with fully informed consent. A few potential participants in Ireland declined to be interviewed and this was accepted and respected by the researcher.

Every undertaking was made to inform the respondents, which responses would be respected and that names would not be revealed to anyone and no names would be used in the finished work. What was more, respondents would only be referred to in generic terms such as '*lecturer'* or '*apprentice'* in order to disguise who that person may be. The possible benefits of the findings of the research was explained to each respondent verbally and in writing and the option to withdraw from the interview at all times was highlighted and always available to the interviewee. All of these procedures were clearly explained before asking for each participant if they were happy to proceed with the interview. The issue of interviewing fellow lecturers presented a further complication in that what was said in an interview may have implications in the future if one party was promoted to a senior position, to minimise this risk, interviews were sought by the researcher of lecturers from other colleges and/or those close to retirement. Cohen *et al* (2011) offered a useful set of principles for a school based research project:

1. *"All participants must be given the chance to remain anonymous.*
2. *All data must be given strict confidentiality.*
3. *Interviewees should have the chance to verify statements at the stage of drafting the report (respondent validation).*
4. *Participants should be given a copy of the final report.*
5. *Permission for publication must be gained from the participants.*
6. *If possible, the research report should be of benefit to the school and participants."* (Cohen *et al*, 2011:83)

The anonymity of participants were preserved by recording only their job titles and the digital files were stored on the researcher's work computer and backed up on the network drive both of which were not accessible outside of the college campus. Although the question of anonymity was not uniformly accepted, Walker (1993)

proposed the view that anonymity could never be total and that it was all too easily used as a protective device to allow the researcher to protect themselves from any backlash from those involved in the study (Walker, 1993:24). Any system inquiry must be looked at critically and with a fair degree of caution (Hitchcock & Hughes, 1999:5). Flick (2009) highlighted several ethical codes by different associations and stated that all of these codes of ethics required informed voluntary consent and that the research should avoid harming the participants, a protocol known as '*non-maleficence'*, including not deceiving or invading the subjects privacy (Flick, 2009:37). Marshall and Batten (2003) stated that informed consent had an additional level of consideration when dealing with a differing culture, requiring constant re-examination and redefinition (Marshall & Batten, 2003:143). All participants in Japan were sent an outline of the research project two months in advance along with a detailed account of how the information would be managed and used, the background of the researcher and a copy of the questionnaire before consent was given to participate in the interview process, all of which was translated into Japanese and checked with a second native Japanese speaker to verify the content, with consent sought again directly before the interview began to ensure that the research was valid (Marshall & Batten, 2003:143).

3.5.1 Provision for trustworthiness

Creswell (2013) referred to the term '*trustworthiness'* and '*authenticity'* as historical preferring the term *'validation'* to emphasize a process (Creswell, 2013:250), however Maykut and Morehouse (1994) stated that trustworthiness was a term used to describe the believability of the researchers' findings which were generated from the methods, checks and balances used (Maykut & Morehouse; 1994:64). Connelly and Clandidin (1990) wrote that for anthropology, reliability and validity were overrated and the attributes of '*apparency'* and '*verisimilitude'* would be better employed (Connelly & Clandidin, 1990:7). Moss (2004) reflected that trustworthiness as a science in qualitative research had been re-framed by Lincoln and Guba (1985) within the four corners of credibility (which was parallel to internal validity), transferability (parallel to external validity), dependability (parallel to reliability), and confirmability (parallel to objectivity) (Moss, 2004:362, Patton, 2015:685, Erlandson *et al*, 1993:28-32). Patton (2015) stated that the credibility of research findings were dependant on careful and deliberate attention to ensuring trustworthiness, established through prolonged engagement with your subjects and persistent observation, all the while being alert to your own biases and reflexivity to produce a more trustworthy interpretation of a given

subject (Patton, 2015:685). Robson (2002) stated that two fundamental issues of trustworthiness were validity and generalizability as pure intentions did not guarantee trustworthy findings (Robson, 2002:100). Patton (2015) also highlighted the importance of not stating the truth, rather the intent of researchers should be on honesty as the potential interpretations of '*the truth'* was so varied that it would only demonstrate the evasiveness of any one '*truth'* (Patton, 2015:727-8). Ezzy (2002) offered the opinion that it was not a choice of absolute truth or no truth at all, simply truth was always historical, cultural and socially created, between the extremities of truth was the lived reality of half worked-through truths that shape our lives (Ezzy, 2002:2).

3.5.2 Validity

To ensure the research undertaken followed a path of legitimacy, the rigours of validity, reliability and generalizability have been employed to the extent possible. Bryman (2008) defined validity thusly;

> "*Validity refers to the issue of whether an indicator (or set of indicators) that is devised to gauge a concept really measures that concept."* (Bryman, 2008:151)

Cohen *et al* (2011) highlighted the fact that 100% validity was impossible in quantitative terms but validity in qualitative research can be achieved through honesty, richness, depth as well as the objectivity of the researcher involved, cross-checked by triangulation of information (Cohen *et al*, 2011:179). Maxwell (1998) outlined two broad threats to validity in qualitative research: researcher bias and reactivity. Reactivity was defined by Maxell (1998) as;

> "*… the effect of the researcher on the setting or individuals studied.*" (Maxwell, 1998:91)

Miles and Huberman (1994) offered a systematic approach to ensuring validity using what they termed the '*four R's'*: representativeness, reactivity, reliability and replicability to protect against the three most common archetypical biases: holistic fallacy, elite bias and going native (Miles & Huberman, 1994:262). In the opinion of Hitchcock and Hughes (1989), triangulation or diversity of method was the most common form of validity but asked whether validity could ever be satisfactorily and

completely demonstrated in qualitative research (Hitchcock & Hughes, 1989:106). Robson (2002) reinforced this view by stating that any one type of measurement or data collection was likely to suffer from shortcomings, a multi-dimensional approach minimized this, but it did not guarantee to eliminate the potential failings completely, to achieve this would require resources beyond the practical (Robson, 2002:103).
Honesty was a useful safeguard in research where the position of the researcher was fully disclosed so that the reader could decide how much bias may have been applied subconsciously by the researcher. As Angrosino and Perez (2003) pointed out, the traditional belief that cross-checking of information reported was not automatically or universally accepted as differences in testimony were expected given the differences of researchers and interviewees who experience their own version of the truth making it difficult to blend it all into a consensus (Angrosino & Perez, 2003:110).

Schofield (1993) averred that qualitative research was not something that should be or could be methodically replicated, but rather it was to produce a coherent and illuminating description of a situation, based on consistent and detailed study (Schofield, 1993:202). Hall and Hall (1996) pointed out that, results based on high internal validity may be artificial as the research cannot be applied to the real world where social interaction was more complex. Hall and Hall (1996) considered such studies high on the internal validity scale but low on the external validity scale (Hall & Hall, 1996:43). Babbie (1998) offered examples on how field research had offered a superior validity compared with surveys which may specify a concept field where researchers commonly gave detailed illustrations (Babbie, 1998:304).
Flick (2009) who quoted Hammersley offered three guiding principles that should frame the validity of the research;

> *"(1) The validity of knowledge cannot be assessed with certainty. Judge assumptions based on their plausibility and credibility. (2) Phenomena also exist independently of our claims concerning them. Our assumptions about them can only more or less approximate these phenomena. (3) Reality becomes accessible across the (different) perspectives on phenomena. Research aims at presenting reality, not reproducing it."* (Flick, 2009:387-388).

Peralkla (2011) concluded that validity was multi-modal in that it should be anchored in the data of claims concerning the relevant institutional contexts of interaction as well as the use of other documentary research techniques (Peralkla, 2011:378).

3.5.3 Reliability

Hitchcock and Hughes (1995) described in broad terms how the results of reliability could be replicated but pointed out that ethnographic and qualitative research traditions compounded the problem of reliability by virtue of their conventions (Hitchcock & Hughes, 1995:10). The researcher being the sole conductor of the research design and collation of data raised the question of; the influence of the researcher, analyst technique, the setting and so on. Miles and Huberman (1994) suggested that triangulation of opinion, getting multiple sources and modes of evidence regarding one topic will offer verification of data collection (Miles & Huberman, 1994:267). Cohen *et al* (2011) argued that qualitative research should be as reliable as positivist research, though in different ways. Cohen (2011) set out the three principles of reliability in qualitative research as being: stability, equivalence and internal consistency (Cohen *et al*, 2011:200). Flick (2009) quoting Kirk and Miller (1986) who used more exotic and '*chronic'* terms to describe similar principles: quixotic reliability, diachronic reliability and synchronic reliability (Flick, 2009:385). Regardless of the terms used, the problem remained the same according to Robson (2002) which was; using measurements that delivered stability or consistency (Robson, 2002:101). The main threat to reliability was researcher bias and reactivity according to Maxwell (1998) who suggested that it was impossible to eliminate the twin factors of reactivity and bias that a researcher brought to a subject, so it was better to understand how a researcher's value system and expectation will influence the conduct and conclusions of the study (Maxwell, 1998:91). Babbie (1998:305) opined that of all the ethnographic qualitative research methods, a comparative study was the one which generated the most trust (Babbie, 1998:305). The comparison of results from two training systems may shore up the triangulation of findings but Hall and Hall (1996) also reminded us that, when accounts differed between service provider and service user, the object was not to decide whom to believe but to understand why accounts differed (Hall & Hall, 1996:210).

Bryman (2008) outlined two differing reliability metrics; External Reliability and Internal Reliability (Bryman, 2008:376). As Bryman (2008) explained, it was difficult to apply the measure of replication in qualitative research as it was impossible to '*freeze'* a social setting and circumstance in which the inquiry was held (Bryman, 2008:376). The second concept of internal reliability required two or more investigators to conduct the same study and correlate their respective experiences to improve the accuracy of the results through inter-observer consistency (Bryman, 2008:376). The

difficulty in replicating qualitative studies was a source of concern for Robson (2002) who averred that;

> *"Replication is nowhere near as common as it should be in social research. In consequence, we may well be seeking to build on very shaky foundations."* (Robson, 2002:108)

There was, according to Denzin and Lincoln (2003), a growing realisation that the interviewer was not '*invisible, neutral entities'* but rather they were active participants in the interactions with interviewees and that the answers received could not be separated from the context in which they were gathered, the term '*negotiated text'* was used to describe this reality (Denzin & Lincoln, 2003:900).

3.5.4 Generalizability

Kvale and Brinkman (2009) highlighted the criticism directed at interview based research in that, due to the low number of subjects involved how can the findings be generalized? Kvale and Brinkman (2009) answered their own question with a question; why generalize? As the trend in the quest towards universal knowledge replaces the emphasis from generalization to contextualization (Kvale & Brinkman, 2009:261). Robson (2002) too, outlined how research findings may be applied in a more general context: Direct demonstration – where further study was carried out to establish the relevance to a wider population and making a case, where a persuasive argument can be put forward to show that it was reasonable to generalize the research with respect to a larger population (Robson, 2002:107-108). Flick (2009) stated that if research was to be generalized, than the focus needed to be on the relevance of '*which cases?'* rather than '*how many?'* in order to determine the appropriateness of the generalization being made (Flick, 2009:31). Miles and Huberman (1994:279) offered twelve relevant queries that may help to decide if research was '*transferable'* or not and opined that generalizing was more like translating, refuting, or synthesizing two or more studies of similar phenomena, that it was careful interpretation, not simple addition (Miles & Huberman, 1994:279). Cohen *et al* (2011) refuted the terms '*transferability'* or '*external validity'* stating that generalizability takes many forms and cannot be constrained by such narrow concepts (Cohen *et al*, 2011:242-243). Cohen (2009) stated that;

> *"… comments that generalization as that which is derived by strict sampling from a defined population is often irrelevant in qualitative research."* (Cohen, 2009:242)

Cohen *et al* (2011) went on to offer three guidelines on how generalizability may be achieved by the researcher; (a) maximizing the characteristics of the participants, (b) ensuring a consistency of contexts between the micro of the individual interviewee and the macro situation they operate in and (c) identifying patterns between the research and other contexts (Cohen *et al*, 2011:242-243). Gobo (2011) suggested that generalizability of qualitative research was anything but odd, as science studies the individual object/phenomena not in itself but as part of a broader phenomenon with particular characteristics (Gobo, 2011:29).

3.6 Summary of the chapter

This chapter looked at the various methods employed in the research conducted and determined the most suitable format for gathering data directly was semi-structured interviews. The challenges faced by the researcher in running the pilot, sourcing interviewees and translating those interviews was also outlined and gave the researcher a better understanding of how this research was so unique and may be for some time. The core principles of trustworthiness, validity, reliability and generalizability were also reviewed within the ethical considerations involved in the collection and processing of potentially sensitive data. This data is presented in the following chapter with a distinct examination of each area of the apprenticeship model, reflecting the five themes that emerged in the Literature Review, in both countries which were described from the experience and words of those directly involved in the delivery and receipt of the apprenticeship system and offers some fascinating insights generated by a comparison of two systems with the same aim in different cultures.

Chapter 4 Data Presentation

4.1 Introduction

In this chapter an examination of the research conducted using the methods discussed in the methodology chapter are presented. The five themes that emerged in the Literature Review chapter are investigated through the words of the interviewees, with interesting and subtle sub-themes emerging from the responses.

Theme 1: Apprenticeship structure:

Beginning with a context of both apprenticeship systems, the focus was on the structure of the Irish and Japanese apprenticeship systems as the participants experienced them and determine if there was a consistent and measurable scaffold to support the learning of the apprentice.

Theme 2: Cultural influences apprenticeship:

The views of the participants are explored on how the status of the apprenticeship model has changed in their experience and to explore in their words if apprenticeship still has a relevance to society and how in their view that relevance was measured.

Theme 3: The user's experience of the apprenticeship system:

The pedagogical aims of an educational or training system may not be obvious or effective in the experience of the learner and investigating the efficacy of both the Japanese and Irish apprentice models offered unexpected insights that had parallels to the time of the Guild apprenticeships. The experience of interviewees in both Ireland and Japan offered clear lessons on potential methods for a sustainable apprenticeship model.

Theme 4: International perception:

With global economic factors impacting on all nations the need to have adaptable and transferal skills has come into sharp focus. Questioning the experience of participants who had served an apprenticeship demonstrated the benefits of that training in other countries as well as giving the interviewee a benchmark in the quality of the apprenticeship they served.

Theme 5: Opportunities and challenges of craftspeople

The potential future of a profession was often determined by the income derived by its constituents and the apprenticeship model was no exception. An exploration of the

economic potential pathways available to existing crafts persons as well as to current apprentices will highlight the perception of craft skills to the next generation especially where an apprenticeship model is as expensive as the Irish apprenticeship model to the state.

Direct quotes are highlighted in *italics* and a brief biography of each participant is given in Appendix C, while maintaining anonymity in line with the ethics protocols outlined in chapter three. Each theme is compared directly between the participants in Japan and Ireland, with interviews conducted exclusively with artisans and apprentices in Japan and a mix of craftspeople, educators, employers and apprentices in Ireland reflecting the structure and stakeholders involved in both systems of apprenticeship.

4.2 Apprenticeship structure

The comparison conducted between the apprenticeship systems in Ireland and Japan revealed two very different approaches, from a contemporary and relatively new system in Ireland to a very traditional approach in Japan, but both were trying to adapt to societies that changed quickly and without warning in different ways. One major difference between the two systems was the co-dependent and inter-connectivity of the traditional crafts in Japan compared to Ireland. To produce one lacquerware bowl in Japan, (See Appendix D and H), required four different crafts which indicated how specialised each part of the process was. The weakness in this production line system of craftspeople was that, if one link in this chain of highly experienced and specialised artisans was not available then the entire system broke down, forcing alternatives to be sought in countries like China where the quality was not considered by the Japanese artisans to be as high. This was the situation in Japan as the research was conducted, for example there was only one man in all of Japan who extracted a particular type of lacquer from particular trees that were used in the finishing of traditional bamboo fishing rods. This particular lacquer was perfectly adapted to the climate of Japan as it was flexible and resilient in use in the humid climate of Japan. When this collector dies, it will no longer be available and cheaper and less suitable replacements will be imported from China. The same was true for the last man who made the sliding connector used in traditional umbrellas, the researcher was told that he had recently taken on an apprentice but they were the only two people in Japan who made this specialised part. The Irish apprenticeship system demonstrated more diversity within the

training, with each trade being independent of one another which allowed a qualified apprentice to work in a number of areas within that trade and many respondents described how they worked with different people in different areas during their apprenticeship, this varied experience gave them greater flexibility when entering the employment market or travelling abroad.

4.2.1 Japanese apprenticeship structure

As outlined in the Literature Review, Japan evolved from a feudal administration based around the warlord, to a system of central Imperial governance. Japanese society had been structured according to class, with the Emperor at the top, followed by the Warlord, Farmers, Craftsmen, Merchants, with peasants at the bottom, the freedom to choose your profession was not available until the Meiji Restoration of 1868 when the traditional system of hiring apprentices was approved only by the guild completely collapsed. This structure was based on the perceived value of each class to the Empire, a structure that was diluted with the opening of Japan to the West. With the establishment of the Education Code in 1872 leading to the creation of the Tokyo School of Mechanics and the adoption of Western style vocational training and the subsequent industrial development required in the build up to the second world war, Japan saw an increase in the trainee model for industry and a move away from the Master and apprentice system which was to be managed by Guilds and Trade Associations for specialist traditional craft areas. This resulted in modern Japan suffering a disparate, fragmented and unregulated apprenticeship system. Ten out of eleven artisans had or were studying exclusively under a Master, it was the Master who decided when they were ready to be an independent craftsperson, marking their official qualification as a craftsperson. The craftsperson would also have to get approval from a Wholesaler if they wanted to sell their products in the market place and a further requirement would be that the craftsperson would have to join an association or society which was based on experience and some required an entrance exam to become a full member, as outlined by one Master Makie Artisan;

> "*No formal structure, it depends on the ability of the apprentice, the Master decides when the apprentice can exhibit their work but the apprentice must belong to a society or association before they can display their work, generally it takes five years to get to this stage. To become a member of the Association of*

> *Traditional Craftsmen in Japan, which has over five hundred members, a craftsman needs twelve years' experience and have to take an examination to be accredited by this Association."* (Master Makie Artisan (1), Japan)

This approval process by a Master meant that there was no definitive length of time for an apprentice to serve, equally there was no requirement to register the apprentice with any Government body meaning that the apprenticeship period was vague to begin with, with most respondents saying that it took five years for an apprenticeship, but all eleven interviewees said it depended on the ability of the individual apprentice. The actual experience of those interviewed showed great variance in the time served by Japanese apprentices;

> "*I can't say exactly how long it takes to get to the next step it depends on the person's ability. So five year time is not determined but it is usual time for apprentice*" [sic] (Master Makie Artisan (5), Japan).

Of the eleven craftspeople who were asked (one was an apprentice) how long their apprenticeship took, the responses varied from two years to eight years with the average being 3.5 years although some respondents considered '*hoko'* as part of their apprenticeship and some did not.

Table 4.1: Time Served under Japanese Master

Number of Years served as an apprentice by interviewees	**Number of Qualified Interviewees**
2 Years Served	1
3 Years Served	2
4 Years Served	2
5 Years Served	2
6 Years Served	1
7 Years Served	1
8 Years Served	1

A cultural element that existed in the Medieval Guilds of Europe but survived into relatively modern times in Japan was the additional obligation to the time served by an apprentice called '*hoko*' or service period, which was an additional time period served by an apprentice under a Master without salary, to repay an apprentices' obligation to the Master who had housed and fed that apprentice. One respondent served a two year '*hoko*' period to his master but that system was less common in modern Japan.

As the traditional indentured apprentice model crumbled, a mix of avenues for a potential apprentice to enter a specific craft developed. The first option was to study with a Master directly after finishing secondary education, another option was to enter a training college and work with a Master for two days a week or to attend a third level college, graduate and then join a Master or work in a craft factory, working a single element within the production of a piece, although this was very monotonous work. Regardless of the route taken by the apprentice, the final approval always rested with the Master who would give an apprentice permission to display their work marking the end or near end of their apprenticeship. This meant no set training period, curriculum or exams and placed the apprentice in a very precarious and vulnerable position as relayed by one interviewee who explained what happened if a quarrel between an apprentice and a Master occurred;

> *"Some people make a quarrel with the Master and in that case they can't belong to a Trade Association, then he can't get orders from the Wholesalers so they just make smaller items or get orders from private customers. Communication with a Master is very important to continue with work."* (Master Kaga yuzen Artisan (2), Japan)

The choice of Master was very important as the Master had complete control over your future career success and the development of your technical skills. One interviewee related a very traumatic apprenticeship in Kyoto just after the Second World War in which his Master would not show him anything and he spent his apprenticeship doing chores. As an apprentice he could not understand this and after completing his apprenticeship, had to work on a voluntary basis for twenty years to gain the relevant knowledge in paper mounting and restoration. All eleven respondents believed that a modern Master had a duty to instruct an apprentice in the techniques of their respective craft and that an artisan never stopped learning and can always improve;

> "*When I was young I was told to steal the skills by observing it but that method doesn't work now as I do it myself and tell them how to do it, so the traditional style of teaching is not effective now."* [sic] (Master House Carpenter (10), Japan)

The interviews revealed the Japanese apprenticeship experience to be a chaotic system with no definite framework, term length, Government regulation or standardised quality assurance system. The views on the quality of training available in Training centres was also mixed with one recently qualified Artisan saying that she would not recommend the Training Centre, however, another Artisan who taught at a Training Centre for thirty years stated that the quality of the training was high. The difficult experience of past apprentices may have contributed to a default higher standard of crafts person by acting as a filter of those who may have not been as interested in a craft as more determined apprentices. Having inspected the work produced by the Japanese Artisans personally, the researcher can attest that they were of the highest standard, mainly due to the core of the system which was that an apprentice represented his Master when producing and displaying work. As a result it had to be of a standard that the Master was satisfied with and it was in the interest of the Master to qualify apprentices that can produce items of the highest quality. The interrelatedness of the crafts in Japan created another potential challenge for a newly independent craftsperson who may find the crafts he needed to supply him with workable material no longer existing or being very near extinction which may be a factor in not entering a specific craft in the first instance as it added to the potential difficulty in earning a sustainable income.

4.2.2 The Irish apprenticeship structure

The early Irish Apprenticeship structure evolved under British governance, although after independence of the Irish State, the British and Irish apprenticeship systems diverged down very different paths of less regulation for the British system with an increase in regulation in the Irish system. This divergence saw the Irish apprenticeship develop methodically and logically from the very early Guild system through a number of Acts from the Agriculture and Technical Instruction (Ireland) Act, 1898, through to the first Apprenticeship act in 1931, improved upon by the creation of a dedicated

training authority in the 1959 Act, adding to their powers in the 1967 Act, updated by 1987 Act which allowed for the reform and introduction of the Standards Based Apprenticeship (SBA) system which ended the link with the old time served apprenticeship system that was first introduced by the Guilds. The Standards Based Apprenticeship system, regulated and standardised the time, curriculum and key competencies of all twenty seven recognised apprenticeships in Ireland (See Appendix F) in partnership with all of those involved in the delivery of the apprenticeship system. The modern structure of apprenticeship comprised of seven phases (See Appendix E), with phases one, three, five, and seven served with an employer. The even numbered phases would focus on theoretical knowledge, phase two was spent in a dedicated government operated training facility and phases four and six were delivered in a third level Institute of Technology. The mix of time spent with the employer and in a training/education centre was generally appreciated as it allowed an apprentice to develop skills without commercial pressures and to see and be shown different methods of technical aspects of a trade which the apprentices found beneficial;

> *"… but I found within the FÁS system time pressure wasn't the same and it was more down to…the focus was just on doing it right and it doesn't matter how long it takes or whatever once it's done right. That I did appreciate."* (Carpenter (14), Ireland)

All phases of each apprenticeship was standardised and approved by the various stakeholders involved in the training of apprentices. Each off-the-job phase had both a practical skills exam and a theory exam which required a pass mark of seventy percent as a minimum requirement to progress on to the next phase. The on-the-job phases spent with an employer involved the completion of set tasks overseen by site visits conducted by representatives of FÁS, the Government Training Authority, called Training Advisors, to ensure these tasks were recorded in a suitable environment to an acceptable standard as per the syllabus. While all fifteen interviewees mentioned the exams in the off-the-job phases of 2, 4, and 6, the same was not true of the independent quality assurance verification of the on-the-job phases of 1, 3, 5, and 7, with none of the apprentices interviewed mentioning a verifier calling to the site to enforce the pre-set standards of the on-the-job training, out of the fifteen interviews only four mentioned the role of the national training authority in verifying the standards on-the-job. Both of the interviewees who were in the motor trade mentioned an auditing of log books by

employers to verify that certain tasks on the syllabus had been completed by the apprentice. Some had an employer who asked the apprentice to perform tasks, these were not considered by the apprentice to be comparable to the exams in the off-the-job phases;

> "*They weren't really tests as such, more like preforming tasks*." (Apprentice, (18), Ireland)

With one educationalist adding;

> *"… in industry it is probably a little looser in a sense it's very hard to keep the quality control issues on it because there is no monitoring."* (Educator, (15), Ireland)

One qualified carpenter related how his employer would '*test'* the educational standards of the off-the-job training by getting the apprentice to '*hang a door'* or similar when the apprentice returned from the off-the-job phases but the craftsman did not mention a government employed verifier visiting the employer to check the standards on site. While another educationalist said of the quality assurance protocols that;

> "*In most cases the apprentices don't even know they [Training Advisors] exist or certainly didn't know who they were. It would be my experience and it would be very rare to get an apprentice who would have actually spoken to a training advisor. That's not new, that's going back to when I served my time back in the 70's, it's the same thing*." (Educator, (21), Ireland)

With the completion of all seven phases to the required standard or above, the apprentice was awarded a National Craft Certificate marking the completion of the apprenticeship period which typically took four years, technically 208 or 210 weeks depending on the trade, none of those interviewed completed the apprenticeship in less than four years, three qualified carpenters admitted that it took them longer with one apprentice interviewed being in his ninth year of apprenticeship with an additional final phase yet to be completed at the time of the interview.

With such a tightly regulated system, the choice of employer was still critical to the transfer of knowledge and skills in vocational training as some employers would

train apprentices merely to the letter rather than the spirit of apprenticeship education as related by one interviewee;

> *"… getting the right employer obviously is so important, that the employer is committed in training and bringing you right through from start to finish. Obviously you have to have the want to become an apprentice or liking for the trade, you have to have a natural ability."* (Employer (26), Ireland)

Another respondent stated that about ten percent of his time spent with an employer was given to training exclusively. Another issue that was communicated by employers was the fact that you were required to offer an apprentice a four year employment contract at the beginning of the apprenticeship and this discouraged registration of apprentices with the Regulatory body in difficult economic times. This resulted in apprentices being exploited, as they were employed under the expectation of an apprenticeship but were not registered and eventually made redundant without their time being recorded.

4.2.2.1 Non-registration of apprentices (sub-theme)

A sub-theme that emerged from the interviews was the non-registration of an apprentice within three weeks of employing them as was required by the law in Ireland. One qualified carpenter outlined how he had worked with an employer for three months before being registered with the National Training Authority as an apprentice. This was also mentioned by one employer who outlined the rationale behind this practice as;

> *"… what we do is we take young fellas on to try them out to see if they have an interest in it and basically it they have an interest in it and we think they are good enough we would then offer them an apprenticeship to become either a carpenter or plasterer or whatever they want to be*" (Employer, (23), Ireland)

Awareness of the correct procedure of registration was outlined by one Educator who had experience of the issue stating that;

> *"But you must find an employer initially and then the employer should register you immediately with SOLAS formerly FÁS, but the tendency in Ireland has been that you have a trial for maybe 3 to 6 months beforehand and then the employer itself will register you. Technically that is incorrect, they should be registered*

> *straight away, you have 3 months then when the employer can make up his mind if you are not suitable or you can make up your mind that it's not for me and you part company and there is no issue. You can decide to go to another apprenticeship or whatever else and there is no kind of black marks against anyone. That is the system that is there."* (Educator, (21), Ireland)

There was clearly a large difference in the structure of both apprenticeship systems, but common factors still arose, the main one being the choice and quality of the employer to the experience and education of the apprentice, even though in the Irish system this was reduced somewhat due to the on-the-job/off-the-job structure which regulated the standards of knowledge transfer a little more than the Japanese system. The Irish system was transparent and structured but not without issues, the main ones being, that the lack of quality assurance of the on-the-job phases, the requirement to offer a four year employment contract to a potential apprentice was a major cost impediment to the employer, combined with the time spent in a training college or educational institute, left the employer without an employee and it was an expensive method of training to the exchequer. The long term outcome was the same in both countries where a sustainable income from a craft skill was low, which had a negative impact on the potential number and quality of young people willing to enter the world of the artisan.

4.3 Cultural values influencing apprenticeship

Looking at apprenticeship objectively in a global context showed how fragile and delicate the paradigm of apprenticeship can be and once the credibility of a trade was lost, as in the United Kingdom, it was very difficult to restore. Many of the artisans interviewed by the researcher entered the trade out of a family tradition and because it was seen as a good career choice, but was that still the case and did it vary in the different countries? If a society perceived that a craft had been devalued, how would that be reflected or manifest itself? The answers to these questions revealed themselves in unambiguous terms in both countries and with similar outcomes, the main difference was the speed of change. As Ireland was a small and open economy, its' fortunes changed quickly, compared to Japan, Ireland had only twenty five years of full autonomy from 1948 when Ireland left the Commonwealth until it joined the EEC in

1973. The development of national character was also reflected in the language used by participants in both countries and in the responses received during the research.

4.3.1 Apprenticeship traditions in Japan

Japan had a very long heritage in apprenticeship, remaining essentially unchanged through millennia, with the apprentice living with the Master for years until the Master decided that the apprentice was ready to become independent. That tradition no longer existed, global economic development and cultural change had created a hybrid of training systems to ensure continuity of skills, but the old traditions could still be traced when it came participants reasons for becoming an apprentice, with seven interviewees choosing to be artisans through a family tradition and four choosing it after trying other career options, one respondent highlighted the difference as;

> "*One thing I can say is that there are two types of artisans, one has succeeded as a family business and the other type is a new comer. A newcomer has entered this life because he or she was much more interested in this work and has made much more progress than the former type."* (Master Kutani porcelain 'akae' Ceramic Painter (8), Japan)

Another interviewee illustrated the traditional influence on someone who came from an artisan family, stating his reasons for becoming a Master Artisan as;

> "*What I felt when I was young was that every son of the family was supposed to succeed the family business in Japan."* (Master of Urushi-ware (6), (*Lacquer ware)*, Japan)

This tradition and advice from parents telling their children that a skill was a road to independence, especially in the rural areas, was a strong influence on this Master craftsman.

This new comer versus hereditary dynamic was interesting as the interviewee went on to say that a less rigid apprenticeship was needed, the apprenticeship system traditionally in Japan was one where you had to '*steal the knowledge'* from the Master and was essentially indentured slavery, with no holidays or pay, the apprentice was the lowest member of the family, interestingly, according to one interviewee, you were the lowest member of the family but not outside the family. This model was no longer

appropriate or practiced widely in Japan. This change in the practices of Japanese apprenticeship from the traditional system to the modern way was viewed positively by eight out of eleven participants, the concern was that the quality would decrease if the hardship was removed as one interviewee said;

> "*They are not as serious as I used to be. We were working while shedding tears, there were many nights I couldn't sleep, that increased the level of my skills so if the artisans of the next generation are praised from the first stage they won't make an effort to improve*." (Master Hyogu (9) (paper mounting), Japan)

As a result of this change of attitude, many training colleges have been set up where Master craftsmen and women teach their skills to the next generation to ensure the long term survival of this precious knowledge. This new system was not without its critics as one participant explained how in the Training Centres, apprentices were only shown good examples and they did not learn through the traditional system of error-reflection-error-reflection-improvement. A concern that was expressly unique to the Japanese culture was this response;

> *"That's one aspect of doing apprenticeship, but now they are training in training school, training centres so I'm feeling the sense will be lost from their products, just the skills are maintained and the spirit is lost"* (Master Lacquer Undercoat Artisan, (11), Japan)

The fear expressed by that Artisan was that, only through making mistakes and critically analysing on how that mistake was made can someone improve, this tenet was contained in the Japanese term '*gamburu'* which meant '*overcoming adversity through determination'*. For those who were interested in a craft skill but did not have a family connection the Training Centres offered at least two advantages; (1) it gave the apprentice access to Masters who could offer an apprentice the chance to develop their skills and get to know a Master with the hope of studying under him/her and (2) it increased the participation of women in the craft area.

4.3.2 The cultural value of apprenticeship in Japanese society

One metric of value and status of a career choice which was measured was the willingness of people to encourage or recommend the artisan life to the next generation.

When this area of opinion was investigated it produced a mixed response often qualified by economic reasoning. Two respondents said they would recommend an apprenticeship, six said no they would not and three had mixed or undecided views on recommending an apprenticeship. The general view of respondents was that the traditional apprenticeship system was all but gone and some believed that was not such a bad thing as it was too severe, but it came at a cost and that cost was a reduction in the quality of the craftsmanship. The realisation that it was very difficult to earn a sustainable income through your craft skills was unanimous and there were a number of reasons for this. The main one was the general state of the Japanese economy, the second was the Wholesaler monopoly and the third was the lack of understanding of the general public of the training and time required to produce such exquisite pieces, all of which meant that artisans could not get a price that was economically viable. One other factor mentioned was the population decline which meant fewer young people available to enter apprenticeship generally as well as fewer customers creating a shrinking market. When asked if the status of apprenticeship had gone up or down in Japanese society four respondents said the status had gone down and seven did not express a definitive opinion but expressed negative economic sentiments of the Japanese Artisan life in general, as one participant explained;

> "*It is getting lower. In the old days, if we had the skills we could make a living but not now, so it's very hard for young people. There used be lots of work for skilled people. Now other values are required and skills alone are not enough to get orders. Unfortunately, that is the current situation."* (Master House Carpenter (10), Japan)

Technology and globalisation were also playing a part in the decline of certain apprenticeships and craft skills, as in the case of the House carpenter who was the last of his trade in that particular Prefecture. He believed that the modern taste for Western styles in interior architecture reduced the need for Japanese House Carpenters and the modern conveniences like air conditioning and mechanical fittings used in furniture made the knowledge of traditional carpenters out-moded. Even the tradition within a Japanese home to have a space to display art was disappearing, in the opinion of one interviewee, this reflected the decline in cultural value for traditional Japanese Crafts;

> *"… changing their lifestyles is the main reason and placing values…they don't have any rooms, they used to have a special place to decorate with a piece of art"* (Master of Urushi-ware (1), Japan)

The relevance of time served that constituted such a large part of the traditional system was also mentioned as outdated for the society of today where speed was very important and this made a long apprenticeship unsuitable. This highlighted an important point shown in the Literature Review regarding the importance of communicating to society the value and importance of quality apprenticeship and the contribution of craft skills to a society. One Master related how it was difficult to explain to a new apprentice the merits of the traditional system, the apprentice cannot understand the value of the traditional system until after they have completed their apprenticeship which was a '*catch 22'* situation.

4.3.3 The cultural values and traditions influencing apprenticeship in Ireland

The craft traditions had a long and distinguished lineage in Ireland, which was evident from the research where eight out of fifteen of the participants were able to trace a family craft connection back several generations or were able to identify a craft heritage in the family all be it in another craft area, the connection was real and relevant. Five interviewees also chose the trade for economic reasons, where options were limited and a trade was chosen as a last resort. This demonstrated a divided status of craft skills in Ireland, there were those who saw it as perpetuating a family tradition and those who had it chosen for them out of a lack of career options, with one participant saying;

> "*The status of the craftsperson has gone way down, has gone way, way down, it is not associated with learning it's associated with almost non-learning, people who are incapable of learning. That's in society in general, it doesn't mean that the system is bad, or it doesn't mean that it hasn't potential it's just the way it is perceived within society at large."* (Educator (12), Ireland)

The reasons offered for this perceived decline in status included the increase of technology, reducing the level of skills required in construction, the lack of understanding by society of the training involved in apprenticeship, the lack of quality

assurance and regulation of qualifications in the craft area during economic prosperity and the failure of the educational establishment to fully equate apprenticeship with other forms of education, what one interviewee called "*educational snobbery"*.

One measure of cultural value that was mentioned by a couple of participants was the comparable position in society of craftspeople with other professions;

> *"I remember somebody saying at the time and whether it's true or not in the 70's there was a sort of an equation or an equality between a Garda [Police] Sergeant, a school headmaster and a qualified tradesman, and a bank manager and that has changed. You couldn't equate them now at all and certainly I think the one who lost out more than anyone there is the tradesman.*" (Educator (24), Ireland)

The language surrounding the craft area by interviewees was also very revealing and was remarked upon by a number of participants. Even though there was no official difference between the term 'Craftsperson' and 'Tradesperson' in Ireland it was mentioned by some respondents how the notable decline in common use of the word '*Craftsman'* and subsequent increase of the word '*Tradesman'* for some, was an indication of the decline in society of the value of a craft skill and how the word '*Crafts'* was more associated with the Art community than the skills area also suggested a disconnect in the minds of people between the aims of an apprenticeship and the abilities of a qualified craftsperson. When compared with the Japanese use of the words, '*Master'* and '*Artisan'* it showed a clear distinction of cultural position and the Japanese were very specific on this as one interviewee from Japan said;

> "*Farmers are farmers, artisans are artisans, artists are artists. They are not the same. We are artisans, we earn daily money*." (Master *Hyogu* (9) (paper mounting), Japan)

When the Irish participants were asked if they would recommend apprenticeship to the next generation; ten people or two-thirds said yes, one person said no and four were unsure or felt that it would be suitable to those who were unsuccessful or unsuitable for college. An interesting aspect of those interviewed who were parents themselves, revealed that none of their own children chose the apprenticeship route despite doing woodwork in school and given that they were in a role that potentially

involved promoting apprenticeship. One possible reason for this apparent contradiction in support of apprenticeship was mentioned by three interviewees, two educators and one apprentice who said that "*academic snobbery"* existed when it came to the perception of apprenticeship, with the apprentice stating that when it came to the status of the trades, apprenticeship was;

> "*Probably lower than most college courses*" (Apprentice, (19), Ireland)

The view of the other two respondents were more direct;

> "*There is a huge amount of snobbery in education."* (Educator, (15), Ireland)

> "*Unfortunately now I do believe especially in educational circles shall we say, there is a certain amount of academic snobbery and that the apprentices are, shall we say, on the lower end of the scale academically*." (Educator, (24), Ireland)

One potential explanation was offered by another educator who said;

> *"… it was a form of learning when there was limited options available, now there is so many options and this [apprenticeship] has become a limited form of education, so almost a complete reversal."* (Educator, (12), Ireland)

The apprenticeship route was seen as an alternative to learning or at least a secondary alternative to academic learning with one qualified carpenter responding to the question of would he recommend apprenticeship, he answered;

> "*I would go the college route first and if that didn't work, I would yeah, yeah."* (Carpenter, (18), Ireland)

The trend towards Information Technology by the current apprentices was apparent as they referenced current technical websites that they used, while those who were qualified for longer mentioned books as a valuable source of self-directed learning. Employers believed that self-directed learning had huge advantages to the

general development of the individual, increasing their flexibility on the job, thereby making them more employable than someone with a narrow range of skills.
The respondents who had the strongest family traditions were the most ardent supporters of apprenticeship which was unsurprising in a country were history forms the lining of the present, but there was recognition that the perceived value and status of apprenticeship in Irish society had declined over the past three generations. Eleven of the fifteen interviewed believed that the status of apprenticeship in society had declined, while one apprentice believed it had increased and the remaining three believed it was unchanged. This demonstrated a possible crisis of confidence in the apprenticeship model where ten out fifteen participants would recommend an apprenticeship to the next generation but eleven out of fifteen of the same interviewees believed apprenticeship had declined in status.

The decay of status and perception of the apprenticeship system in both countries appeared to be in parallel decline and similar factors occurred in both countries, namely the declining economic reality of the traditional craft area and the low public perception of apprenticeship. What was more interesting were the differences; where in Ireland, apprenticeship appeared to be a route for those with little or no interest in education, in Japan there was no distinction between traditional apprenticeship and university, in fact it was common in Japan to begin an apprenticeship with a Master after completing a college degree. A strong parallel was the lack of understanding in society of the value and standards delivered in both apprenticeships; this lack of appreciation became a negative cycle of decline in both the status of apprenticeship education and contribution of craft education to the heritage of a country over generations.

4.4 User experience and knowledge transfer

Apprenticeship like any form of vocational education does not operate outside of society, it is an integral part of it and the apprenticeship experience changed as social trends changed. The traditional Japanese apprenticeship appeared Dickensian to modern Western sensibilities, where an apprentice served the Master without question, and in return the Master would not instruct the apprentice in that craft, rather the apprentice would have to '*steal the knowledge'* from the Master by watching each step carefully from a distance and trying to understand and replicate that skill through trial and error in

isolation. This attitude has changed with the decline in new apprentice numbers and the loss of knowledge as Masters pass on. This pattern was not totally unfamiliar in Ireland and the system of indentured apprenticeship was common under the Craft Guilds but declined as a greater emphasis was placed on the educational standard of apprentices through successive legislation. Although, echoes of the old Guild system still remained in that an apprentice must first get the support of an employer before a young person can be registered as an apprentice with the State body and secondly, the employers' contract with the apprentice stated that the employer would employ that apprentice for the full term of his/her apprenticeship.

4.4.1 The experience of the Japanese apprentice

All of the current Masters who studied under the traditional apprenticeship system related a similar tale of little or no pay, no holidays, long working hours and uncompromising Masters. One particular interviewee retold his apprenticeship that today would be a clear case of child abuse. Besides the usual hardships of long hours, little sleep, no pay or holidays, constantly doing chores and learning very little about his craft, he described malnourishment, illness and gruelling delivery trips on bicycle in the summer heat. When asked if modern apprentices would endure such conditions, he said "*no, they would die*!" Even as the role of Training Colleges increased in recent times and the traditional apprenticeship declined in popularity, the old ways had their merits in the eyes of some of the Masters interviewed, in a way that was difficult to justify in the West as related by one interviewee;

> *"You were scolded by your Master, maybe you didn't understand why you were scolded at the time but you know that in the future you understand why you were scolded by the Master. That's one aspect of doing apprenticeship, but now they are training in training school, training centres so I'm feeling the sense will be lost from their products, just the skills are maintained and the spirit is lost."*
> (Master Lacquer Undercoat Artisan, (11), Japan)

Although not everyone agreed as one Master explained;

> "*When I was young, I was told to steal the skills by observing it but that method doesn't work now, so I do it myself and tell them how to do it, so traditional style of teaching is not effective now."* (Master House Carpenter, (10), Japan)

The concern over the loss of some of the more metaphysical elements of craft skills education was a genuine fear because it was in the opinion of the interviewees, another indicator of the decline of standards in the modern variants of apprenticeship training in Japan. There was acceptance that the training centres and colleges gave the apprentices a good knowledge base but that they lacked the kinetic skills acquired through the seemingly endless repetition of specific parts of a process to contribute to a higher quality whole. In some cases, the apprentices had more technical knowledge than the Master which caused friction, an example of which was given by a Master Kimono painter who said;

> "*So in the case of the graduate from the College of Art, some of them have artistic senses, better senses than the Masters. If that happens it causes trouble. It is easier for him to teach."* (Master Kaga *yuzen* painter/dyer (2) Kimono Painter, Japan)

A number of Masters explained that under the old traditional apprenticeship, your knowledge was earned the hard way and not soon forgotten, however, with the newer evolution of the apprenticeship system, students can become '*a la carte'* apprentices going from Master to Master or from course to training programme and this can lead to lower quality in general as knowledge easily learned was easily forgotten as one participant put it. It was difficult for the current generation of apprentices to appreciate how different the modern conditions were compared to previous generations and this was remarked upon by one interviewee who thought it was a pity that they do not understand how lucky they were given the experience of the older generation Masters.

Another aspect of the traditional apprenticeship system in Japan was the belief that you never stopped being an apprentice, even when you became independent. This belief may have been cultivated in part because of the eleven people interviewed, only one Artisan was trained in a formal state training college where term lengths were more definite. In fact, according to one Master, it was only when you left the relative safety net of having your Master around to consult with on various aspects, did one learn for oneself;

> *"I didn't have enough time or energy to learn from others but we can't lean 100% during a five year period from our Master. After we become independent we start to learn for ourselves, everlasting learning. While we work we need to learn more, we can't say this is the end of the training."* (Master of Urushi-ware (5) (lacquerware artisan), Japan)

One Master called himself an apprentice even though his Master has passed away many years ago, he recalled the words of his Master and tried continuously to fully understand the teaching he received, believing that when the learning stops, then the growing stops as well and that should really only happen with the arrival of death. Another Master Carpenter said that he had been working for fifty years but needed more practice.

4.4.2 The experience of the Irish apprentice

The experience of those interviewed on the Irish apprenticeship experience was universally positive and the key elements that current and past apprentices appreciated was the mix of on-the-job training and off-the-job education which gave participants the opportunity to make mistakes, mix with other apprentices to discuss employers and methods, learn new aspects of their trade as well as seeing different approaches to construction methodologies. The apprentice experience was most positive when learning from craftsmen of high standards in college or on site as this offered a view of the craft area to the apprentice which they had been unaware of before in terms of technical ability and professional standards. One apprentice remarked that the length of time spent in Phase 4 and Phase 6 should be longer as the theoretical knowledge gained proved useful later on, when asked how the apprenticeship model could be improved, another interviewee stated;

> "*Changing how long you are in college for. Longer for the second two times. Yes, it's good for learning*." (Apprentice, (19), Ireland)

However, one employer highlighted how the requirement for apprentices to attend colleges for ten or eleven weeks was very disruptive to some employers who has several apprentices leaving at the same time giving the example of;

> "*I was working with BCB Engineering and a lot of apprentices there fabricator apprentices and the trouble was they would all go at the same time, so you had 15 apprentices and the next thing the 15 of them, they wanted to take them all to school at the one time and you are going; 'that's half my fucking workforce gone!', so you need to be able to say take 3, 3, and 3, rather than right I'm taking your 10 this month*." (Employer, (23), Ireland)

The value of the time in college was expressed by three other respondents from the trade of Carpentry and Joinery, who found the geometric roofing developments useful when they returned to the employer as they understood the various components of a roof structure better;

> "*The model roof I found very helpful down in the workshop when I was in college, I have recently only started at fixing roofs but I now understand how to erect hips and valleys and how to get the jack rafters in such a position*" (Carpenter, (13), Ireland)

The clear structure of the Irish apprenticeship model was evident as all respondents stated that they attended state training facilities with three participants attending off-the-job training on a Day Release scheme and ten attending off-the-job training on the more modern Block Release system, and all completed state exams. The views of participants on improving the apprenticeship model was varied but the need for business skills was mentioned by five respondents, the full range was as follows:

No.	Code	Suggestion on how the current apprenticeship model could be improved?
1	(12)	More communication, presentation skills
2	(13)	More business skills
3	(14)	Higher Levels of Qualification required
4	(15)	Higher standard of educators
5	(16)	More business classes
6	(17)	Accounting, I.T. and business theory required
7	(18)	Better regulation of employers in training standards
8	(19)	Longer off-the-job phases
9	(20)	More collaboration with Industry
10	(21)	More flexibility/creativity in the syllabus
11	(22)	More business skills and easier transfer of apprentices between employers
12	(23)	More business skills and reduce the term length of apprenticeship
13	(24)	Apprenticeships in other areas
14	(25)	Focus on new lower energy construction techniques
15	(26)	More use of machinery and jigs

Table 4.2: Feedback on Improvement for Irish Apprenticeship System

The amount of time given by an employer to an apprentice in training was another interesting contrast to the Japanese system as there was no difficulty or reservation about asking an employer to explain any technical aspect or to demonstrate a particular skill but it was clear in the view of the participants that the role of an apprentice was primarily to work. With an average of fifteen percent of the working week estimated to be given by the employer or senior tradesman to teaching an apprentice new skills but it depended on the discretion of the employer with one participant saying that;

> *"I don't think the employer was really interested in giving any skills, he was just interested in getting work done and for you to do work, he didn't view apprenticeship as a form of learning or a form of training, he viewed it as just kind of a cheap source of work, a cheaper worker…..the employers themselves have a very poor attitude to learning and education*" (Educator (12), Ireland)

Although one employer stated that;

> "*I actually remember buying books for my apprentices and trying to encourage them to read outside the job. I think a lot of them just appreciated it as being a job with a bit of skill involved more than a career, a skill driven career, you know*" (Employer/Carpenter, (14), Ireland)

With another employer from a large construction firm saying;

> "*… nowadays it is all PDP [Personal Development Plan] or CPD [Continuous Professional Development] and we are very committed to CPD."*
> (Employer/Carpenter, (26), Ireland)

There was an accepted understanding by all those interviewed that the off-the-job phases of apprenticeship were for academic learning and that the on-the-job phases were focused on work experience but all participants believed that the learning did not stop there and that independent learning outside of college or work would be beneficial.

4.4.2.1 Difficult experiences of apprentices (sub-theme)

The often difficult conditions endured by apprentices as well as the quality of the learning experience and the need for careful monitoring was mentioned by one employer, who said;

> "*I do think you need to have good people watching them and them [apprentices] working with good people. I think they [apprentices] can be abused a bit as well, so it is something you need to watch*." (Employer, (23), Ireland)

Another educator also highlighted the fragile confidence of a young person who may be still in their teens, suddenly finding themselves in a challenging and macho environment by saying;

> "*… it's kind of a rough environment to put a youngster into and because of the nature of the industry….they are going out then with a certain range of skills and a certain level of confidence which is very important that they can feel that they can do something, OK, they might get abused, they might get messed about a bit, but they have certain level attained already and that year is critical because, like there is so much that can be done in terms of improving a persons'*

> *confidence, getting the mix between practical and the education right. Apprenticeship should not be offered as an alternative to learning and they should never be seen like that*." (Educator, (12), Ireland)

This echoes the early experience of the Japanese crafts people who experienced the traditional apprenticeship in Japan outlined earlier in this chapter.

4.5 International perception

As outlined in the Literature Review chapter, Japans' isolation was well documented and that came through in the research as well, except for one Master Carpenter who worked in Norway, there was little or no experience of apprenticeship systems outside of Japan and the only international experience discussed was the exhibition of their work abroad. The lack of knowledge of other countries was culturally difficult for the Japanese respondents to acknowledge and as a result respondents gave vague responses to the questions asked on this area. The Irish participants had more experience and knowledge of other apprenticeships but mainly of European and Australian systems, this was not surprising as Ireland has endured generations of emigration and the old time-served Irish apprenticeship system was originally inherited from Britain in the nineteenth century with improvements transplanted from Germany in the early nineteen nineties with the creation of the Standards Based Apprenticeship. The World Skills competition was also well known within the Irish apprenticeship community and this facilitated interactions and experiences with other cultures through apprenticeship.

4.5.1 International experience from the Japanese perspective

The Japanese Master craftsmen were naturally focused on Japan, the needs of Japanese customers and the traditions of Japan. Of those interviewed only two had craft experiences in another country, with the majority of respondents redirecting the question by saying that they had their work exhibited abroad. A number of interviewees spoke of the senses and feeling behind objects created by artisans, the importance of the seasons to Japanese people and to have that reflected in each piece created. One Master Wood-turner said that this sensitivity and awareness to the feelings and concepts infused into each piece by the craftsman was what set Japanese customers apart from everyone else. An interesting cultural characteristic was that while conducting the

research in Japan, each artisan insisted on demonstrating an example or several examples of their work going through each tiny detail in the finished product. This education on every technical detail changed the perception of a piece from being '*just'* a beautifully crafted piece to seeing the object as a full and rich universe of intricate and interwoven skills, stories, experiences and centuries of endeavour by generations of dedicated artisans. As a Western researcher it felt as though the Master Craftspeople were trying to translate the importance of each minute detail. None of the Irish participants offered to show a piece they had crafted or displayed the same passion in discussing the journey required to be a Master craftsman. This difference in cultural values was remarked upon by a Master Hyogu who had been to Republic of Korea and the People's Republic of China and believed that their standard was very low as they had lost a lot of their culture from centuries of warfare. He argued that this was not a case of '*Japan is better than others'* just that different cultures have different standards which evolved from different experiences;

> *"If we believe that the skill is not very good that is ok, that's taste and personality. That is the important point. Of course the Japanese are higher but that is related to the history of Japan*." (Master *Hyogu* (paper mounting) (9), Paper Restorer, Japan)

While another Japanese Master said;

> "*I think European people rather than Japanese people appreciate the value of traditional crafts now*." (Master of Urushi-ware (*makie* artisan) (5), Japan)

The different attitudes and focus of cultures was pointed out by another Master Carpenter who had studied in Norway. He believed that the skills level in Norway was as good as that in Japan but it was the focus on design in the Norwegian culture that he noticed the most. He thought that being open to other ideas and ways was very positive and possible because of the relatively short history of Europe compared to Japan which in his view was still very closed to new ideas and had little focus on design with little or no interest in communicating with other artisans nationally or internationally;

> *"One problem of the Japanese people is that one item is supposed to be used for the tea ceremony we think that can be used for the tea ceremony only, in that*

sense we are very closed, so the foreigners use the ideas for the tea ceremony for decoration of the houses and for other functions. I was very impressed by that." (Master House Carpenter (10), Japan)

4.5.2 International experience from the Irish perspective

The perceived standards of the current Irish apprenticeship by all those interviewed was that it was a good system that worked well for all the stakeholders involved and compared well with systems in Europe and internationally, although only nine out of fifteen respondents had direct experience with an apprenticeship system outside of Ireland. One interviewee highlighted the German model as having too narrow a focus in a globalised world;

"*It is much more structured and that's why you find that they have a very high level of guy that does tiling in Germany or who does slating in Germany but he has a narrow range of skills… he may not have the comfort of being able to just do tiling all his life, he has to adapt and particularly in a small local economy like Ireland you have to be much more versatile*" (Educator, (12), Ireland)

The same respondent discussed how in Germany and in the Netherlands, when they spoke about crafts people, the term referred to lower level workers, equivalent to the term '*Blue collar workers'* reflecting the status of craft education in those countries. Twelve out of fifteen people interviewed, believed that apprentices who trained and were qualified had the skills to work in other countries, but that a language would be beneficial. Evidence of the quality of the Irish apprenticeship system was, according to one participant, the performance of apprentices at the World Skills competition and the interest from other countries in recruiting Irish crafts people;

"*… one of the parameters that we can test ourselves is the World Skills, Ireland performed very well there, was it last year we were level out of fifty something countries and the fact that people in the last couple of years looking for our apprentices to go abroad must support the fact that we are doing something right*." (Industry Body Representative, (22), Ireland)

There was a feeling by some that the creditability of the apprenticeship model was under threat and needed to be protected against reductions in standards and in its

value to society. The time spent in a college or training institute was valued and it was felt that additional areas should be included such as business skills or possibly a language which could be done in an additional higher level qualification, similar to the old system of apprentice-craftsman-journeyman that operated under the Guild system. If there was an area that needed to be addressed in the opinion of some participants it was in communicating the value of an apprenticeship to society and change the perception of vocational education from a dumping ground for those of low academic ability to a worthy, challenging and rewarding career choice in order to ensure the long term viability of apprenticeship for future generations.

4.6 Opportunities and challenges

As apprenticeship was essentially a pre-industrial response to the need of knowledge transfer in specific areas, it has suffered in step with the fortunes of the economy at large and both economies during the time of this research were in a condition that was less than positive. Ireland was just emerging from a devastating recession and the Japanese economy had been in effective stagnation for over two decades. Japan's problems were compounded by a decline in the national birth rate which had a double negative impact on apprenticeship as it meant fewer potential future customers and less young people to enter into an apprenticeship. Many of the Master craftsmen interviewed were the last of that particular skill in their local area.

4.6.1 Challenges facing the Japanese artisans

The Japanese interviewees were very negative on the employment prospects of a newly qualified apprentice with nine out of eleven participants saying that prospects for the traditional crafts in Japan were very poor. However, two respondents believed that this did not apply to all crafts equally and if an apprentice was in a popular craft then the employment prospects were good. The flexibility of training avenues between apprenticeship, training college and University was very different to Western traditions, as in Japan there was no hierarchy or vertical progression pathway in learning skills and the order of any one of the three options could be interchanged by an individual as discussed by one Master who said;

"*Some study at the University but not my apprentices. Some great students after graduation from the training centres may proceed to University or a city class studio.*" (Master Urushi-ware (*makie* artisan) (1), Japan)

The Japanese system of an Artisan producing goods that were then bought by a Wholesaler who then sold it to the general market or distributors meant that you were an independent artisan who was dependent on a Wholesaler. It was the Wholesaler who decided what sold and what did not and because of this, only tried and trusted designs and products were bought by the wholesaler who also dictated the price the artisan got for their work. This made it difficult for a newly independent craftsperson to innovate new styles or become established as they would get very low prices for their work unless they won several national competitions and awards, it was not until a Master earned the title of '*National Living Treasure'* could they effectively name their own price. This dependency relationship was explained by one participant as follows;

"Some people don't understand what they learn or what kind of situation they are in and the wholesalers won't tell the other about that because they like to control the artisans. So they say if you produce good things they would sell them but I don't think so, it is very difficult." (Master Kaga *yuzen* (2) (Kimono Painter), Japan)

Of course what these Japanese artisans produced was of the highest quality and would be considered a discretionary spend by economists and with the stagnation of the economy there was less demand, this was also reflected in the number of Master craftsmen generally as seen through Trade Union memberships. One interviewee, who was an executive member of a local trade union related how membership has been reduced to a third of what it was during the economic highs of the nineteen eighties. Opinions on a solution for this were divided, one Master Kutani believed that more should have been done to promote the craft skills by each industry;

"*He thinks that it is very important for this industry to promote the craftsmen to increase the number of craftsmen but that depends on the Masters, he didn't used to think this way as he believed that apprentices would become competitors*." (Master Kutani, (8) (Ceramic Painter), Japan)

While a Master Hyogu believed that current artisans get too much support from state bodies and media which were having an unintended negative consequence;

> "*There is too much support from the government and mass media is one of the reasons they pay too much respect for young artists, the young artists get too proud of themselves*." (Master *Hyogu,* (paper mounting) (9), Japan)

There were also technical challenges to Master craftsmen who would like to export to other countries especially in some crafts. The main difference was in climate, where varying rates of humidity meant that producers of wooden products could not export abroad as the products they produced would warp and potentially split in a climate of a different humidity level. A second challenge was that traditional ware was not suitable for modern labour saving devices like dishwashers where the harsh salts and cleaners damaged the lacquer and the excessive heat and moisture can fatally affect the underlying timber beneath the numerous layers of lacquer. The changing styles and trends were also having an impact on the sales of traditional goods and luxury items as the trend in Japanese homes was toward a Western style. This meant that the traditional area reserved for the display of highly prized items was not part of the construction or design of the modern Japanese house. When asked if modern apprentices had the skills to start up his or her own business the answers were vague because entrepreneurship was not the tradition in Japan, the craftsperson-wholesaler-customer was the tradition but two interviewees did say that it depended on the personality of the individual, referred to in Japanese as '*gamburu'*, this translates roughly as '*overcoming adversity through determination*'. While two Masters had websites, neither one was in a non-Japanese language which reflected the lack of international experience of crafts people in Japan, it was summed up by one Master who said;

> "*We stay inside of the country, we don't know the value and difference. We need new perspectives*!" (Master Kaga *yuzen,* (2) (Kimono Painter), Japan)

4.6.2 Challenges and opportunities for Irish apprentices

With a heavy reliance of the Irish economy on the Construction industry, where one in seven of the working population were employed in the construction industry, the resulting housing and general economic collapse had a direct impact on the prospects of

apprentices in Ireland and this was reflected in the answers given to questions on possible future prospects, which were mostly negative. With thirteen out of fifteen respondents connected with the construction industry, positive responses were given by two interviewees, both of whom worked in the motor industry. One participant did highlight the need for skilled crafts people in the maintenance and repair of heritage building stock, the majority of which pre-dates 1919 and he stated that there was a shortage of expert crafts people in this area. When asked about the prospects after an apprenticeship, such as starting a new business, it was clear that business skills were non-existent but were urgently needed by newly qualified people in the craft area with thirteen out of fifteen participants saying that a newly qualified apprentice did not have the business skills to start their own business, one respondent offered an insight into why business subjects were not included in the syllabus;

> "*I remember being at a conference and the representative of the CIF* [Construction Industry Federation, an industry lobby group] *stated quite clearly he didn't wish to see crafts people progressing to any other position, because he felt it cost so much money to develop the craftspeople, why would we want them progressing out of it?"* (Educator, (15), Ireland)

Other options available to newly qualified apprentices included emigration, which was a traditional choice for young people in Ireland generally. It was viewed as a positive option, although the inclusion of an additional language was recommended by those who had travelled abroad to work. In total, fourteen out of fifteen respondents said that a newly qualified apprentice had the skills to work abroad, with one qualified carpenter saying;

> "*I was working in Australia for a while; the status was much higher, much higher. We were treated like kings. There is a National Carpenters' Day in Australia."* (Qualified Carpenter (18), Ireland)

There was a general consensus that the quality of the Irish apprenticeship system was well regarded in most if not all countries travelled to by Irish crafts people. For those who could not or did not want to emigrate another option available was third level education and it was evident that there was confusion about the entry pathways available. Seven interviewees believed that there were clear pathways into Higher

Education and eight respondents said that they did not know or it was unclear what the pathways were, most were unsure of what options if any were available to them specifically, rather than to the general population as a whole. Those respondents who worked in the education sector were aware that efforts were being made to improve this situation at a national level. When asked if the current apprenticeship system was still relevant in society, twelve interviewees said yes, most added that is needed to be made more relevant to current industry, technological development and economic changes. Of the three who said apprenticeship was not relevant, they mentioned the lack of employment as evidence for their view.

4.7 Summary of the chapter

The presentation of the data revealed specific insights into the current status of apprenticeship in both Ireland and Japan in all of the five areas investigated, through the narrative of each participant as revealed by the selected texts directly quoted from the interview transcripts. The structure was clear in the Irish apprenticeship model through consistent responses but was shown to be less defined in the Japanese apprenticeship system. The culture of Japan had changed and those interviewed felt that the traditional apprenticeship was obsolete, a similar sentiment was expressed by the Irish participants although through a different metric, that of educational parity, which many felt in Ireland that the craft area had sharply declined compared to higher education. The experience of the interviewees of apprenticeship was shown to be very difficult for the Japanese crafts people, while the Irish participants were mainly positive with some issued raised on the on-the-job elements of their apprenticeship. The lack of international experience of the Japanese crafts people reflected the country's cultural heritage as did the emigration of the Irish crafts people but the future in both countries for craft skills and apprenticeship was generally negative with a few exceptions which depended on the area of study. Additional sub-themes revealed the difficult experience of an apprentice transitioning from a school to a work environment within the structured Irish apprenticeship model that was not expressed to the same extent in Japan.

4.7.1 Apprentice structure

The research from the interviews revealed that the Japanese apprenticeship model had no formal structure as demonstrated by aspects such as the undetermined length of time

potentially served by an apprentice under a single Master, an additional year or two was required to be served by an apprentice to repay the benevolence of that Master and the deciding authority of the Master on the qualification of an apprentice. The interdependence of the crafts in Japan demonstrated another weakness of the entire system as more and more senior Masters died and were not being replaced by the next generation, breaking key links in the chain of production of single items. Crafts such as the maker of umbrella connections which were critical to the entire umbrella production process were being lost forever.

The choice of employer was critical in both systems, even in Ireland where an apprentice was tied into a four year employment contract with a single employer, with little or no evidence of a quality assurance system in the on-the-job phases. The Irish system had the advantage of the apprentice spending three out of seven phases in a training college or Institute of Technology which exposed the apprentice to different skills and methods but again the choice of educator then became important in the quality of the vocational education to the apprentice.

4.7.2 Cultural value

In both countries it was apparent from the responses of the interviewees that a sustainable income had a direct impact on the number of new apprentices entering the trade area. In both countries most respondents entered the craft area out of familial tradition and both believed that the status of an apprenticeship had declined in their respective cultures. An indication of this decline was the language that surrounded apprenticeship and the craft area, especially in Ireland, where the term '*craftsman'* was common a few generations ago but was replaced by '*tradesman'* as the descriptive noun most commonly used in society. The education of societies to the standards and benefits offered by the apprenticeship system was highlighted as an urgent need in both cultures.

4.7.3 User experience

The experience of participants in Japan related a difficult and frustrating time that was no longer tolerated by the current generation of apprentices who would not be able to endure such a testing training programme in the opinions of the Masters interviewed. In Ireland the response of the apprenticeship experience was very positive with the mix of on-the-job/off-the-job being a huge benefit, each with a distinctly different focus and expectation, although not without its criticisms from employers. Abuses of the

structures as well as of apprentices was shown to occur in both models to varying degrees.

4.7.4 International perception

The acceptance of the Japanese interviewees that they had little or no experience of other systems of apprenticeship was a reflection of the long Japanese tradition of isolation. However, the few respondents who did have experience believed that the standard in Japan was equal or higher than most but that the Japanese apprenticeship model has evolved with a different focus that reflected the Japanese culture of sensibility and detail, not apparent in other countries. The Irish participants had a good knowledge or experience of other countries and their apprenticeship systems mainly through travel or competitions. The respondents believed that the Irish apprenticeship system was equal or higher than most other apprenticeship models in their experience.

4.7.5 Opportunities and challenges

The main concern expressed by participants in both countries was the potential ability of a newly qualified apprentice to earn a sustainable income, although economic fortunes were changing for the better for apprentices in Ireland. The reverse was true for the Japanese apprentices who faced a number of challenges including changing tastes of society, technology, population decline, ongoing economic challenges and the ever decreasing number of Master craftsmen taking on apprentices with no potential solutions in sight.

We have seen a number of themes explored through the words and experiences of those directly involved in the apprenticeship model, with sub-themes emerging as genuine issues in the experience and quality of an apprentice engaged in the paradigm of apprenticeship. The consistency in the concerns of participants in both countries was surprising and even more of a revelation was the how these identical concerns chimed in both countries with very different cultures. In the next chapter, greater detail of these themes will be investigated with relevance to the literature explored on apprenticeship.

Chapter 5 Data Analysis

5.1 Introduction

This chapter presents a more detailed and direct comparison of the research conducted with reference to the broader context of the research highlighted in the Literature Review. The responses recorded from the interviewees in both countries will be analysed under the five themes that have emerged as a repeating pattern throughout the research. The five themes investigated were;

- Apprenticeship structure
- Cultural values influencing apprenticeship
- User experience
- International perspectives on apprenticeship
- Opportunities and challenges facing apprentices and apprenticeship

The data analysed produced some sub-themes which will also be examined within the headings presented above and the chapter is bookended with a summary of the research outlined.

5.2 Apprenticeship structure

While both models of apprenticeship at the macro level may have appeared similar, in that, the fundamental principle of both systems was to take an untrained, typically young person, and train that person in specific technical skills over approximately four years with the expectation of a definite career path being the return on investment of time. There were however, some substantial differences between the two versions of the modern Irish and Japanese apprenticeship models became evident in the structure and philosophy of each, despite the fact that both originated from the Guild system and were very similar according to Ben Zeev *et al* (2015) and Wolek (1994).

The Irish Standards Based Apprenticeship system, primarily, was a critical cog in the larger system of industrial information transfer and as such, industry played an important role in the form and function of Irish Apprenticeship development (Garavan *et al*, 1995) compared to the Traditional Japanese Apprenticeship model which was almost exclusively focused in the traditional crafts of Japan as outlined by Buntrock (1998). Industrial skills training in Japan was satisfied and regulated autonomously by industry using short term courses typically run '*in-house'* as deemed appropriate by each company. The separation of apprenticeship and industry can be traced back to the

Second World War (Sasaki, 2008) with the amalgamation of the vocational schools and Junior High schools, with little interest shown by key stakeholders such as the Trade Unions in vocational education as stated by Sasaki (2008). In this sense each system of apprenticeship, the Irish one and the Japanese system were reciprocal versions of each other in their primary function to society. The Irish system was strongly regulated and industry led with little interest or regard shown for the heritage skills or crafts according to Starrett (2013), considered redundant or obsolete. The Japanese apprenticeship system on the other hand, was almost exclusively focused on the traditional skills and crafts that essentially belonged to a bygone era, with industry showing little or no interest in the regulation of a formal apprenticeship system for vocational education.

The Japanese apprenticeship model also had a difference in core principles compared to most vocational training programmes. Japanese culture was reflected in the training methods, there was no distinct phases of progression, little value given to skills tests and no concern over pedagogical parity with higher level education, the Japanese apprenticeship system was formed around the philosophy of '*ba'* (Nonaka & Konno, 1998) where dedication by the apprentice was required to take external information and internalize it into tacit knowledge by being dedicated to the detail, repeated exercises and perseverance over challenges was demanded of the apprentice as outlined by Singleton (1989). The way each craft skill evolved into individual production process was a reflection of this obsessive attention to every minute detail and continuous incremental improvement. The result was unparalleled beauty and perfection in each object but created an Achilles heel as each trade was a critical part of a larger craft ecosystem and each craft relied on the process before it to survive. If a chain is only as strong as its weakest link, it can be a very fragile structure as that chain begins to decay.

5.2.1 The Irish apprenticeship structure

When asked about the apprenticeship structure, the Irish respondents were consistent at all levels from the apprentice, the educator to the employer on the Standards Based Apprenticeship structure, each interviewee described how many phases each trade had, entry requirements and exam standards that formed the constituent parts of the Irish Apprenticeship system. Each respondent could describe the seven phases, the requirement of an employer to begin the apprenticeship with the registration of the apprentice and the exams at each phase that required a pass mark to proceed into the next phase and then to qualify fully in the apprenticeship model known as the Standards Based Apprenticeship as outlined by Garavan (1995), Culliton (1992), and O'Connor

(2003) which had its roots in the Guild system formalised by a Charter granted by Prince, Lord John in 1192 according to Webb (1917).

The family connection and traditions were still evident with eight out of fifteen participants interviewed citing family connections as the reason for entering an apprenticeship. This familial tradition was traced through history by Thomas (1929) who said that it was common long before it was first recorded in 1230 A.D. and was mentioned by Plato according to Westermann (1914) although Ben Zeev (2015) stated that in Britain it existed but in low numbers. When asked about the off-the-job training element of apprenticeship, the response was positive with one apprentice stating that he would prefer longer off-the-job phases in the colleges with no respondent recommending a reduction in the length of the off-the-job phases, a sentiment echoed in the research findings of O'Hare (2013) and O'Connor (2003). This change was included in the 2013 review of apprenticeship in Ireland where the Phase 2 element was reduced by five weeks and the Phase 4 element was increased by one week to allow for the inclusion of seven new topics within the syllabus. In the former time served apprenticeship model, O'Connor (2003) revealed that an estimated 12.5% – 20% of apprentices eligible did not attend college for off-the-job training but Steedman (2010) showed that under the new system completion rates of the entire apprenticeship system were at 67% in 2010 which suggested that even with a robust structure, the number of apprentices who engaged with each step of the apprenticeship model successfully did not change dramatically.

One criticism of the Timed Served Apprenticeship model was the lack of regulation at each stage which undermined the quality of the pedagogy within the apprenticeship system demonstrated by the research of O'Connor (2003). This lack of an audited quality control system was revealed by those interviewed when asked about the quality assurance protocols as they experienced them. None of the crafts people or apprentices mentioned a visit by a Technical Advisor while on-the-job but all did say that successful completion of each phase including exams were required to progress to the next phase. Two interviewees did mention that individual jobs were recorded on *'job cards'* and were accessed by the employer to ensure certain tasks were performed. Both interviewees were in the motor trade. Quality assurance was an issue through the centuries, as Minns and Wallis (2013) highlighted that Master Craftsmen with a high reputation could charge a higher premium from potential apprentices. Tierney and Clarke (2007) stated that the implementation of quality assurance was not just a challenge in Ireland but across Europe. Donnelly (1994), O'Connor (2004) and Bates

(2011) highlighted the failing of effective quality control at all levels of the Standards Based Apprenticeship over seventeen years, right from its inception with a high proportion of employers returning a result based on assumption rather than an actual assessment. The concern of a credible quality assurance system within the Standards Based Apprenticeship was highlighted at EU level with the EU Commission in 2012 and again in 2014 citing the need for vocational educators to have some pedagogical training. Ryan (2000) reminded us that this concern existed in 1926 as highlighted in the Ingram Commission of Ireland's Vocational Education and Training.

The low literacy levels of entrants was also highlighted by one educator interviewed as being a factor in perceived low status of the craft area, this was also reflected in a report by the OECD (2010) which stated that some apprentices were unable to complete their training due to the low level of literacy and numeracy experienced, which only became apparent in the latter phases of the apprenticeship (O'Hare, 2013). The low entry requirements discouraged more academically able students and misled applicants which contributed to the declining perception of apprenticeship as highlighted by Steedman, (2005), Steedman, (2011), Dolphin & Lanning, (2011), Rauner *et al*, (2012) and Koudahl, (2010).

5.2.2 The Japanese apprenticeship structure

The freedom to choose a profession only became possible with the Meiji Restoration of 1868, up until then according to Sasaki (2008) apprenticeship was only granted by the Guilds. Of the eleven artisans interviewed, seven entered the craft because of a family connection with that craft. One Master stated that an apprentice who entered the trade with no family connection made much more progress than one who followed the family tradition, as the newcomer wanted to be in that specific trade. The modern structure of the apprenticeship in Japan was similar to the Guild system according to Nagata (2007) that also operated in Ireland until 1987 when the respective stakeholders in Ireland recognised the need to modernise and standardise vocational education and training as outlined by Canning (2007), no such review occurred in Japan. The Meiji Restoration also reduced the term length of apprenticeship from ten years to five years as outlined by Buntrock (1998) but with no concrete statistics available on vocational education in Japan according to Yan (2007), ultimately, the overall structure of an apprenticeship was dependent on the Master. Those who were interviewed revealed that varying terms of an apprenticeship were served with the average at three and a half years but some participants included the Japanese traditional '*hoko'* service period as part of their

apprenticeship term. According to the Japanese respondents, the traditional apprenticeship system was more diffused than it was in previous generations, with apprentices coming from training colleges or University with technical knowledge but little kinetic skill. This has led to friction between the Master and apprentice but it also reflected a change of mind-set in the view of many Masters, in that the current generation will not tolerate the rigorous and unrelenting training traditionally endured by an apprentice. Kito (2014) argued that due to the lack of empirical data on the practices, learning methods and outcomes, issues of quality control or at least great variance in standards may exist within the Japanese apprenticeship system. A measure of quality control was mentioned by another Master who said that is was the customer who checked the quality of the workmanship and related to the Master how the product could be improved. It was this feedback loop that was used to ensure high quality and constant improvement of a craft skill.

That is not to say that current Japanese apprentices did not want to learn as Dore and Sako (1998) outlined, the culture was very much that you never stopped learning and improving as one respondent said that he still considered himself and apprentice even after his Master had died some years ago. One clear change that had occurred in the opinion of those interviewed was the practice of '*Nusumi-geniko'* or '*stealing the knowledge'*, this common practice was seen as outdated by the Masters interviewed, who explained that they made a special effort to demonstrate key skills to the apprentices. This practice of '*stealing the knowledge'* was also practiced in Europe during the medieval period according to Wolek (1999) but became obsolete in favour of more structured learning methodologies.

5.2.3 Non-registration of apprentices

An aspect of apprenticeship that was unexpectedly revealed was the unofficial trial period of a potential apprentice by employers prior to registering the apprentice with the relevant state body in Ireland. Although there was an inbuilt period to accept or reject an apprentice within the Standards Based Apprenticeship model as outlined by one interviewee, employers still adopted their own trial period. This was explained by one employer who described this filtering process, where the potential apprentice was assessed over an undetermined trial period to see if that potential candidate has an interest in that craft and to assess if they would be suitable and productive employees, only then would that person be offered an apprenticeship contract. Breaches or reinterpretation of the apprenticeship terms and conditions occurred in the Guild system

as well with one in ten contracts being cancelled according to Minns and Wallis (2013), a trend that occurred throughout Europe up to recent times as stated by Steedman (2012).

It was clear that while the Irish apprenticeship system developed and became more regulated with the changing needs of industry to build and enhance the apprenticeship model, the Japanese model was left untended by Government according to Kito (2014) and it was only due to the craft areas being shored up by tradition that ensured the formality of an apprenticeship, in the Japanese sense, all be it unregulated and left to the discretion of the Master, a system that has become brittle and vulnerable to the unrelenting advance of technology in challenging economic times.

5.3 Cultural value of apprenticeship

The term '*Culture'* was much discussed and debated within anthropological studies according to Kroeber and Kluckohn (1952), Hofstede (1988), Geertz (1993) and Heine (2002) but culture or cultural relativism was a valid area of interest to this research as it generated some very interesting viewpoints from participants experienced in their respective systems of apprenticeships.

Cognisance of subliminal Western bias was exercised when examining and interpreting the Japanese research results, considering the vast difference in history and culture. Japan has evolved quite independently compared to Ireland which was strongly influenced by British and European trends in vocational education. Esyun *et al* (1985) cautioned researchers to avoid the typical Western misconceptions of Japan that have propagated through generations of Western research. This became very apparent to the researcher while in Japan and one example in particular highlighted this; while conducting interviews typically in the houses and workshops of Masters, Green Tea and sweet treats were frequently offered. One Master offered the translator and researcher grapes grown by the Master himself which were beautifully presented in a tiny dish with a tiny silver knife delicately housed in an exquisitely detailed sheath that the Master had also made. While the researcher gobbled up the delicious grapes he noticed that the translator removed the skin before eating each grape, the researcher asked why she did this and the Master laughed saying that Irish people do not think about detail. Each and every tiny detail in everything was important to the Japanese people and this was why each stage of production of a single item became a separate craft in Japan,

whereas in Ireland the focus was on broad areas such as '*Plumbing'* or '*Carpentry & Joinery'*.

5.3.1 Cultural value of apprenticeship in Ireland

Okamoto (2011) and Payne (2001) highlighted the fact that traditional knowledge transfer methods through the apprenticeship systems in Japan and in the West were in crisis. O'Connor (2004) revealed that in European cultures where the traditional apprenticeship model has been lost, only then was it fully valued and some countries were attempting to revive it. Of respondents interviewed in Ireland, thirteen out of fifteen interviewees believed that the status of apprenticeship had declined over the past three generations except for one apprentice who believed that it had increased and one educator who thought that was unchanged. Elbaum and Singh (1995) demonstrated how modern Degree qualifications usurped the role apprenticeships preformed in the late nineteenth and early twentieth century. Shown through the example of former apprenticeships models such as nursing, pharmacy and engineering which moved up the educational value chain and were now fully delivered in third level universities (Knight, 2012) and (Meer, 2007). When asked if they would recommend the apprenticeship route to the next generation, two-thirds or ten people out of fifteen said they would, with one participant saying no and four saying it would be a good route for someone who was unsuccessful in third level education. This sentiment was reported by McGuire (2016) in Ireland supported by McCrone (2014) who reported that 65% of teachers in the United Kingdom would rarely or never advise a student to take an apprenticeship if they had the grades required for University entry.

This lack of confidence in apprenticeship as a career path was reflected in the perceived value of a trade, measured most visibly in the wages earned by an apprentice or qualified tradesman. This meant that respondents believed that the value of apprenticeship was high during the economic boom but had suffered a reversal in esteem during the economic recession. A number of respondents commented that the craft area had become an educational wasteland, becoming the only choice for those who were not interested in learning, especially academic learning, creating a negative spiral of reduced standards, which in turn reduced the quality of the qualified craftspeople produced, reducing the general perception of the craft area in society. The employers and educators believed that more should have been done to educate society in the value of the craft area and the high level of skill achieved by the modern

apprentice, through events such as the World's Skills Competition. It was noted by one educator that the word '*craft'* has been appropriated by the Arts community, with those in the traditional craft area now designated the title of '*Tradesperson'* a comparatively pejorative term which was seen by the interviewee as an indication of the decline of vocational education in Irish society. McGuire (2016), Lee (1998), Castro (1992), Meer (2007), Knight (2012), Payne (2001) and Gorman (2008) offered examples of this trend in countries around the world where vocational education was seen as inferior, which created an involute path of continuous decline in entry levels, resulting in the lowest academic performers choosing apprenticeship, further devaluing apprenticeship in the eyes of the public according to Descy and Barabasch (2014). This resulted in apprenticeship offering little societal benefits other than to potentially provide an avenue to combat youth unemployment, with evidence from Brunello (2009) which showed it failed even in that respect.

5.3.2 Cultural value of apprenticeship in Japan

The Japanese view from the Masters was equally despondent, again many connected the value of apprenticeship with the ability to earn a sustainable income which was very difficult in modern Japan. When asked if the Masters would recommend the apprenticeship route to the next generation the majority (6) said no, three were unsure and two said they would. The reasons offered had parallels to the Irish experience in a deficit of knowledge or understanding by the general public or even by potential apprentices, which created a disconnect between the effort and skill required and the price of products received. This meant potential customers thought the price of items were too high and young people could not see the benefit of the traditional apprenticeship system, despite the efforts of the Japanese Government to promote traditional skills and crafts according to Pringle (2010) and Philip (1989) through initiatives such as '*Monozuri'* and the Densan Act of 1974 which introduced a set of criteria that craftspeople must meet before being awarded this specific quality assurance mark by the Government. An additional initiative to raise the value of the crafts was the designation of National Living Treasures to craftspeople who have achieved the highest skills in their respective craft area according to Philip (1989) and Sarashima (2013).

Another reason given by interviewees was the belief that the traditional apprenticeship model no longer existed, while most believed this was not a bad thing, it came at a cost and that cost was a reduction in the quality of the products made. When

asked if the status of apprenticeship had declined, the response was vague, with four respondents saying that it had while seven did not give a definitive answer either way but did discuss the negative economic situation impacting strongly in the past twenty years.

One aspect that did not feature strongly with the Irish interviews but was mentioned by the Japanese participants was the impact of technology, manufacturing and changing tastes of the Japanese people who were drifting towards Western styles in their houses and furniture. With modern fixtures and appliances making traditional methods and skills redundant, meaning an interaction was lost between the Artisan and the consumer as highlighted by Buntrock (1998). This bond was essential to ensure society was educated in the value and effort of the craft areas.

The declining value and negative attitude toward vocational education in both Ireland and Japan were apparent in other countries as well, such as the United Kingdom, where research by McCrone (2014) revealed that only one-quarter of parents viewed vocational education to be worthwhile.

5.4 User experience

Vocational education was often misunderstood according to Foster (1992) but Foster accepted the principle of vocational education was a contract of knowledge transfer specifically related to a profession. This development of competence occurred between an experienced or qualified person to someone who was learning, effectively in an apprenticeship even though it may not be recognised as such by a Government body as outlined by Astumbe (2014), Adams (1992), Hawley (2006) and Lauglo (1993). It was critical for that apprenticeship to be regulated by a statutory body if that training was to be credible in society as argued by Eichorst (2012) which was the case in Ireland but less so in Japan and in the United States of America according to Wonacott (1992). Apprenticeship was a popular option in the period from 1945 – 1980 in Britain as outlined by Vickerstaff (2003) and this was true in Ireland according to Ó Murchadha (2013) and in Austria, Germany and Switzerland as reported by Steedman (2005), however in each instance the lack of employers restricted the number of entrants.

5.4.1 The experience of the Irish apprentice

The responses from the Irish interviewees were generally very positive regarding their experience as an apprentice in what was called by Eichhorst (2012) the '*dual apprenticeship system*' or as Sfard (1998) termed it the '*acquisition metaphor'* and *participation metaphor'* in which education and industry worked in partnership to offer an apprentice a full vocational educational experience from information acquisition to knowledge participation, although it came at a high price for the taxpayer according to Hawley (2006). Most Irish interviewees saw apprenticeship primarily as the continuation of a family tradition or as a way to earn money straight after finishing second level education.

Research by O'Connor (2004) showed that of 165 apprentices surveyed, 94% stated that the Standards Based Apprenticeship was either '*OK', 'Good'* or *'Very Good'* and this was reinforced by the Irish respondents interviewed who appreciated the mix of off-the-job and on-the-job training with one apprentice saying the Phase 4 and Phase 6 elements delivered in an Institute of Technology should be longer, a sentiment reinforced by the research of Bates (2011), Ó Murchadha (2013), O'Hare (2013) and the Canadian Industrial Training Authority (2010) where apprentices felt a freedom to learn. The Phase 4 and Phase 6 elements of the Irish apprenticeship model was a dramatic change in '*habitus'* as described by Bourdieu (1990) and allowed the apprentice to experience a more learning centred community of practice described by Lave and Wenger (1991). The suggested increase in the off-the-job phases by interviewees offered the potential to reduce the perceptions raised by Gorman (2008) who's findings were in agreement with the educators interviewed, who believed that the image of the craft area was considerably devalued in society or seen as a '*dumping ground'* for those who were not interested in general academic learning.

The deliberate engagement of an apprentice was a critical element in the cognitive development of a craftsperson according to Tynjala (2008), Mullins (2005) and Crawford (2009), without which, the apprentice became merely a spectator, indifferent to whatever pedagogical model was employed. A number of recently qualified craftspeople found the theoretical knowledge very useful as they progressed into other areas of the craft not covered during on-the-job training, this finding was supported by a report by the EU Commission (2012) which stated that transferal skills were required in the new norm of unpredictable career paths. The participants did admit that they did not fully appreciate the usefulness of certain knowledge attained, such as roofing geometry at the time. When asked about receiving training or instruction from

their employers, all participants in Ireland responded positively saying that if they were doing something new or the needed to ask a question the employer or senior craftsperson would show them the correct technique, but that it was clear that when you were on the job it was primarily to work, and on average fifteen percent of their working week was dedicated to training. This element of situated learning context was important as it was reinforced when one apprentice showed another a specific skill or task, an important element often overlooked according to Unwin and Fuller (2002).

All the Irish craftspeople interviewed had participated in some type of state exam, even though it was not required by the older generation. The sense of achievement and validation was important to them and they said that it brought future benefits such as when applying for government work that they did not expect at the time. When asked about independent learning, employers, educators and apprentices all agreed that independent learning should occur, via the internet, additional courses and attending trade shows, although the apprentices interviewed admitted that they did not do any of these. This lack of higher level learning argued Gonczi and Hager (2010) was a major flaw in vocational education and restricted the apprenticeship model to the mere performance of fixed tasks. Many of the respondents expressed disappointment that basic business knowledge and skills were not part of the curriculum during their training period as many went on to become independent business people and they had to learn in the field how to manage money and customers, it was the main complaint of the apprenticeship model they trained under.

5.4.1.1 Difficult experiences of apprentices

An unexpected element of the apprentice experience that was revealed was the mention of abuse of apprentices by two interviewees. One participant mentioned how the work environment to a new apprentice in the first year of the apprenticeship can be '*rough'* and that '*getting abused or messed about'* was the accepted nature of the construction industry. A similar sentiment was outlined by an employer in blunt terms when he spoke of the training environment and the importance of putting a trustworthy person in charge of an apprentice;

> "*I do think you need to have good people watching them [Apprentices] and them working with good people. I think they [Apprentices] can be abused a bit as well so it is something you need to watch*." (Employer, Ireland)

This aspect of apprenticeship was not often openly discussed or commonly researched but equally, it was not new as apprentices in the mid-sixteenth century were flogged in the local Guildhall in the presence of other apprentices for crimes such as having long hair or stealing from the Master according to Ryan (2000), the apprenticeship experience could be equally difficult for Japanese apprentices as described by Brown (1989). Vickerstaff (2003) and Fuller and Unwin (2008) recorded how apprentices who had recently left school had to adjust to a dramatic change in environment where systemic physical bullying and verbal abuse were commonplace. Smith (2004) also highlighted that the transition from school to work was often chaotic and fractured in the experience of the young person. More mild complaints were outlined by O'Connor (2004) from apprentices who complained that they were often asked to do repetitive tasks not related to their craft which also echoed the experience of apprentices in Japan and in medieval Europe (Vickerstaff, 2003).

5.4.2 The experience of the Japanese apprentice

Among the Japanese artisans who had spent often their entire working like in the craft area, their experience was of a difficult apprenticeship where the apprentice was expected to '*steal the knowledge'* from the Master by watching almost subversively from a distance, a method labelled '*covert learning'* by Tynjala (2008) who criticised it. The apprentice had to practice on their own for hours after their days' work had been done as outlined by Okamoto (2011). This practice was no longer common in modern apprenticeship models operating in Western Europe but it was strongly rooted in Japanese culture and Zen practice where the aim of repeated exercises was design to internalise information thereby transforming it into tacit knowledge thus allowing for new knowledge to be created, this process was known as '*ba'* and was described in detail by Nonaka & Konno (1998) and Brown (1989). This experience was common in Europe when apprenticeships operated under the Guild system as outlined by Wolek (1999), Ben Zeev (2015) and Buntrock (1998). The Master Artisans acknowledged that this model was no longer appropriate in modern Japan and they stated that they made a conscious effort to deliberately instruct the apprentices on techniques. Although, there was a sense that this gift from the Master was not fully appreciated as it came without hardship to the apprentice. This important change of tradition in the dynamic between the Master and apprentice was taken for granted by modern apprentices in the view of the Masters interviewed. The view that craft skills and specialist knowledge had to be earned by an apprentice almost to prove that the apprentice was worthy of receiving this

gift had been diluted in modern times in the view of the Masters. This dilution of standards had been accelerated in their opinion with the decline in the status of the craft area and the introduction of training colleges, a view that was supported by Gorman (2004), Adams (1992) and Knight (2012) who believed that the lack of definition in vocational training led to confused results and outcomes.

One Master believed that the increase in the promotion of the craft areas and in particular of individual craftspeople had made artisans think they were artists when they were not. Tynjala (2008) and Faizal Amin Nur (2015) agreed that strong leadership with a structured system of varied learning both on-the-job and off-the-job were required to develop contextualised knowledge. The absence of off-the-job learning in the traditional Japanese apprenticeship was changing as well according to those interviewed, as the lack of employment or Masters available in a particular area required the increase in the number of training colleges which had a focus on technical knowledge and offered what Unwin and Fuller (2008) called an expansive apprenticeship experience. The view of those interviewed regarding the training colleges was mixed with one respondent saying that the quality was high, while another artisan said that graduates from a college may have more artistic senses than the Master which can be a source of conflict. A number of Master craftsmen believed that knowledge easily learned was soon forgotten and the net result of apprentices going from training college to training college was that it led to a decline of technical standards.

Odate (1984) and Brown (1989) highlighted the importance of attitude in the apprentice in Japanese culture and Nokes (2010) stated that cognitive engagement was equal to kinetic ability in importance of vocational pedagogy. The Japanese respondents all mentioned the importance of the Master to an apprentice and the central role the Master played in the success of an apprentice, a view also expressed by those interviewed in Ireland and through history as highlighted by Minns and Wallis (2013). This may be due to the fact that the Japanese apprenticeship system had no formal exams until 1958 or even a formal '*Master piece'* test as practiced under the Guild system. Despite the fact that the Vocational Training Law of 1958 established National Trade Skill Tests as recorded by Yan (2007), these tests were implemented by private sector bodies according to Nara (2010) and none of those interviewed performed these exams. They explained that only when your Master said you were ready to exhibit a piece were you considered to be or close to being independent, this was the Japanese equivalent of a qualification. Tynjala (2008) stated that the traditional method of '*stealing the knowledge'* was fading in importance and being replaced by the Japanese

model of the four stages of '*ba'* through SECI (Socialization, Externalization, Combination and Internalization) (Nonaka & Konno, 1998:42-45) or collaborative learning with clear evidence of this given in a study by Kito (2014).

The traditional apprenticeship in Japan was typically long, difficult and without pay or holidays with additional '*hoko'* or service years required after the training period had been completed. This aspect had changed greatly as well, with most Masters saying that when they had apprentices they would give them regular time off, a basic level of pay and generally the apprentice no longer lived with the Master's family meaning that there was no '*hoko'* service year/s expected. The view of the apprentices or recently qualified artisans was that it was difficult to find a Master to be apprentice to and then it was difficult to find the equipment and space required to become set up in that craft. The added complication of the artisan-wholesaler relationship meant that it was even more difficult for a newly qualified artisan to become established as the wholesaler dictated the volume and type of pieces required. This restricted potential creativity and limited the opportunity of a craftsperson to develop an individual style. The complaint of restrictedness was also registered by apprentices during the Guild period according to Ryan (2000) where appearance and conduct were tightly controlled.

5.5 International perspectives on apprenticeship

The Literature Review revealed that there was essentially three distinct types of vocational training as outlined by Eichhorst (2012) which were; school based, a mix of school and industry and industry based with any number of derivatives of these three around the world, Berlia (2010) described six variations of apprenticeship, however a more accurate description of the main variance in vocational education was given by Koudahl (2010) as;

1. The Market Model – Self-regulating as operated under the Guilds, still operated in Japan
2. The State Controlled Model – No interaction with industry
3. The Cooperative Model – The '*Dual System'* a mix of the first two which was adopted in Ireland.

5.5.1 The international perspective from Japan

The traditional Japanese '*Market Model'* apprenticeship was by default, evolving into a more dual apprenticeship model as used in Germany and Ireland albeit at a more *ad hoc* basis, as the number of Master Crafts people available declined. The use of training colleges alongside traditional apprenticeships in Japan referred to by Hawley (2006) as '*the third way'* was a reaction to population demographic changes as the older generation diminished there were fewer and fewer young people to replace them. This was mentioned by one craftsperson who found it difficult to find a Master to teach the skills, which meant that the graduate also had to set up a workshop sooner than would have been the case if she had found employment with a Master.

A decline in the number of young people taking up apprenticeships was recorded in the Republic of Korea by Rho and Lee (2008) where vocational education was seen as a second class education, a decline was also evidenced in Germany and Switzerland, while numbers had levelled off in Austria according to Steedman (2005). One training college visited by the researcher was set-up exclusively to train young people in the plastering techniques used on the local castle which was in the process of restoration as the local government found it difficult to get enough skilled plaster workers to progress the restoration. The view of the Masters interviewed about this new reality in Japanese apprenticeship was mixed with many in agreement with Lee (2009) who criticised this mix as poor quality and very expensive. Some Masters interviewed believed that the applicants from the training college had the knowledge but not the skill expected of an artisan, a view reinforced by Adams (1992), others thought it was a better system of training then the one they endured, but all admitted that it was one of the few solutions to a worsening situation in Japanese crafts. The decline in skilled artisans was highlighted by the Manpower (2012, 2015) surveys of 2012 and 2015 where the greatest area of skills shortage was in the trade areas and the country with the greatest shortage was Japan at 82%.

Design skills and external influences in general were mentioned by two separate Masters in Japan who had studied other vocational educational systems outside of Japan, international experience was not common among the participants interviewed. One Master who worked in Norway was impressed by the focus on design by craftspeople in Norway and believed that Japan should be more open to international influences and ideas of using existing skills in new ways, but admitted that this would not be allowed by the wholesalers in Japan. The other Master who studied Chinese and Korean crafts believed that each country should respect their own skills and traditions or

run the risk of becoming one global melting pot of resemblance where globalisation delivered bland uniformity to every country, indistinguishable from every other country.

5.5.2 The international perspective from Ireland

The Irish Standards Based Apprenticeship system had very strong European credentials having evolved from the British Guild time served apprenticeship model with repeated Governmental reviews evolving it into a variant of the German *'dual system'* which was practiced in many countries including Austria, Denmark, Switzerland, Egypt, Benin and Mali according to Hawley (2006), with industry and state bodies working in partnership to deliver a standards based apprenticeship programme. While the merits of this system were recognised, so too were the costs incurred as highlighted by Lee (2009), with Steedman (2011) offering just one example of an apprenticeship system that was cost neutral due to the insistence of high entry standards, that being the Swiss model. The high costs generated by the industry led apprenticeship model was a weakness of the system in a country emerging from a deep economic crisis and an alternative to the Standards Based model was investigated by the Irish Government through the Review Group (2013). Many of those interviewed were aware of our adoption of the German system, however the educational participants were most aware of this fact but also of the high cost this system to the exchequer and cited this as a concern as some of the proposed changes to the current apprenticeship system was under discussion.

The experience of the apprentices interviewed was universally positive and the recently qualified tradespeople who had travelled abroad with their skills reported a high level of respect being shown to the Irish tradespeople working in those countries with countries like Canada actively recruiting qualified tradespeople to work in their country. The Manpower (2012, 2015) survey of 2012 and 2015 showed Ireland was at the lowest end of the skills needs spectrum at 2% in 2012 and 11% in 2015. The recruitment of tradespeople to other countries was seen by participants interviewed as validation of the Irish Standards Based Apprenticeship model in general. An interviewee who was a qualified carpenter and who worked in Australia remarked how little appreciation was given to tradespeople in Ireland compared to Australia where they have a National Carpenter's Day (21st of November). Another qualified tradesman who worked in Australia thought that the one day a week off-the-job spent in a training centre was a better system then the current Irish system of blocks spent in a training centre which was interesting as the one day a week structure was abandoned with the introduction of the Standard Based Apprenticeship in 1993. One educator believed that

the German system of streaming young people into vocational subjects resulted in a craftsperson with higher level of specific kinetic skills but was less adaptable in general.

Adaptability, skills transfer and flexibility were becoming more and more important as technology encroached into traditional manual skills. This view was reinforced by the EU Commission (2012) in a report which stated that more transferal skills such as critical thinking, initiative, collaboration and problem solving were required in an era of unguaranteed career paths. The participation and relative success of Irish apprentices at the World Skills competition in which seventy five member countries from around the world competed in various crafts biannually was mentioned by the educators in particular as a measure of the high standards within the Irish apprenticeship system. The content volume of the Irish apprenticeship model compared to other countries was discussed by those who had knowledge of other systems and it was their view that the detail of the Irish apprenticeship syllabus was a significant factor in the educational value of the system compared to other countries.

The low status of the apprenticeship model in society was an issue of concern of those interviewed but it was a perception experienced in many countries including Germany, Switzerland and Austria (Steedman, 2005), (Smith, 2013), the United Kingdom, (Fuller and Unwin, 2007), (Payne, 2001), (Winter, 1995), in the United States of America (Hamilton, 2000), (Elbaum and Singh, 1995), and in the Republic of Korea (Na, 2009), (Rho and Lee, 2008), while the status of vocational education was high in developing countries such as the People's Republic of China (Yan, 2007), Nigeria (Ogwo, 2014) and Central and South America according to Eichhorst (2012), validating the view of the World Bank as outlined by Foster (1992) that economies which cannot develop quality vocational training should focus on general academic education which offered higher potential returns for economic development.

5.6 Opportunities and challenges facing apprentices and apprenticeship

The views of interviewees in both countries revealed that both apprenticeship systems were facing difficult circumstances, each faced great challenges from different forces which potentially produced differing avenues and opportunities to change and improve in order to keep the apprenticeship model economically viable and relevant to society.

5.6.1 The economic influences on the Japanese apprenticeship model

Henrichsen (2004), Brown (1989) and Philip (1989) outlined how the interest in the craft area in Japan had slowly declined and many traditional trades and crafts were facing extinction. The view of one Master craftsman was that it depended entirely on the area you were in and the Manpower surveys in 2012 and in 2015 demonstrated that Japan had the highest shortage of skilled tradespeople in the world. Schleicher (2011) also showed that even during the financial crisis, Japanese employers among others, reported a difficulty in finding workers with the appropriate skills. Tahara-Stubbs (2014) highlighted the severe labour shortage due to the reconstruction work in the North-East of Japan following the earthquake in 2011 and the 2020 Tokyo Olympics, forcing the Japanese Government to recruit workers from abroad, which was not popular with the Japanese population. While the shortage of skills were almost exclusively in construction. The argument for the support of the craft industry was more difficult to justify with a decline in turnover in 1983 of ¥540 Billion to ¥104 Billion in 2012, a decline of 80% which did not suggest a positive future. This decline was explained by Buntrock (1998) who outlined the conditions required for a vibrant and sustainable craft culture which no longer existed in Japan

Okamoto (2011) echoed the sentiments expressed by the Japanese artisans interviewed on the three main issues in the relationship between Master and apprentice that challenged the very existence of the Japanese traditional apprenticeship model;

1. The rise of the Internet allowing research and removing the reliance on the knowledge of the Maser.
2. The breakdown of the master-student relationship as the cultural tradition of a strong hierarchical paternal relationship declines in society.
3. The adverse effect of universal individual value where the wise and ignorant were all equal.

The fragmentation of training in modern Japan with the reintroduction of Training colleges, University degrees in craft areas and the Internet had changed the dynamic of the Master/apprentice role according to those interviewed as now there was more than one source from which to '*steal the knowledge'*. This pointed to a lack of formal structure or designed instruction outlined by Gagné *et al* (1992) and which McCrone (2014) highlighted was one of three principles leading to a decline in the perception of vocational education generally, the other two were the lack of high quality vocational qualifications and addressing the entrenched views of the superiority of academic

routes. Of those Masters interviewed, they related how apprentices came and went more frequently for reasons such as; the apprentices found the work schedule too hard, or the work too difficult or the conditions too bleak to stay the course and complete an apprenticeship with one Master. The additional complication in this changing relationship between the Master and apprentice who has been to a training college or University before joining a Master was highlighted by one participant who gave an example of a student who knew more about design then the Master and this was a source of friction within the relationship which has a negative impact on the career prospects of the apprentice, but it also demonstrated the resistance to change in the delivery of tacit knowledge methodologies.

The traditional apprenticeship was too severe in the view of those interviewed and modern apprentices would not be able to cope under such conditions. Society has changed in Japan, from the rigorous paternal structure to the mass democracy as highlighted by Okamoto (2011) which meant apprentices challenging a Master or expecting to be treated more equally than traditional apprentices would dare to expect in the past. This contrast of old and new philosophies was outlined by one interviewee who described his apprenticeship in the 1950's in stark terms that today would be described as child abuse, but in his generation would have been the norm. The progress in equality was a positive step but the Master artisans found the challenge to their authority difficult to deal with. The influence in modern culture of information technology was seen as a positive by one participant but he cautioned that the apprentice should first master the basic skills from a Master and only then seek out other sources of information and ideas. That patience was not evident in the current generation of apprentices in his view. This point was accepted by another Master who said that speed was a very important factor now and Masters needed to be speedy in their teaching as well.

The change in the culture of Japan and the trends in society was also mentioned by a number of Masters, they believed that Japan had moved toward a more disposable consumer society that valued convenience over tradition, so the use of plastic bowls had replaced lacquerware as plastic was dishwasher friendly but traditional lacquerware was not. This reflected the move by the Japanese government to promote design within the craft area, a move reflected throughout Asia according to Na (2010) and Chuang (2010), where vocational education included creativity along with science and technology. The prolonged economic stagnation in Japan also meant there were less customers as those interviewed categorised their products as luxury items making them a difficult sell in

straightened times. The opportunity to export abroad was also mentioned as the lacquer ware was designed specifically for the climate and humidity of Japan and may warp or crack in other countries. Many Master artisans were also a '*one-man'* operation and lacked the capital or knowledge to export abroad. Only two Masters interviewed had websites for their products but neither of these were in English despite the support offered by the Association for the Promotional of Traditional Craft Industries in Japan. The Japanese Government had worked hard to promote Japanese crafts abroad by funding individual artisans to travel to exhibitions in capital cities around the world as described by most of the masters interviewed. There was no evidence of any follow up by the artisans from their travels as a potential business avenues of opportunity, this was not surprising as none had any formal business training or skills with each artisan dealing exclusively with a Wholesaler who decided what sold and what did not.

5.6.2 The economic influences on the Irish apprenticeship model

The economic crisis in Ireland served to highlight a key flaw in the industry led Standards Based Apprenticeship model. It was the first requirement to have a signed apprenticeship contract with an employer for four years before the apprenticeship could begin in an economy where one in seven people of the working population were employed in the construction industry in 2007. The employment contract was changed to an apprenticeship contract in the 2013 review of the Irish apprenticeship model but it only applied to new entrants (O'Mahony, 2015). This left many apprentices redundant midway through their apprenticeship with nowhere to go and not being able to progress their vocational education or training. One apprentice interviewed began his apprenticeship in 2006 and after nine years was in phase six of his apprenticeship; this should normally have only taken three years. The length of time taken by this participant was not unusual as the construction industry dominated the economic success of Ireland for almost a decade as outlined by Kis (2010) in a report commissioned by the OECD. The number of apprentices dropped from 8,461 in 2006 to 1,204 in 2010 according to the figures recorded by the then state training agency FÁS (2010). The financial difficulties created by the economic downturn also put the high cost (€11,715 per apprentice per annum or €35,290 for the term of the apprenticeship) of the '*dual-system'* in the spotlight and a review of the apprenticeship system was commissioned by the then Minister of Education and Skills, Ruairi Quinn T.D., on May 19th, 2013 which created the Apprenticeship Council to review all apprenticeships in Ireland in consultation with individuals and stakeholders. The EU Commission (2012)

demonstrated that well established dual system apprenticeships offered a return on investment of training to companies over the long term as outlined by Wolter (2011) and Ryan (2000) with the Swiss example showing a cost neutral model, having higher entry levels according to Steedman (2011). The call to increase the entry requirements was included by the Education and Training Board of Ireland (2013) review of the Standards Based Apprenticeship model but had not been implemented. Clifford (2011) and McIntosh (2007) showed a positive financial return to employers through reduced induction costs, recruitment costs and greater productivity of employees who came from apprenticeships. Mouzakitis (2010) demonstrated how vocational education could be a key to the economic development of a nation. A comparison of unit delivery costs by Fitzmaurice (2015) of engineering students with apprentices in Institutes of Technology showed that apprentices cost 54% less than engineering students to educate.
To remain relevant, the apprenticeship model needed to adapt and develop transversal skills as mentioned by the majority of interviewees, especially if the apprentice expected to travel abroad. Kelly (2001) supported this view stating that modern economies required individuals who were flexible, mobile and adaptable to be effective. Fitzenberger (2015) also showed that apprentices who changed roles within a company received a wage increase of 12%.

The potential employment offered by the rich heritage building stock in Ireland was mentioned by one interviewee as offering huge potential employment to apprentices and that new trades were required in this area, a view supported by the Heritage Council of Ireland (2013) who called for trades in five new areas to be created as outlined by Starrett (2013). The Service sector and Information Technology sector were other areas that required new apprenticeships according to Fitzmaurice (2015), the first of the 25 new apprenticeships developed in 2016 (O'Mahony, 2015) (See Appendix F) would be in line with existing trades operating in Northern Europe as outlined by the Education and Training Board of Ireland (2013).

The progression pathway into higher education was far from clear to those interviewed who were not working in education, a view that was repeated by the Education and Training Board of Ireland (2013) in their proposal which called for greater interconnectivity between apprenticeship and higher education. This was reflected in some apprenticeships such as Chef to have a number of levels up to Level 9 on the qualifications framework but there was no visible pathway for trades who finished at Level 6 to progress easily into existing Level 7 Degree programmes. Potentially, the models of Apprenticeship in Creative Arts as outlined by Clifford

(2011) may also be a potential path of development for apprenticeship in Ireland with the introduction of a Higher Apprenticeship in Accountancy, placed at Level 6 on the qualifications framework (O'Mahony, 2015) suggesting that Degree Apprenticeships as described by the University Vocational Awards Council (2015) may be adopted by the Irish system in the future.

5.7 Summary of chapter

It can be deduced from the evidence presented, that both systems of apprenticeship were in a time of change and it was not clear how each will change or deal with the change thrust upon them. The proactive approach in the Irish model will ensure relevancy in the eyes of industry but it was not clear how the latest changes in apprenticeship will be viewed by its users or by society into the future. The recognition of the crisis in apprenticeship in Japan was clear from the testimony of the Master artisans and the industry figures but without a clear strategy from industry, Government and other relevant stakeholders it was not clear what the future holds for the particular Japanese sense of purity in the craft skills of Japan. In the next chapter, conclusions will be drawn from the inquiry conducted into the common fundamental pillars of an apprenticeship model researched in this thesis with recommendations for a potential new model of apprenticeship as well as further areas of future research.

Chapter 6 Conclusion

6.1 Introduction

The Irish Standards Based Apprenticeship system was frequently lauded nationally and internationally as the structure and syllabus were considered to be of a high standard and compared well with similar European systems (Steedman, 2010:28) including the German model (Nyhan, 2013:2). Paradoxically, it was seen by Irish society generally and by those who were engaged in apprenticeship as producing poor quality graduates and as a career path for an individual with little educational ability or academic aptitude (O'Connor, 2004:37, Descy & Barabasch, 2014:22) resulting in a decline in the status of the craft area in the view of those interviewed. The study of the Japanese apprenticeship system showed that it had no definitive structure but produced products of the highest possible quality and yet it too suffered a negative perception (Brown, 1989:30). The research conducted in this thesis set out to fully understand this contradiction and assess the fundamental failings and strengths of the Irish Standards Based Apprenticeship system.

To frame and contrast the Irish apprenticeship paradigm, a comparison was conducted with a culture outside of Europe and quite different to any Western tradition in the expectation that a more objective perspective would be produced for analysis. Japan was selected as the exemplar to offer this contrast as it enjoyed an unparalleled reputation for the highest quality of craftsmanship and could proclaim a most distinguished heritage within the craft skills community. The research conducted, revealed that both systems faced serious challenges and both required change to remain relevant in order to offer a sustainable and credible career into the future. This chapter outlines the three fundamental elements required for a credible and sustainable apprenticeship model followed by a new potential model of apprenticeship as well as some suggested areas of possible future research in the area of vocational education and training. The researcher is not making a statement of abdication on the part of those stakeholders responsible for the governance of the apprenticeship model, it is a summary reflection on the constituent parts based on existing research and the experience of participants which generated recommendations to potentially elevate the standard and status of apprenticeship in both countries for the benefit of all the stakeholders involved in apprenticeship.

6.2 Main findings

Objective reflection on the system of apprenticeship in both Ireland and Japan from the historical evolution to the potential paths available into the future generated some key findings. These findings initially highlighted the broad fundamental deficits of each system through a comparison of both, however, a meta-analysis of apprenticeship systems in many countries with differing cultures revealed that three key pillars were required for a credible and sustainable apprenticeship in the long term. The review of the apprenticeship model that was developed during the period of the Guilds reinforced the evidence of the three key conditions that established the master crafts people as the enfranchised aristocracy of a society in the twelfth century (Thomas, 1929:2). The three key elements of a successful apprenticeship that can potentially endure for generations are examined separately to form a comprehensive model of vocational education in the craft area.

6.2.1 Social partnership

The cooperative partnership model of administration, regulation and development of apprenticeship reflects the various constituent elements that contribute to a successful model of apprenticeship. Each stakeholder carries and regulates an area of responsibility that contribute to the sustainability of the apprenticeship model. The choice of employer was critical and this alone would determine if the apprenticeship was positive and educational or difficult and menial (Minns & Wallis, 2013:343, Okamoto, 2011:161, O'Connor, 2004:49). The employer is also best placed to provide current information on what new topics are required in the apprenticeship syllabus to remain valid. A rigid structure can help prevent against the decay of competence and the decline in skill levels during uncertain economic times (Steedman, 2012:7, 22). A deliberate designed instructional pedagogical structure (Gagné *et al*, 1992:3-4) to include all aspect of the habitus of apprenticeship taking it from an acquisition based vocational training curriculum and evolving it into a participatory vocational educational curriculum (Sfard, 1998:5,6) that is logical and progressive through all the phases to better equip an apprentice to participate fully in their identification within their community of practice (Wenger, 2008:5). This structure needs to be reinforced by statutory laws based on the recommendations of the educational experts and enacted by the national Government, with reviews conducted as appropriate. The Irish system of apprenticeship had a strong reputation abroad because the Government along with the Social Partners created a

formal and recognisable pedagogical scaffolding that supported the various trades (Culliton, 1992:89, Hawley, 2006:13). The Japanese apprenticeship in the traditional craft area was being eroded as there was no statutory standards or regulations to replace the Master, this was accelerated by a static economy and a declining population (Okamoto, 2011:158). This highlighted the importance of the educational professionals who are responsible for the development of a valid, standardized and deliverable syllabus which includes the quality assurance protocols that ensure the credibility of any apprenticeship.

6.2.2 Independent quality assurance

There was a concern over the quality assurance of the apprentice model from the time of the Guilds according to Wolek *inter alia* (Wolek, 1999:405, Brockmoller, 2008:68) up to the present day (DFEi, 2013:14, McGuinness *et al*, 2014:17) with the EU Commission (EU Commission, 2011:11) and the World Bank (Foster, 1992:152) raising concerns over low quality apprenticeship models in Ireland and across the world. The Japanese system of apprenticeship in the traditional craft area had a high value on the quality of the products produced and in structure was identical to the Guild system that operated in Europe during the Middle Ages in terms of the recruitment, quality assurance, experience and sales of their crafts and skills (Wolek, 1999:410, Vickerstaff, 2003:276-280, Nagata, 2007:37-43, Ben Zeev *et al*, 2015:6). This high level of value, placed on the quality of the craftsmanship, has not prevented the decline in the number of new applicants entering the craft area or the decline in the sales of their goods, demonstrating that quality alone will not sustain the craft area. O'Connor (2003) and Donnelly (1994) both highlighted in detail the failure or absence of independent quality assurance in the Irish Standards Based Apprenticeship model with little evidence that much had changed with the latest review in 2013 (O'Connor, 2003:171-186, Donnelly, 1994:18). The experience of the apprentice and the lack of pedagogical quality assurance in both Japan and in Ireland was unchanged, from the early days of apprenticeship right up to the present day (Steedman, 2012:7, Vickerstaff, 2003:277-279, Saaki, 2008:63-65, Fuller & Unwin, 2008:12), contributing to a decline of credibility in society of the value and knowledge levels of the average applicant entering the apprenticeship and creating the perception that apprenticeship was a dumping ground for low academic achieving individuals.

6.2.3 Societal value

The status of the craft area has been in decline in Europe since its zenith in the twelfth century, when higher education was less developed and crafts people were considered the '*enfranchised aristocracy of the City*' (Thomas, 1929:2). The status of the craft area endured in Japan for a lot longer but that too began to decline from the era known as the '*golden age of crafts'* from the sixteenth century to the mid-nineteenth century (Buntrock, 1998:72), with the deconstruction of the class system under the Meiji Restoration in 1868 - 1912 (Buntrock, 1998:72), which contributed to the collapse of the Guilds (Sasaki, 2008). Apprenticeships around the world have experienced a decline in support by society (Steedman, 2005:21) as the long term negative trend persists. Remaining relevant to society is essential to the endurance of any area of education and technology is a critical element of every trade and craft, from designs done on computers, to C.N.C., low-cost robotics, 3D printing, sensors or Information Technology systems of information management and systems updates, no apprenticeship can afford to ignore technology and this needs to be better reflected in modern apprenticeships (Na, 2010:2, Chuang & Tsai, 2010:74). The need to become technologically developed was the impetus of vocational education in Japan in 1865 and needs to be reintroduced into modern vocational education.

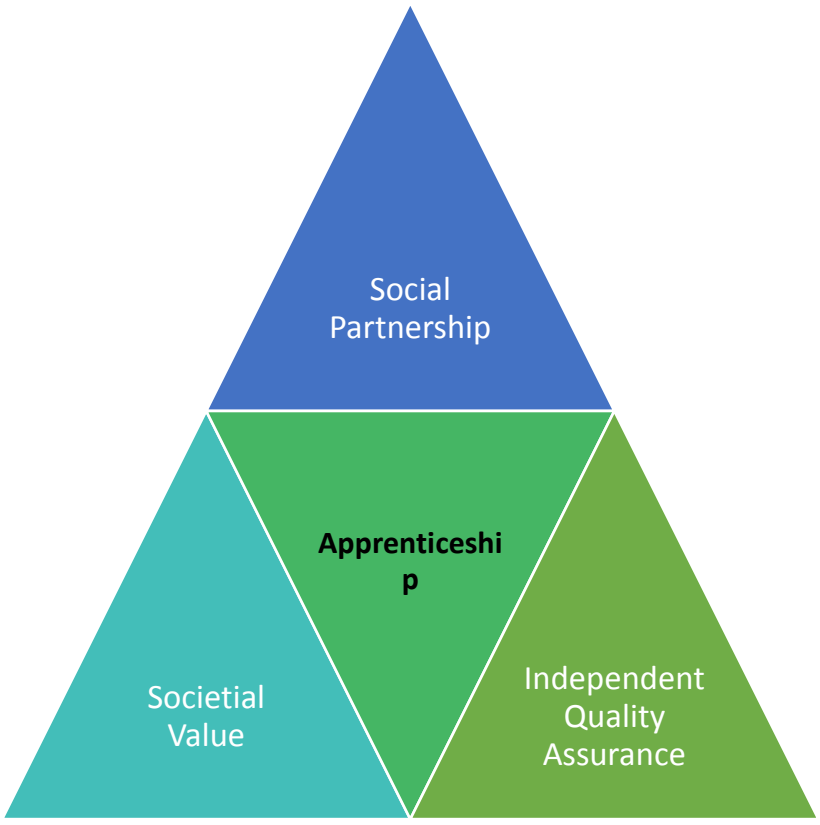

Figure 6.1: Matrix Pyramid of a Sustainable Apprenticeship

Greater research is required to fully identify key principles and attitudes of society toward apprenticeship, such as those seen in European apprenticeship systems as outlined by Descy and Barabash, (2014), that would be required to restore the status and quality of apprenticeship to society into the future (Descy & Barabash, 2014:8). These broad principles could be applied to any form of apprenticeship but the study of the Japanese and Irish apprenticeship systems offered some detailed recommendations which could positively impact on the quality and status of the apprenticeship if implemented or exceeded.

6.3 Recommendations

The roles and functions of vocational education was subject to socio-political trends and crises and it would be difficult to offer conditions for a sustainable and credible craft education framework that could endure without revision. However, with a detailed focus on the Standards Based Apprenticeship primarily but applicable to all variants of apprenticeship, the following recommendations that develop on the three main areas outlined in the main findings are presented in more detail.

Cooperative Governance

1. A strong relationship and regular cooperation between the social partners is required to maintain the relevance of the apprenticeship model in broad terms and avoid a skill mismatch or the boom and bust cycles of employment of skilled crafts people (O'Hare, 2013:14, McGuire, 2016:3, Foster, 1992:150, EU Commission, 2012:3, Garavan, 2011:8, Baartman, 2011:130).
2. The need to contain and regulate the quantity and standards of trades in each area is essential to prevent the dilution of the apprenticeship status and core purpose as trends change with economic cycles (Smith *et al*, 2013:8, Koudhal, 2010:1903, Fitzmaurice, 2015:40-47).
3. A clear and visible occupation identity is critical in attracting young people into apprenticeship careers while also giving qualified personnel a clear role in their respective area that would offer a direct reference in status to other professions (Odate, 1984:viii, Unwin & Fuller, 2004:95, Wolek, 1999:403, Minns & Wallis, 2013:343, Thomas, 1929:2).

4. A clear and standardized structure to the curriculum should be developed to reflect the various aspects of a craft skill that range in topics from conservation practices to using the latest technology. This would be reflected in the syllabus, beginning with foundation skills and historical methods moving into current best practice and regulation and ending with a focus on near future technological skills and knowledge (McGuinness *et al*, 2014:9, O'Connor & Mullins, 2004:8, McElliot, 1996:113, Sasaki, 2008:63-65). A definite line of progression in the pedagogy of the apprenticeship model is required, taking the apprentice from an acquisition model of information transfer progressively to a participatory knowledge creation mode of learning (Sfard, 1998:5,6) and ensuring that a professional and encouraging *habitus* exists in the varying communities of practice entered into by the apprentice in both on-the-job and off-the-job phases (Lave & Wenger, 1991:98).

Independent credible quality assurance

5. The increase in entry requirements of apprenticeship has proven cost and societal benefits as outlined by Steedman (2011), to raise the standards and cost efficiencies of the apprenticeship model to the benefit of the employer and to the exchequer (Steedman, 2011:103, Steedman, 2005:13, DFEi, 2013:16).
6. The dilution of the apprenticeship in the United Kingdom (Payne *et al*, 2001:5) and the confusion of the language and terms used around apprenticeship (Unwin & Fuller, 2007:21) suggests that a minimum term length of apprenticeship 3-4 years and a clear purpose of intent are required to deliver a productive syllabus and allow for the transfer of highly specialized technical practices within a community of practice (Horiuchi, 2008:277).
7. The criticism of the failure in standards within the Standards Based Apprenticeship model demonstrates that a rigorous and independent quality assurance system at each stage of the apprenticeship both on-the-job and off-the-job is essential to maintain credibility with industry and society (O'Connor, 2004:37, Fitzenberger *et al*, 2015:140, Descy & Barabasch, 2014:22, Lee, 1998:2-6, Rauner *et al*, 2012:12, Adams *et al*, 1992:134).
8. Apprenticeship is a combination of education and training which suggests that all educators involved in the delivery of apprenticeship should have a third level qualification in educational theory and practice as well as a craft qualification to safeguard the pedagogical standards and establishing direct equivalence with

liberal educational methods and standards (O'Hare, 2013:10, McGuinness *et al*, 2014:17, Castro, 1992:147, EU Commission, 2012:11, Unwin, 2014:17, Tierney & Clarke, 2007:138).

Societal value and education

9. There is an urgent imperative to introduce a technological focus which would reflect the rapid and constant change of innovations and practices occurring in the craft areas in line with the changing demands of skills required in the medium to low skilled sectors (Aring, 2014:54, Mouzakitis, 2010:3916, Chuang & Tsai, 2010:74, ETBI, 2013:6-16).
10. There is a clear need to highlight the equivalence or educational pathway from apprenticeship into higher education introduced by the new apprenticeships. This would include potentially developing higher level apprenticeships, such as the Degree Apprenticeship which were developed in the United Kingdom (University Vocational Awards Council, 2015:2-3) which are recognised at an appropriate level on the qualifications framework that could offer a clear pathway of progression through the levels in education from apprenticeship to PhD (Gorman *et al*, 2008:393, Kahyarara & Teal, 2008:2224, Allais *et al*, 2009:15).
11. A better relationship between the Arts community and the industrial crafts areas is required to combine the best elements of the apprenticeship model and the arts pedagogical systems so that the '*spirit'* of craft heritage is not lost as outlined by one interviewee in Japan. This may also help in the perception of gentrification of the apprenticeship model if delivered in a Creative Apprenticeship as developed in the United Kingdom (Clifford *et al*, 2011:9).

It may be argued that some of these conditions already exist or are in the process of being developed which is a positive advance in the Standards Based Apprenticeship, however recent trends in the Irish apprenticeship model where the pass mark was reduced suggests that the key pillars that support the Standards Based Apprenticeship are not fully appreciated and re-evaluation is critical to the enduring credibility of vocational education in society.

6.3.1 Apprenticeship in Ireland

The partnership model in the development of apprenticeship in Ireland has worked well (O'Connor & Mullins, 2004:8) in producing a good balance of servicing the needs of industry while maintaining a high level of theoretical knowledge that covered areas such as technology, conservation, building regulations and geometry to highlight a few, but for all that, there was an issue with the public perception regarding the status of the craft area which brought into question the long term viability of the apprenticeship model. Each stakeholder involved in the delivery of apprenticeship has a duty to guard against irrelevance as the demographics in most developed countries move towards a more technology based service economy.

The cultural value of the historical building stock of any country is something to be treasured (Ecorys, 2010:7-8) and maintained for future generations; 11% of the buildings in Ireland are over one hundred years old and need traditional craft skills in lead-work, plasterwork, brickwork *inter alia*, conservation skills that will increase in importance and scarcity, a preventative plan is the obligation of the current custodians of this common architectural heritage. A continuous supply of craftspeople should be trained and employed by the state to ensure these buildings of historical significance are secure for future generations (Starrett, 2013:3). The cost of having a reserve battalion of craftspeople would be substantial but these costs can be off-set somewhat by the revenue generated from the tourism industry. A *'knowledge bank'* or national archive of the techniques and practices used could be recorded and detailed by government institutes such as the National Archive and made available to the public who may be interested in using such techniques in smaller domestic projects or restorations. This could have the benefit of raising the public appreciation of traditional skills and improve the aesthetics of vernacular architecture on a national scale. The current cost and difficulty in securing skilled people with the appropriate knowledge of heritage building practices is a barrier to people who would otherwise wish to restore or preserve a historic building.

Quality assurance needs to move from a subjective model where a teacher, instructor or employer corrects the work of their own class or employee (O'Connor, 2004:48) to an objective model where all exam material and on-site tasks are corrected anonymously and independently (Dolphin & Lanning, 2011:127-128, Descy & Barabasch, 2014:16, Rauner *et al*, 2012:5). This would address the credibility of apprenticeship education and training in the eyes of society (Bates, 2011:68, ETUC, 2012:9, McGuinness, 2014:43, Brunello, 2009:21).

The former employer contract with the apprentice was changed to an '*Apprenticeship Contract'*, similar to the system operated in Germany (Steedman, 2011:96). This should allow an apprentice to change employers if required and remove the obligation on employers to offer a continuous four year employment contract to an apprentice who has no real experience in the life of a tradesperson (Eichhorst *et al*, 2012:24). The additional benefits should be that an apprentice would gain valuable experience in different areas of a particular trade without losing time recorded in their training. It could also give more flexibility to the current labour market and may even improve standards for apprentices, as employers would be incentivised by market forces to retain the best apprentices (Lewis, 2013:4, Aring, 2014:2). A potentially regressive element to the apprenticeship contract that has been re-introduced was the obligation on the employer to pay the apprentice while attending off-the-job training (O'Mahony, 2015:10), this was a factor in the previous '*Time Served'* version of apprenticeship in Ireland that reduced engagement by industry with the educational elements of the apprenticeship model (O'Connor, 2003:33).

Awareness of the dividends to society derived from the skills of a highly trained craft community is required to help restore the status and standard of vocational education today (Starrett, 2013:2, UNESCO, 2003:2). A better educated society would encourage higher standards and increase diversity in the craft area. These recommendations offer no guarantee of a sustainable craft eco-culture as evidenced in both Germany and Japan which have suffered a decline in the number of new entrants into the craft area, but it would at least inform the public what a qualified apprentice could do and the standards to expect from craftspeople in all areas.

A clear identity of apprenticeship is required, as clear professional character will give a young person a definite career path to follow as demonstrated during the period of the Guilds (Wolek, 1999:403, Minns & Wallis, 2013:338, 343, Thomas, 1929:2, 37). That career path can begin with apprenticeship and culminate in a PhD. A more robust definition of the pedagogical aims and theories to be designed (Gagné *et al*, 1992:3-4) into the fabric of the entire apprenticeship model in a systemised pathway that would allow for inclusivity of low academic achievers while transforming them from information acquirers into knowledge participants (Sfard, 1998:5,6) without degrading the status or standard of the trade.

Any potential new apprenticeship would have to meet the criteria set out above. Newly proposed apprenticeships should be assessed to ascertain if it required a four year term,

if the proposed new apprenticeship failed to be awarded the designation of apprenticeship then it could be more appropriately categorized as a traineeship to prevent the devaluing of the apprenticeship model (Gopaul, 2013:6) without creating educational barriers leading to lower levels of unemployment within the younger generation (Tamesberger, 2015:29).

Proposed Standards Based Apprenticeship progression		
Level on the Qualification Framework		
Level 4-5	Level 6	Level 7-8
Title of learning paradigm		
Traineeship in Carpentry Traineeship in Joinery	Apprenticeship in Carpentry & Joinery	Degree Apprenticeship in Carpentry & Joinery
Curriculum Focus		
Safety in the Workplace	Heritage	Communication
Conversion Methods	Current Practices	Management
Machine Practice	Technology in C&J	Business

Table 6.1: Potential Progression of Apprenticeship Qualifications

The distinction of the different streams within the apprenticeship model would reflect the core purpose of each trade to master the work context (Steedman, 2012:8), with each variant servicing a particular segment of industry. The term length of all apprentices should not be less than four years and the minimum standard of entry should be assessed through an entrance exam, portfolio and interview of prospective apprentices to ensure a clear and independent standard within apprenticeship.

Potential variant streams of the Standards Based Apprenticeship		
Heritage Apprenticeship	**Technical Apprenticeship**	**Service Apprenticeship**
Carpentry (Roofing)	Electrician	Hospitality Management
Joinery	Plumber	Hairdressing
Stonemason	Aircraft Mechanic	Childcare
Plasterer	Music Production	Equestrian Instructor
Ceramics	Motor Mechanic	Animal Care and Grooming
Glassware	IT Infrastructure Development	Customer Service
Shipwright (Boat-builder)	Telecommunications Service	Medical Assistant

Table 6.2: Potential Variant Streams of the Standards Based Apprenticeship

6.3.2 Apprenticeship in Japan

Japanese traditions which nurtured general craft skills of unequalled standards means that Japan has potentially a lot more to lose than Ireland. As the conditions that created

the artisan class no longer exists (Buntrock, 1998:71-73, Kakiuchi & Takeuchi, 2014:1-9), the Japanese Government has actively worked on the promotion of craft skills nationally and internationally. There are champions within Japanese culture who work tirelessly to promote local crafts to a wider audience; in fact the Japanese interviews for this research were only possible due to the efforts of a Deputy Director of a Museum in Western Japan who arranged for artisans to be interviewed. There are regular programmes on the Japanese television channel NHK that promote craftspeople and traditional skills, these programmes are broadcast in English to make them accessible internationally. The Japanese Government also promote traditional crafts in international exhibits such as the Biennial Milan Expo and have even opened a pop-up shop in Milan from May to October in 2015 to showcase traditional Japanese crafts to the Italian public. This promotion of the traditional crafts is necessary, however it may not be enough of a solution to a cultural crisis eroding a treasure of national and potentially international significance.

The informal structures of the traditional apprenticeship system in Japan is quickly becoming a liability through changing societal attitudes and technology, which means the role and authority of the Master is not as sure as it was (Okamoto, 2011:158, Tahara-Stubbs, 2014:1, Brown, 1989:31). This is not to say that the role of the Master is redundant, but it does need to be reinforced within a rigid structure of training that is transparent, regulated and common across all crafts in Japan as the traditional '*master-apprentice'* relationship was according to Gamble (2001) no longer viable in modern workplaces (Gamble, 2001:185). This would require a methodical revision of the '*ba'* self-transcendence model as described by (Nonaka & Konno, 1998:40) of internalizing knowledge which has been rejected by the younger generations (Brown, 1989:30). If Japanese culture continues to rely on an ever decreasing circle of artisans to safeguard their craft traditions, then huge losses will be experienced within one or two generations. While Japanese crafts have been in decline since the '*Golden Age of Crafts'* the period that lasted from the sixteenth century to the mid nineteenth century (Buntrock, 1998:72), the aging population is accelerating the demise of craft skills in Japan.

Developing an apprenticeship structure cannot be done by one single entity or representative group, as the experience in Ireland demonstrated, it requires the support and commitment of all those involved in apprenticeship including, Government, Masters/Employers, Trade Unions, Wholesalers, Educators and the general public and each one has a role to play in the success of a structured apprenticeship system

(Steedman, 2012:22). This also requires an investment by each stakeholder in different ways, but it should help ensure that an invaluable cultural asset will be safeguarded for future generations to enjoy (Veco, 2010:324, Kakiuchi, 2014:1). This would require a cooperative model (Koudahl, 2010: 1901-1902, Hawley, 2006:3) which would mean a dramatic change in how things are done in Japanese apprenticeship training and it is a model that is not part of the traditional patriarchal structure that has existed in Japan for centuries.

The current structure of the traditional crafts in Japan today is of a Master with maybe one or two apprentices, many have none, working in a tiny but perfectly arranged workshop producing beautiful and detailed pieces. A person in this situation does not have the time or resources to promote and sell their work internationally. The majority of artisans sell directly to a Wholesaler who distributes the pieces across Japan. This creates a direct link between the economic fortunes of the country with the prices of goods received by the artisans. This supply bottleneck also limits the scope and designs of the artisans who produce items based on the requests of the Wholesalers. The Government sponsored agency The Association for the Promotion of Japanese Crafts is tasked with the sole objective of selling traditional Japanese crafts abroad, while still in its infancy it has the potential to open new sales channels and distribution networks as well as negotiate design licence agreements on behalf of the artisan and potentially give many artisans a more sustainable income in the long term and make the craft area a financially sustainable option for the next generation.

The decline in populations of developed countries such as Germany and Japan has already been discussed as having a negative impact on the potential number of new entrants entering the craft area (Okamoto, 2011:158, Steedman, 2005:15-16, Smith, 2013:8, Gopaul, 2013:7). Potential solutions in this area are beyond the circle of competence of this researcher. It is not a new problem but it is an accelerating factor in the decline of the craft area to be considered as the trend of young people entering areas such as technology is increasing despite the population decline.

6.3.3 Comparing the Irish and Japanese apprenticeships: towards a new model

With the analysis of the both the Irish and Japanese apprenticeship models analysed individually, the deficits of each become apparent offering potentially a new model of apprenticeship that could build on the tradition and success of each system into the

future. The new model would begin by summarising the common issues of both paradigms as in table 6.3:

Comparative overview of the Irish and Japanese apprenticeship systems		
Irish Apprenticeship	**Common issues**	**Japanese Apprenticeship**
Definitive Structure: Set Phases and Term Length	Poor Quality Control, with little or no pedagogical training of trainers	No structure: No Set Phases or Term Length
Social Partnership	Declining Entry Standards	Industry Administered
Standardized Syllabus	Decline in applicants	No set syllabus
Strong Regulation	Decline in status	Little Regulation
Low technical or academic standard	Lack of awareness by society of apprenticeship methodologies	High Technical standard Low academic standard
20/80 Balance of On-the-job, Off-the-job training	Disappearing Skills and Knowledge	No real off-the-job training

Table 6.3: Comparative Table of Irish and Japanese Apprenticeship Systems

This comparison suggests that both the Japanese and Irish apprenticeship systems suffer a lack of credibility in society which is the primary common kernel of decline in each. To address this, a new model of apprenticeship would use the existing structures that function well but would increase the focus on quality assurance and raising the standard of the graduates knowledge and skills within the craft area.

The proposed new model would use the well regarded structure of the Irish Standards Based Apprenticeship model of 7 Phases over four years with a ratio of 20/80 off-the-job/on-the-job but more focus would be placed on the quality assurance of each element of the delivery in apprenticeship.

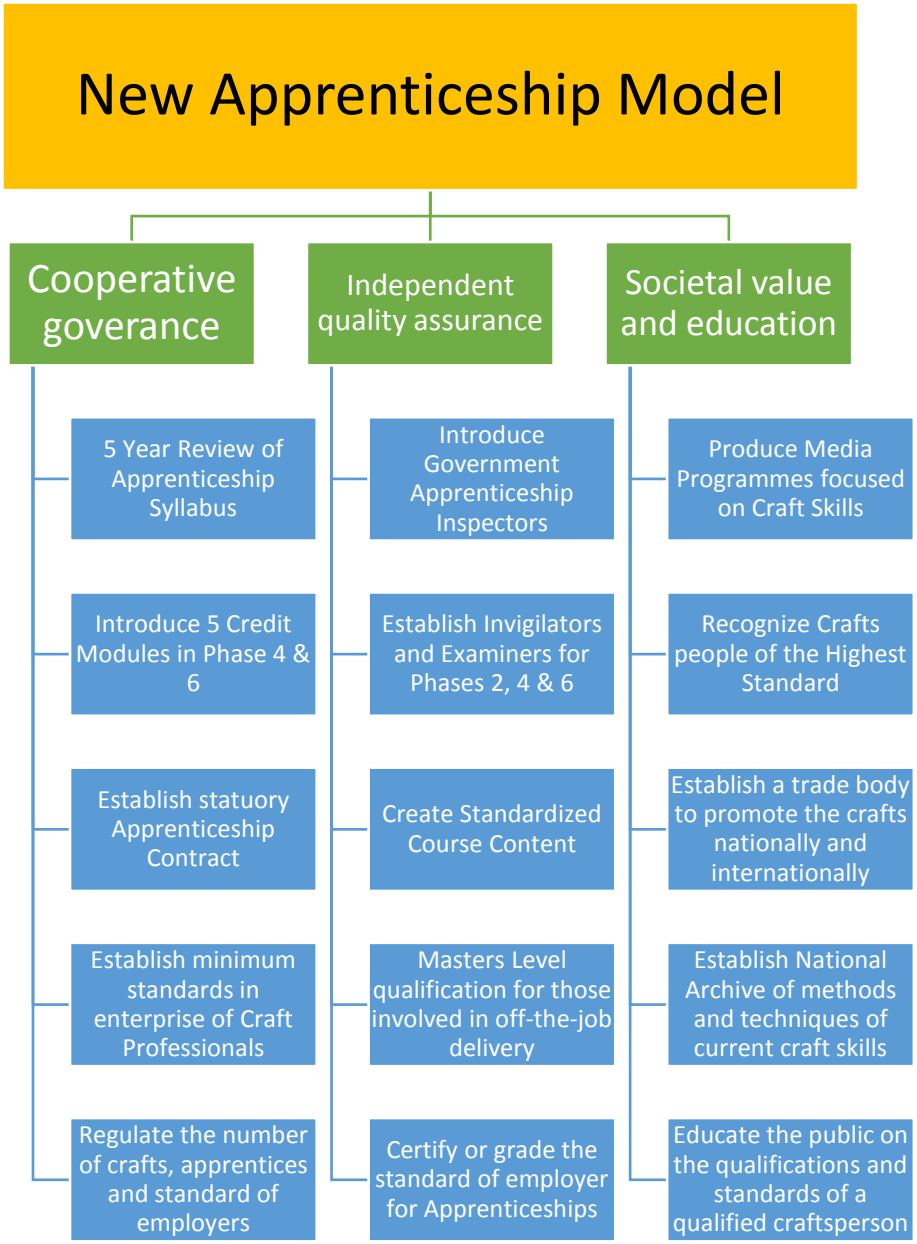

Figure 6.4: Proposed New Model of Apprenticeship

Cooperative governance

The Social Partners would regulate and govern the structure of the apprenticeship but additionally institute a five year review schedule of the relevance and content of the syllabus to ensure that is serves the needs of industry while balancing the knowledge and skills that have existed and benefited society for generations. An introduction of a five Credit Module approach would allow for flexibility in delivery of differing variants within a single trade. Apprentices could choose the modules relevant to their area while aligning the education of apprentices closer to main stream higher level educational systems. Additional qualifications and recognition of prior learning could be facilitated

more efficiently through the paradigm of the module based framework. Recognition of the apprentice as a learner and employee should be formally recognised by statutory means, this would allow an apprentice to transfer between employers during time of unemployment and to allow for greater educational range while relieving the employer the obligation of incurring an immediate four year contract of continuous employment with an apprentice. The reintegration of crafts into the apprenticeship model, currently delivered within the arts curriculum would help restore the value of crafts generally without losing the creative element that enriches many traditional craft areas. Minimum standards should be adopted by industry for those who wish to trade independently to protect the standards and reputation of the craft area, while the overall number of crafts, including those currently appropriated by the Arts community, apprentices and standards of employers should be regulated to prevent '*boom and bust'* cycles of national trade skills.

Independent credible quality assurance

The crisis in credibility of the craft area requires a dramatic change in attitude to quality assurance within apprenticeship generally. Long established systems used in general education such as the introduction of Inspectors by the Government is required despite the potential objections among those who would be under inspection. It is necessary in apprenticeship just as it is in general education to ensure that standards in delivery are being met. Invigilators and independent examiners are required to ensure the integrity and standardisation of exams within the apprenticeship model especially in the Phases 2, 4 and 6 but also to a lesser degree in the on-the-job phases as well. To fully standardize the experience of the apprentice, a standardized text should be introduced as is the practice in second level education marking a smoother transition from school to work. Parallel to general education should be the requirement of a Masters qualification in Education for those educators who are responsible for the education of apprentices and remove the incongruent situation where those teaching a Level 6 programme have lower educational attainments than those who teach a Level 5 second level programme. Equally, rating the quality of apprenticeship delivered by the employer should offer clearer transparency to the prospective apprentice and help promote higher standards of training within the industry.

Societal value and education

Adopting the Japanese system of craft skills promotion would help educate society in the journey of an apprentice to become a crafts person but also to demonstrate what competent crafts people can do. This could be complemented by the recognition of crafts people of the highest standard, replicating the Japanese title of *'National Living Treasure'*. A further approach that could be replicated from Japan is the establishment of a national body to promote the craft skills and products of practitioners both nationally and internationally to raise awareness and standards of artisans generally. Recognition of heritage skills or craft knowledge that is fast disappearing, demands urgent conservation efforts in the form of detailed documentation and recordings of the techniques used and the methods practiced using a range of multi-media methods, to be delivered in training and available to the general public via a National Archive. As part of the education of the public of the standards within the craft area, promotion of the qualifications and standards expected of a crafts person should be actively promoted to raise the perception and standards of the craft area.

The proposed new model of apprenticeship presented here is merely a theoretical model that may exist in part or difficult to implement due to the number of stakeholders involved, existing industrial agreements, cultural conservativism and basic funding, nonetheless it would offer a promising path forward and help ensure the security of skills and cultural heritage of a distinguished model of pedagogy.

6.4 Future study

It is an indication, possibly, of the status and value in the mind of society that an educational system which can trace its roots back centuries is so little studied compared to areas such equality or management for example. This is not to say that these areas are more or less worthy of study and research it is just an indication in the life cycle of societies, that they can outgrow a tangible industrial lineage and ignore a contributing source to a country's rich heritage. Vocational education was an important factor in the success of the industrial revolution, and yet, apprenticeships and the crafts they sustained have become the solution for youth with social issues and unemployment or for the uneducated to access a role in a productive society. Why is apprenticeship not encouraged as an option to the children among those who deliver it? What can be done

to the paradigm of apprenticeship to elevate its status in society and what is the experience of those who have participated in it; these questions offer areas worthy of further study because apprenticeship is more than just an industrial training mechanism it is a critical link to the traditions and skills of the past that contribute to a cultural heritage and identity of each country. Vocational education and training represents an important strata of pedagogy within a society that requires further study to create sustainable and quality career paths.

1. **The relationship between quality assurance and the creditability of a system**

Quality assurance in education is the currency of credibility in professional qualifications and it is a universal requirement to ensure the status of any educational or training system. A detailed examination of the various theories and standards regarding quality assurance employed in varying professions would be a useful contribution to structure of apprenticeship. By comparing the fundamental principles underpinning the status of professions at different levels with the apprenticeship model within a single society may offer guidelines for vocational education to be developed.

2. **The value of heritage skills to the built environment within a society**

The current generation of architectural thinking has a particular fascination it seems with buildings that are essentially large glass boxes, with the exception of a few iconic buildings and historic building stock which only serve to highlight the unimaginative nature of design in current construction. This makes it all the more important to research the value and meaning of our heritage building stock to society today. Why do people value architecture from a previous century or architectural era and did the availability of craft skills in particular contribute to architectural styles and the built environment generally. As architecture promoted itself into a separate profession above the tradesman causing the two areas to become more distant, has this disconnect between the craftsperson and architect affected building design in the last century?

3. **Irish Apprenticeship into the future**

A review of professions such as engineering which evolved from mechanics and architecture which emerged from master mason builders of the middle ages shows a possible educational pathway for current craft skills and those who train in them. This suggests that research into the efficacy of the most recent review of the Irish apprenticeship model is required to determine the reaction of society to determine if the status of vocational education has changed. Research is also required if there are potential progression routes for apprenticeship into additional specialist areas to build upon and evolve in order to remain a credible option for future craftspeople.

4. A study in the attitudes of school leavers toward apprenticeship in Ireland

A detailed study into the attitudes of school children who are in their final years of second level education in Ireland offers a potentially significant resource in how the apprenticeship model is perceived. An additional element of this could investigate the attitudes of the decision makers in the possible careers paths of young people. This would include, guidance councillors, teachers and parents to determine, what if any changes could be made to the apprenticeship system to make it a credible and preferable choice for the next generation of Irish society.

5. An examination of the impact and influence of technology on the traditional craft areas

The increasing pace of technology being integrated into craft areas such as construction, manufacturing and the creation of potentially new apprenticeship areas, such as Information Technology Infrastructure has changed the methods used by craftspeople. A shift has occurred within the craft area from the individual manufacture and repair of items to the fitting and replacement of parts or systems, increasing the technical knowledge required while reducing the kinetic skills element within a trade, while the structure and methods of apprenticeship in Ireland has remained largely unchained from the '*time served'* model of the Guild era. A measure of the time and methods currently used by trades' people that require interaction with information technology especially in areas such as the Motor trade or Electrical Trades may suggest the future development paths of the craft areas and the skills required by tomorrows apprentices.

6.5 Reflections on the research process

Conducting PhD research part-time while engage in full time employment was not without is challenges, but also its rewards. Dixon (2015:231) opined that a PhD was comparable to an apprenticeship in academia, having completed both an apprenticeship and a PhD, this researcher can confirm that a PhD was easier, despite conducting research comparing two countries separated by vast distance, language and culture which may have increased the challenge somewhat. The reward for this was also directly proportional to the challenge experienced, an exponential recompense almost beyond measure in terms of personal and meta-cognitive growth. If a comparison is to be offered, then it would be that a PhD is more akin to a pilgrimage. The journey of a pilgrimage is as important as the final destination, encouraging reflection, a questioning of faith in personal ability, as the pilgrim progresses slowly toward a singular destination. The environment of apprenticeship by contrast is pervaded by ignorance and sustained thinking is not welcome, the focus is on the non-thinker, or to paraphrase John Ruskin (1853), apprenticeship traditionally turned a creature into a tool, not a man, as you cannot be both.

Not being a Japanese native while studying their culture proved frustrating as the interactions and experiences offered lacked the full depth that could have been had. Being allowed the privilege of meeting Master artisans in their workshops, offered a glimpse of the sublime quality and rich craft heritage that Japanese people have all around them and offered this researcher an unrivalled education. Having studied and practiced carpentry and joinery for over two decades, the researcher suffered a false sense of craftsmanship, visiting a Japanese artisan quickly resets the standards previously held in the skill one actually possesses. The researcher was shown an example of a wood turned object before the lacquer was applied, this piece was the same thickness and shape as a Robin's egg, almost translucent and it included a lip to facilitate a cap to slide over the top. The researcher found this level of skill almost incredible and is at a loss to explain how this was done with such accuracy, with zero distortion so that the cap fitted precisely. This is just one example of near mystical standards of workmanship commonly produced in Japan, not by one or two individuals but by an entire stratum of society.

Apprenticeship offers a unique and direct link to the past, it is a fully immersive experience that allows the transfer of tacit knowledge in a way technology never will

and it deserves to receive special attention and respect for the benefits it can deliver to society beyond short term employment or social problems.

6.6 Final conclusions

Although the external view of apprenticeship can be of '*a training system'* the research showed the diversity in the methods, aims and experiences of one type of vocational education, this was best demonstrated by an examination of the outlier examples of Irish and Japanese apprenticeship models. Initial investigations of Irish and European apprenticeships suggested that a weak or poorly enforced quality assurance system was the singular cause of decline, however the Japanese model demonstrated that the underlying cause was broader than one single element. What was revealed through the process of reading, reviewing and reflection was that both examples suffered a decline of status in society through the absence of one key element in the three pillars of a sustainable apprenticeship model. This negative trend was set to continue in parallel with a decline in the quality standards of training and craftsmanship as the perception of greater opportunity to earn a sustainable income through the academic career pathway increased in society. The main difference between the Irish and Japanese approaches was that the Irish apprenticeship system had evolved a rigid structure with the involvement of the various stakeholders but suffered a lack of enforcement of a robust quality assurance system. The Japanese apprenticeship on the other had rigidly and ruthlessly adopted a high standard of the apprentice, where even the act of learning the craft was a test of endurance and patience, resulting in the highest of standards, without any real structure, curriculum or recognisable pedagogical methodology, however both systems were in decline in the society. The key elements required for a sustainable Standards Based Apprenticeship over generations are;

- Involvement of all the social partners directly involved in the delivery of apprenticeship to ensure a rigid structure with clear progression through the curriculum which is regularly reviewed for relevancy.
- Adopting quality in every aspect of the apprenticeship system, from the qualifications of those delivering it, to the independent assessment of the knowledge and skills learned by the apprentice. This begins with high entry requirements to deliver higher quality crafts persons and raise the status of the craft areas in society.

- Better education of society of value and experiences of a craftsperson to raise awareness of the standards expected by society. This education includes a clear progression pathway through the qualifications framework with a definitive career profile to create a distinct professional identity in society.

The primary purpose of apprenticeship is the transfer of kinetic skills, when this is done to the highest standards possible, benefits are returned to the individual, to the employer and to society in general, when the apprenticeship model is delivered to a poor standard, no one benefits.

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Appendix A

Timeline of Apprenticeship Development

Japan

1854 Commodore Perry forces Japan to open up to the West.

1865 Yokosa Kousya Ironworks set up by Feudal government under the guidance of L. Verny (French) with the aim of "establish a school within the dockyard in order to train up human resources as engineers and technicians…its curriculum is to follow the school regulations of the French Naval Forces in its entirety"

1868 Meiji Restoration begins returning Japan to Imperial Rule.

Education Code enacted in 1872 establishing the modern school system.

1874 Dr. W.J.M. Rankine (British) with the Ministry of Public Works establish the Kogakuryo school for engineers. It takes 6 years to become an Engineer.

1880 Tokyo School of Mechanics is established, it is Japans first full-scale vocational education institution under the direct jurisdiction of the Ministry of Education. It aims to teach mechanics and train new teachers, a course takes 4 years to complete. The school opens in 1882.

1890 The Tokyo School of Mechanics changes its name to Tokyo School of Technology. It combines French, British and German ideas to teach mainly theory based curriculum to elites with in Japanese society to produce Master Mechanics for private industry.

'Vocational Education' gains creditability endorsed by Yuichi Fuzawa.

Law for Subsidizing Vocational Education Expenses from the National Treasury enacted 1894 by Education Minister Kowashi Inoue.

Vocational School Order of 1899 establishes apprentice schools in many areas.

1920, permanent employment system begins to take root in large companies, with some starting vocational training schemes.

1931 Japan invades Manchuria.

1930's shortage of Master Mechanics is felt mainly in military industries and public vocational training institutions establish new courses.

1938 National Mobilization Law allows the government to enact 'Skilled Technicians Training Order for Factory Establishments' making it compulsory for factories and mines to train specific number of skilled technicians, this was the start of the 3 year vocational training for a range of fields.

1941 Japan attacks Pearl Harbour.

1945 World War II ends.

1947 standard textbooks are published, reform of the school system occurs, compulsory education to the age of 15. Trade Unions are introduced as well as TWI (Training within Industry) and the idea of a Foreman. Pre-vocational education begins.

1950 Law for Protection of Cultural Properties is enacted, intangible cultural properties are defined as dramatic, musical, artistic, and other intangible cultural artefacts of high value in terms of Japanese history or art including Crafts and Master Craftsmen.

1951 the Industrial Education Promotion Law is enacted expanding facilities and equipment of vocational education in High Schools. Jun Hasegawa introduces a complete curriculum

theory for the school subject of Vocational Training.

1956 Official Curriculum Guidelines proposes pre-vocational education across six areas including; agriculture, fishery, industrial technology, commerce, home and vocational guidance offered for three to four hours a week over three years.

1958 Vocational Training Law is enacted and it is the first time the phrase 'Vocational Training' is officially used. The Law promotes Vocational Training as an end rather than a solution to unemployment. It promotes in company training. It establishes the system of government skills tests. The employment market moves from Junior High School to Senior High School.

1961 'coordination system' is established where learning achievements in vocational courses are recognised by High Schools.

1974 the non-profit Association for the Promotion of Traditional Craft Industries was established

1976 specialised training schools are revived and called Professional Training Schools almost all are private.

1985 the Vocational Training Law is changed to Human Resources Development Promotion Law. Public Vocational Training Institution is renamed the Human Resources Development Institution.

Ireland

1898 Agriculture and Technical Instruction Act.

1922 Ireland becomes a self-governing dominion within the British Commonwealth.

1931 Apprenticeship Act this sets out the length of time of an apprenticeship, wages, and maximum working hours.

1937 Ireland becomes a sovereign state called Eire.

1959 Apprenticeship Act addresses the short comings of the 1931 Act including the attendance of a technical institute.

1967 the Industrial Training Act comes into force to establish the national training authority known as An Chomhairle Oiliuna (AnCO).

1970 AnCO appoints a special committee to review the existing apprenticeship system. The committee is made up of 'Social Partners' i.e. representatives of employers, trade unions, and educational interests.

1988 An Foras Aiseanna Saothair (FAS) is established bringing together AnCO, the Youth Employment Agency, and the National Manpower Service.

1993 the Standard Based Apprenticeship replaces the Time-served Apprenticeship.

2002 apprenticeship review process which was established by the National Apprenticeship Advisory Committee (NAAC)

2011 Apprenticeship becomes the responsibility of the VEC.

2011 Qualifications and Quality Assurance Act combines NQFI, HETAC, FETAC.

2013 Standards Based Apprenticeship is reviewed.

Appendix B Questionnaire

Questionnaire in English

An examination of the comparative efficacy between the Irish and Japanese apprenticeship systems

Interviewer:_____ **Interviewee:**_____

Location:_____ **Date:**_____

Introduction

The proposed aim of this research will focus on a comparison between the Irish and Japanese systems of apprenticeship in order to investigate the efficiency of each and determine the relative worth of an apprenticeship to the user and to the society as a whole.

Section 1: Background

Q. 1.1: What position do you currently hold in your organization and what roles or roles does this involve?

Q. 1.2: How long have you served in your current role?

Q. 1.3: What connection does your organization have to apprenticeship?

Section 2: Apprenticeship Structure

Main Question

Q. 2.1: Please outline the main steps involved as you understand them in becoming a qualified craftsperson from the moment an apprentice decides to become a craftsperson to qualification, including the key activities and assessments undertaken?

Probes

Q. 2.2: Is registration with a Government body or employer required?

Q. 2.3: Are there distinct stages or phases to an apprenticeship?

Q.2.4: What quality assurance procedures or checks are employed within the apprenticeship system?

Q. 2.5: How long is a typical apprenticeship?

Section 3: Cultural Value

Main Question

Q. 3.1: Please tell me how you became involved with apprenticeship? For instance is this something that was common in your family or was your interest triggered by some other factor, i.e. financial, historical, interpersonal, emotional, etc?

Probes

Q. 3.2: Is there a tradition of craft skills in your family?

Q. 3.3: Would you recommend an apprenticeship to the next generation?

Q. 3.4: In your opinion, has the status of the traditional apprenticeship in society become greater or less over the past three generations?

Q. 3.5: How is the perceived value of a craft skill reflected in society?

Section 4: User experience

Main Question

Q. 4.1(a): *If you **served** an apprenticeship, how long was it? In addition, please tell me a little about what you found most helpful in this training and what activities have subsequently served you well in your career.* I am interested to hear your experiences of how well this model of apprenticeship served you and the main industry to which is relates so please reflect on that for me. In your opinion how you think this model might have been improved.

Q. 4.1(b): *If you **did not** serve an apprenticeship, can you tell me why you choose not to?* I am interested to hear your experiences of how well this model of apprenticeship serves the main industry to which is relates so please reflect on that for me. In your opinion how you think this model might have been improved.

Probes

Q 4.2: Were you required to do state exams?

Q. 4.3: Did you get any instruction from a state employed Instructor/Teacher/Lecturer and if so was it of value?

Q. 4.4: How much time did/does your employer give to instructing/teaching you different skills as general percentage of your time as an apprentice?

Q. 4.5: Should an apprentice do more independent learning of his/her craft outside of work/college and if so how would this be done?

Section 5: Opportunities and Challenges

Main Question

Q. 5.1: What are the employment prospects for a newly qualified apprentice today? Do you think that the current model of apprenticeship is better suited to the needs of students and society than the model you undertook? If so, what features are especially helpful and what could be done to make apprenticeship training more relevant in today's industrial landscape?

Probes

Q. 5.2: Does a qualified apprentice have the skills to start-up his/her own business, interacting with customers, managing a business?

Q. 5.3: Do you think that a newly qualified apprentice is equipped with the skills necessary to work abroad?

Q. 5.4: In your opinion are there clear progression paths for a newly qualified apprentice who wishes to enter higher education?

Q. 5.5: Is the current apprenticeship system relevant in today's society?

Section 6: International Perception

Main Question

Q. 6.1: I am interested in how different systems of apprenticeship compare with those in other countries. Do you have any experience or knowledge of the kind of training that apprentices receive in other nations? If so, how do you think that the current apprenticeship system in this country compares internationally? Even if you do not have any direct experience of apprenticeship in other countries how do you perceive the quality of apprenticeship in this country compared to others? For instance do you feel that qualified apprentices in this country would have the level of skills to make them competitive with qualified apprentices from other countries?

Probes

Q. 6.2: Are you aware of any similar apprenticeship system?

Q. 6.3: Have you any experience of any other training system at home or abroad?

Q. 6.4: What are the merits and what are the failings of the current apprenticeship system compared to other training systems nationally or internationally?

Q. 6.5: What changes if any could be made to the current apprenticeship system to make it more competitive or relevant internationally?

Thank you for your time.

Questionnaire in Japanese

アイルランドと日本における

師弟制度の比較効果についての研究調査

取材者:_____ **面談者:**_____

場所:_____ **日付:**_____

初めに

本研究はアイルランドと日本の師弟制度に焦点をあて、それぞれの効果性をもとに、 師弟制度の相対価値 を利用者と社会に提案する事を目的とします。

セクション1:経緯 について

Q. 1.1: 今現在所属する機関での役職または役割はなんですか？

その役職または役割が担うものには何が含まれますか？

Q. 1.2: 現在の役職または役割を任されてからどのくらいになりますか？

Q. 1.3: 所属する機関では、見習い・研修とどのような関係がありますか？

セクション2: 師弟制度のしくみについて

本題

Q. 2.1: 鍵となる活動や実施される評価基準など、見習い・研修生が大工や木職人になると決めた時から資格のある職人になるために理解しておかなくてはならない、主なステップを概説して下さい。

詳細

Q. 2.2: 政府または自治体に見習い・研修を申し出る必要がありますか?

Q. 2.3: 見習い・研修制度に明確な段階や期間があります？

Q.2.4: 見習い・研修制度内で品質管理作業や査定が行われますか？

Q. 2.5: 大概の見習い・研修期間はどのくらいですか？

セクション3:文化的価値について

主題

Q. 3.1: どのようにして見習い・研修に関わるようになったのか教えてください。例えば、ご家庭では当然の選択であったのですか？　または、興味を持ったきっかけが他にありましたか？　例えば、経済的なこと、経験上のこと、人間関係、または感情的なきっかけだったのでしょうか。

詳細

Q. 3.2: 工芸など代々受け継がれているものはありますか？

Q. 3.3: この見習い・研修制度を次の世代にも推奨しますか？

Q. 3.4: あなたからみて、伝統的な師弟関係の社会的地位は、先々代からより上がっていますか？　それとも社会的価値は低下していますか？

Q. 3.5: 工芸技術の 価値は社会一般ではどう位置づけられていると思いますか？

セクション4: 体験談

本題

Q. 4.1(a): 修行・研修を受けた方。

修行・研修はどのくらいの期間でしたか？また、その期間でもっとも有効的だった事はなんですか？どのような活動が後のあなたのキャリアに役立ちましたか？

あなたの受けた師弟制度モデルがどのようにご自身や主な産業に役立つのか、という事をあなたの経験から知りたいので詳しく教えて下さい。

また、あなたが受けた師弟制度モデルが、改善されている可能性があると考えられますか？

Q. 4.1(b): 修行・研修を受けなかった方。なぜ受けない選択をしたのか教えて頂けますか？

この師弟制度モデルがどのように主な産業に役立つのか、という事をあなたの経験から知りたいので詳しく教えて下さい。

また、あなたが受けた師弟制度モデルが、改善されている可能性があると考えられますか？

詳細

Q 4.2: 公認の資格試験を受ける必要がありましたか？

Q. 4.3: 政府または自治体からの講師の授業を受講しました？受けた価値はありましたか？

Q. 4.4: 通常の見習い・研修時間と比べて、雇用主はどのくらい別のスキルを指導してくれましたか？

Q. 4.5: 見習い・研修生はもっと外部で自主的に学ぶべきだと思いますか？

また、どのように行えばいいと考えますか？

セクション5: 機会と チャレンジ

主題

Q. 5.1: 雇用主は、新しく資格を取得した見習い・研修生にどのような将来性を期待していますか？ ご自身が請け合った師弟制度モデルよりも、現在のモデルの方が生徒や社会的ニーズにより適していると思いますか？

もしそう思うなら、特に役立つと思う特徴は何ですか？また、見習い・研修生へのトレーニングを今日の産業により適合させるには 、何が出来ると思いますか？

詳細

Q. 5.2: 資格を取得した見習い・研修生は、 顧客との交流、経営など自分で起業するスキルを持っていますか？

Q. 5.3: 新しく資格を得た見習い・研修生は海外で働く技術を身につけていますか？

Q. 5.4: 新しく資格を得た見習い・研修生が、それ以上の教育を受けたいと思った時に明確な進路が用意されている考えますか？

Q. 5.5: 現在の師弟制度が今日の社会に適切だと思いますか？

セクション6: 異文化間比較

主題

Q. 6.1: 各国々との見習い・研修システムの違いに興味あります。

ご自身が海外で修行やトレーニングの経験がありますか？また海外で見習い生・研修生がトレーニングを受けたという話をご存知ですか？ もしそうであれば、日本の現在の師弟制度は国際的に比べてどう思われますか？

ご自身に海外での直接的な体験がなくても、日本の見習い・研修システムの質は他の国に比べてどう見えていますか？例えば、日本の資格を得た見習い・研修生は、他の国の同じように資格を得た見習い・研修生と競えるレベルの技術を持ち合わせていると思いますか？

詳細

Q. 6.2: 同様な見習い・研修システムを行っている国を知っていますか？

Q. 6.3: 国内外問わず、違ったトレーニングシステムでの見習い・研修の経験はありますか？

Q. 6.4: 現在の見習い・研修システムにおいて他のトレーニング制度に比べ、国内外的にどこが利点でどこが弱点だと思いますか？

Q. 6.5: 現在の見習い・研修システムをどのように改善すれば、より国際舞台で競合または適合できるシステムになると思いますか？

ご多忙のところ、ありがとうございました。

Appendix C Participant Information

Brief Profile of Japanese Artisans

1. Master Urushi-ware (1) (*makie* artist) & VP of the Association of Traditional Craftsmen in Japan

He has been an independent Master for five years, entering the craft from watching his mother-in-law painting on ceramic ware. To become a member of the Association of Traditional Craftsmen in Japan, which has over five hundred members, a craftsman needs twelve years' experience and have to take an examination to be accredited by this Association.

2. Master Kaga *yuzen* painter/dyer (2) Kimono Painter

He has been working as an independent artisan for twenty eight years and has one apprentice. According to the rules of the Trade Union, an apprentice can be independent after seven years' but it can take ten years' experience and permission from the Masters and the Wholesalers, they need two kinds of permission and if you have a quarrel with your Master then you cannot join the Trade Union/Society and you will not get orders from the Wholesalers. His father was a doctor and he studied engineering at college where he say an article on Kaga Yuzen and decided that it was for him.

3. Master Bamboo Fishing Rod Maker (3)

Studied under his Uncle who was a Master Bamboo Fishing Rod maker and came from the family business of fishing hook manufacturing business which was subsequently bought by a larger firm. In general it can take two years to make one fishing rod and some apprenticeships can take ten years.

4. Apprentice Bamboo Fishing Rod Maker (4)

Was a teacher until his fifties when he felt he could leave his job and become an apprentice. He has always had an interest in fishing and studies and works in his Masters house where he has a one room workshop.

5. Master of Urushi-ware (5) (*makie* artist) and Director of the Japanese National Association of Craftsmen

He has been an independent Master for nearly forty years and had been an apprentice for four years and there was no real structure to the learning, some days he would draw flower petals or trace patterns done by the Master. His grandfather and father were both lacquer artisans and he felt that it was his obligation to enter the craft.

6. Master Maki Artist Kanazawa Urushi-ware (6) (*makie* artist)

Came from a family of artisans, his father and grandfather were artisans. Thought as a child that it was difficult to make a living in this craft and studied Architecture in college as his brother did but his displeased his parents. His apprenticeship lasted for three years and ten months and he did not have to repay his 'hoko' as he did not live with his Master.

7. Independent Wood Turning Craftswoman (7)

Went to college/training centre for five years and spent a further four years with a Master. She became interested in lacquering in school but became more interested in shape. Currently practices as an independent craftswoman in a rented workshop.

8. Master Kutani porcelain 'akae' Ceramic Painter (8)

He has been an independent artisan for thirty years; he used to have four apprentices but not now. He was an apprentice for five years. Ceramic painting is a family business.

9. Master *Hyogu* (paper mounting) Paper Restorer (9)

He took over from his father's business and has worked as a Hyogu for forty-five years. He worked as an apprentice in Kyoto for five years plus one additional year without salary to repay hi obligation to his master, known as '*hoko*' or service period, making it six years in total. He was never taught or instructed by his Master, spending most of his doing chores or making deliveries. To address the lack of knowledge from his apprenticeship he worked as a volunteer for twenty years to gain the relevant knowledge in paper restoration. He take the time to teach his apprentices the skills necessary in paper restoration so they do not have to go through what he did. He is a member of the Japan Craftsman Association as well as other associations.

10. Master House Carpenter (10)

He has been working independently for fifty years, his apprenticeship lasted three years with an additional service period or '*Hoko'* of two years and now they can teach apprentices in college but it takes a lot longer to become independent as the training college days as so short. With the decline in demand of traditional Japanese houses he has moved to general wood work making furniture, decorative boxes. He is the youngest of the remaining three House Carpenters in his Prefecture with no-one following him. His son has opened up a pub in the area not entering the trade as he saw how difficult it is to make a living from it.

11. Lacquer Undercoat Artisan (11)

He was an apprentice for seven years before becoming an independent Master for the last twenty-two years. He prepares and coats the timber bowls in a hard foundation undercoat that is hardened in a kiln and makes the timber bowl stone like and durable while being perfectly smooth ready for the final *Urushi* lacquer coating. He works in a single room workshop (with chaotic stacks of papers everywhere), sitting as many of the craftsmen do crossed-legged for hours at a time. He has two sons who will not follow him into the craft due to the difficulty of earning a stable income.

Brief Profile of Irish Craftsmen

1. College Lecturer (12)

Followed the family tradition of the craft area and became an apprentice carpenter after leaving school. Went on to teacher training college to become a wood-work teacher followed by a Masters' in Education and taught at second level and third level.

2. Qualified Carpenter & Joiner (13)

Went into apprenticeship after school and became qualified, working in the industry until the economic collapse and then entered college as a student where he is currently studying to be a Construction Manager.

3. Employer, Carpenter (14)

Currently self-employed, he had a number of people working for him including apprentices until the economic collapse. He is currently studying psychology through a distance learning course.

4. Section Head of the Wet Trades in a Third Level Institute of Technology (15)

Has been a Section Head for seven years and is a qualified plasterer who worked in the industry. He came from a family of tradespeople.

5. Apprentice Carpenter & Joiner (16)

He started his apprenticeship in 2006 and is still training. He has found it hard to complete his training sooner as part-time work is not included and finding employers is difficult. He comes from a family of carpenters.

6. Qualified Carpenter & Joiner and Qualified Electrician (17)

Studied as an apprentice electrician but did not like it and became a carpenter and qualified in that in 2007. Working industry since then but found it difficult to find regular employment and so entered third level college studying to become a Construction Manager.

7. Qualified Carpenter & Joiner (18)

Has been a qualified carpenter/joiner since 2009, having dropped out of college he was strongly encouraged by his parents to become qualified in a trade. He has worked in Australia and came back to Ireland to study at third level to become a Construction Manager.

8. Apprentice Motor Mechanic (19)

Has been an apprentice for the past three years and is currently in phase six. He comes from a family of mechanics.

9. Educator in Motor Mechanics (20)

A qualified motor mechanic who then went on to do a Degree and a Masters, he has been in his current position for seventeen years teaching apprentice motor mechanics.

10. College Manager (Head of Trades in Institute of Technology) (21)

He has occupied his current position for thirteen years. He trained as a Cabinet Maker from the age of fifteen and served in that role for nine years before training as a teacher and teaching for twenty-two years at second level. He has been teaching apprentices for the past fourteen years.

11. Industry Body Representative (22)

He has worked with this employer representative group for the past fifteen years. He qualified from college as a Structural Engineer.

12. Employer of Construction Firm (23)

Working as a Director of the firm for the past fourteen years, they employ tradespeople at all levels. He did not serve an apprenticeship himself but is on a panel that represents employers on apprenticeship issues.

13. Educator of Apprentices (24)

He has been teaching for fifteen years after having served an apprenticeship in Carpentry & Joinery. He is a fourth generation woodworker and worked in industry as well as in the education sector. He went on to do a degree in Construction Economics and Management in 2013.

14. Educator of Apprentices (25)

He has been in his current role as an educator of apprentices for the past seven years. He became an apprentice through the Army as it was one of the few means of getting employment in 1982.

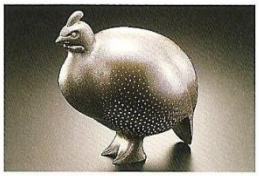
15. Employer in Construction Firm (26)

He is a qualified carpenter and joiner working with his current employer for the past thirty-two years where he is responsible for the training of fourteen apprentices within the company.

Appendix D Traditional Japanese Crafts

Kaga Lion Dance Mask

The lion dance mask is said to have developed from the lion dance to celebrate the first lord of Kaga Domain, Toshiie Maeda's entering into Kanazawa region. The lion dance masks, produced by the local craftsmen, were placed in each town as guardians.



Kaga Inlay

Inlaying is the process of decoration by carving a design into the base metal and then inlaying the groove with gold, silver or other metals. The unique feature of Kaga inlay lies in the "Hira-zogan" technique, where the inner part of the groove is carved in a trapezoid like shape to prevent the inlaid metal from falling out.

Kaga Lantern

The feature of Kaga Lantern is that the bamboo ribs inside are individual separate rings, allowing it to stretch under pressure. Unlike lanterns with the spiral frames, even if a rib broke, the Kaga lantern would not fall apart, making these lanterns highly durable. Today, lanterns are made for city festivals and decorations.

Kaga Mizuhiki (Paper Wire)

"Mizuhiki" has been used as decorations mainly in celebrations. Brightly colored or gilded, these strands of starched paper are woven into various shapes. Today, not only wedding ornaments but dolls are also made.

Kanazawa Scroll Mounts

A simple, refined finish is one of the distinguishing features of the Kanazawa region scroll mounts. Production techniques as well as restoration techniques have advanced, and today the restoration of cultural assets is being actively carried out.

Kanazawa Japanese Umbrella

Some features of these umbrellas are durability resulting from the four layers of paper in the center, and two to three threads wound around the outside to strengthen the easily breakable parts. These strong and long lasting umbrellas still have their popularity today.

Kanazawa Traditional Local Toys

Local toys were originally made for children; however, some are used to bring good luck, or as presents for birthdays or for a sick person. Miniature lion dance masks, rice-cake pounding rabbits and rice-eating mouse are just some examples of popular local toys.

Kanazawa Koto (Japanese Zither)

The learning of the 13-string *koto* was once a traditional custom for young daughters in the samurai families. The features of the Kanazawa Koto include the generous amount of elegant Urushi lacquer decoration and pearl-applying work techniques. The *koto* is regarded not only as an instrument but also as a piece of art and decoration.

Kanazawa Sangen (Three String Instrument)

Also known as the Shamisen, it is an essential instrument for the traditional Japanese music, folk songs and *nagauta* music. The art of its playing is maintained in Kanazawa region where traditional entertainment is still flourished in this city.

Kutani Porcelain <Governmental Designated>

The essence of Kutani lies in its gloriously painted and overglazed decorations. Among them are the simple yet dynamic "Ko-Kutani style" (Old-Kutani style), the "Mokubei style" where human figures are painted in red, and the "Shoza style" famous for the motifs of flowers, birds, hills and waters painted in various colors and gold.

Kaga Yuzen Silk Dyeing <Governmental Designated>

This beautiful dyeing is characterized by the traditional colors of "Kaga Gosai" (Kaga five colors), which are dark red, indigo, Chinese yellow, grass green and antique purple, and the naturalistic design where motifs from the nature such as the flora, plants and landscapes are commonly used.

Wajima Urushi Lacquer Ware <Governmental Designated>

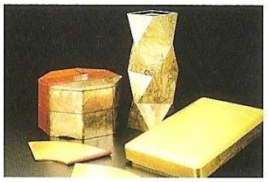
The characteristic of the Wajima Urushi Lacquer Ware is the durability owing to the careful craftsmen work, by repeatedly coating layers of lacquer containing "Jinoko" (local earth which is a type of diatomite). The Wajima Urushi Lacquer Ware is a beautiful and practical product, and its beauty is enhanced as it is used.

Yamanaka Urushi Lacquer Ware <Governmental Designated>

The woodturning carving technique is the characteristic of the Yamanaka Urushi Lacquer Ware. The decorative woodturning technique where grooves are carved in the wooden surface is the forte of Urushi lacquer ware. This ware has an established reputation for its production of tea utensils where the gorgeously raised Urushi lacquer work is also applied.

Kanazawa Buddhist Altar <Governmental Designated>

The charm point of the Kanazawa Buddhist Altar is the beauty of the elegant gold Urushi lacquer. The gold thread embroidery applied on the silk screen of the inner door, shells and ivory inlaid in the lacquer are all characteristics of the Kanazawa Buddhist Altar.

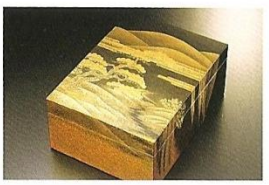


Kanazawa Gold Leaf <Governmental Designated>

Kanazawa gold leaf is pounded evenly to a thickness of 0.0004 mm without losing its brightness. A piece of gold in the size of a Japanese 10 yen coin is pounded evenly into the size of a *tatami* mat (approx. 90 cm x 180 cm) and over 98% of all Japanese gold leaves are from the Kanazawa region.

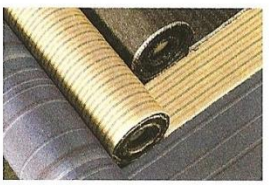
Nanao Buddhist Altar <Governmental Designated>

The characteristic of the Nanao Buddhist Altar is its incomparably solid structure. Since it was mainly constructed for the rural farmers of Noto Peninsular region, large doors which can be folded in several times (like an accordion) are created. Also, to facilitate disassembly for transportation, the "mortise technique" was developed.



Kanazawa Urushi Lacquer Ware <Governmental Designated>

Kanazawa Urushi Lacquer Ware is appreciated as a piece of art rather than a mass-produced product. Main products include furnishings and tea utensils. It is famous for its durable Urushi lacquer coating as well as the high quality and delicate gold Urushi lacquer decorations which include the raised Urushi lacquer work and clouded/scraped gold Urushi lacquer.



Kaga Ushikubi Pongee <Governmental Designated>

The Ushikubi pongee is famous for its strength. It is said that even if the textile is caught on a nail, the nail will be pulled out. Therefore, it is referred to as "Kuginuki-tsumugi" (nail pulling pongee). The thread is spun directly from twined cocoons, making the thread thick and durable yet a natural look is still maintained.

Kaga Embroidery <Governmental Designated>

The characteristic of the Kaga Embroidery is the style where the same pattern is embroidered on both the outer and inner sides of the fabric, allowing easy repair in case a thread is cut. Also the gorgeous yet delicate presentation created by the techniques such as gradation and padding embroidery are other features of the Kaga Embroidery.

Ishikawa's Washi Paper <Prefectural Designated>

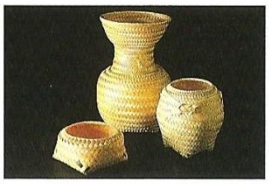
Under the patronage of the lords of Kaga, high-quality papers used for official documents, such as the "Kagahosho" (thick Japanese paper), "Sugihara-paper," and "Koudan-paper" were made in Futamata of Kanazawa region. Others like "Ganpi-paper" from Kawakita region and "Gasen-paper" from Wajima region can also be found here in Ishikawa prefecture.

Mikawa Buddhist Altar <Prefectural Designated>

These altars require the application of numerous Urushi lacquering, gold inlay and embroidery techniques. Among them is the "Tsuikoku" technique where a three-demensional pattern is cut out from the layers and layers of Urushi lacquers.

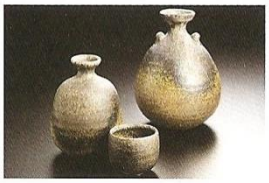
Kanazawa Paulownia Ware <Prefectural Designated>

Crafts with brilliant lacquer work designs harmonizing with the beauty of the grains of wood are very scarce nationwide. Taking advantage of the features of the paulownia, humid and fire resistant firepots, flower vases, ash trays and confectionery dishes are created.



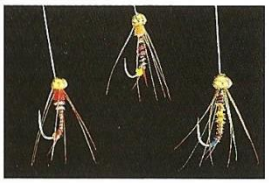
Kaga Cypress Wickerwork <Prefectural Designated>

Due to the lightness, breathability and durability of the cypress wickerwork, it was first made into hats for work in the forests and farms. Nowadays, ceiling decorations, baskets and flower baskets are also made and are being appreciated as simple folk art pieces.



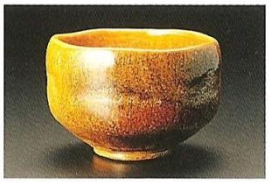
Suzu Pottery <Prefectural Designated>

The Suzu Pottery, an unglazed ceramic, was once disappeared completely, and the current Suzu Pottery was revived in 1976. Although the pottery is unglazed, the soil in Suzu region is rich in iron, therefore when it is fired at 1200℃, the ashes of the firewood melt and turn into a natural glaze, creating the charcoal gray color of the Suzu Pottery.



Kaga's Decorative Fishing Flies Bait <Prefectural Designated>

The feathers of various wild birds are used for the lure. Gold leaf and Urushi lacquer are used at the joint of the lure, making it beautiful and elegant. Furthermore, the lure is wrapped around by extra-fine threads, which makes it extremely durable. Nowadays, these kinds of techniques are used to make accessories and products that fit the modern daily lives.



Kanazawa Ohi Ware

Ohi Ware has a deep relation with the tea ceremony. Although most of the items produced are tea utensils, tea bowls, pitchers, flower vases, tableware are being manufactured as well. Individual pieces are hand-made, and the simple yet warm touch of the reddish yellow glaze matches the scenery in the snowy regions.

Kaga Fishing Rod

Durability in all weather conditions, sturdiness and being lightweight are all required in a fishing rod. The Kaga Fishing Rod is able to obtain such characteristics by heating the young bamboo at high temperature to make it tough; then it is further strengthened with coatings of Urushi lacquer.

Appendix E The Structure of the Irish Standards Based Apprenticeship

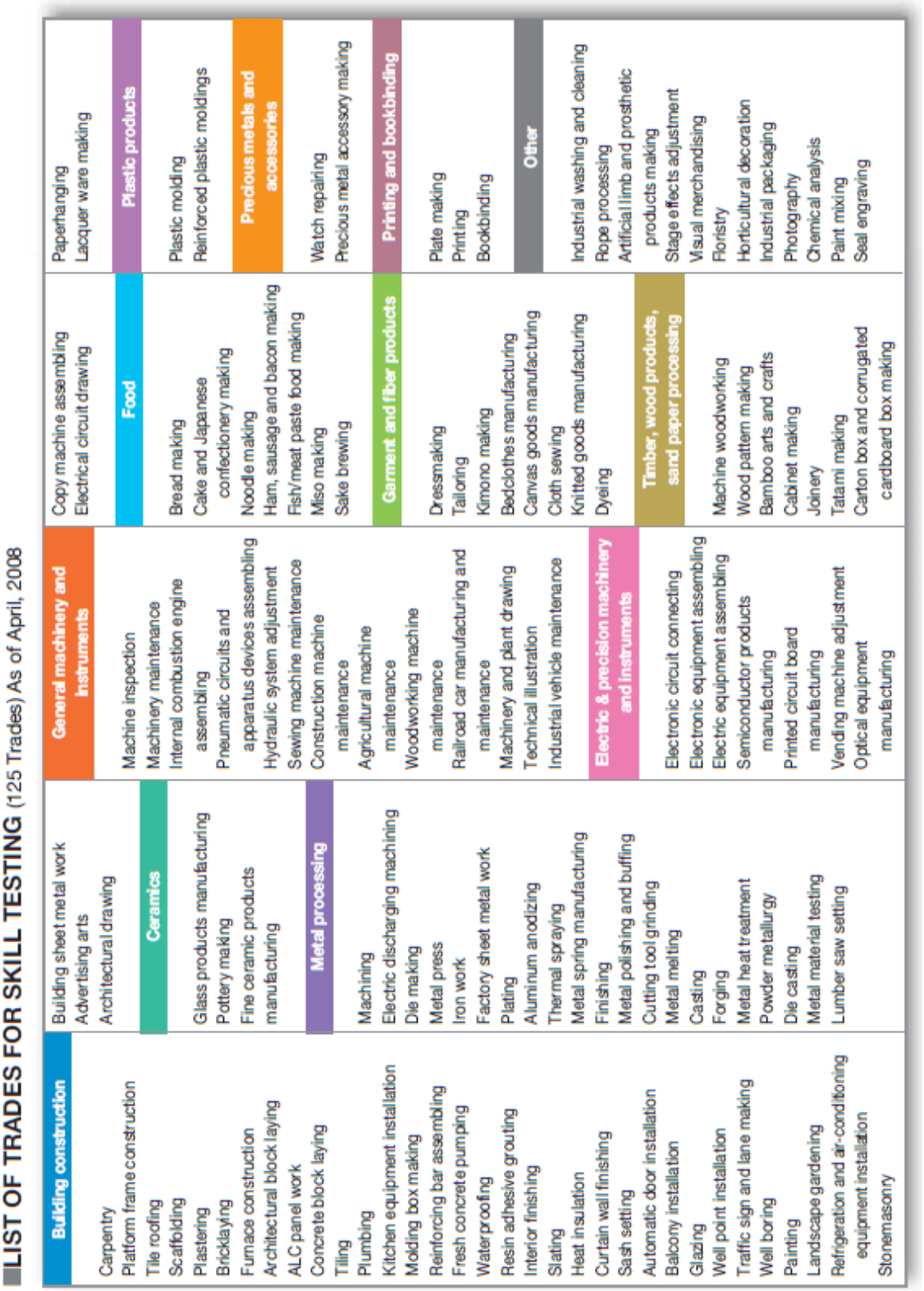
Appendix F List of Recognised Trades in Ireland 2011

No.	Name	No. of Phases	Eye Test Required
1	Agricultural mechanics	7	Yes
2	Aircraft Mechanics	7	Yes
3	Brick and Stone laying	7	No
4	Carpentry/Joinery	7	No
5	Construction Plant Fitting	7	Yes
6	Electrical Instrumentation	7	Yes
7	Electrician	7	Yes
8	Electronic Security Systems	7	Yes
9	Farriery	7	No
10	Floor/Wall Tiling	5	Yes
11	Heavy Vehicle Mechanics	7	Yes
12	Industrial Insulation	7	No
13	Instrumentation	7	Yes
14	M.A.M.F. (Auto Maintenance Fitting)	7	Yes
15	Metal Fabricator	7	No
16	Motor Mechanics	7	Yes
17	Painting/Decorating	7	Yes
18	Pipefitting	7	No
19	Plastering	7	No
20	Plumbing	7	Yes
21	Print Media	5	Yes
22	Refrigeration & Air Conditioning	7	Yes
23	Sheet Metal Working	7	No
24	Stone Cutting & Stone Masonry	7	No
25	Toolmaking	7	No
26	Vehicle Body Repair	7	Yes
27	Wood Manufacturing & Finishing	7	No

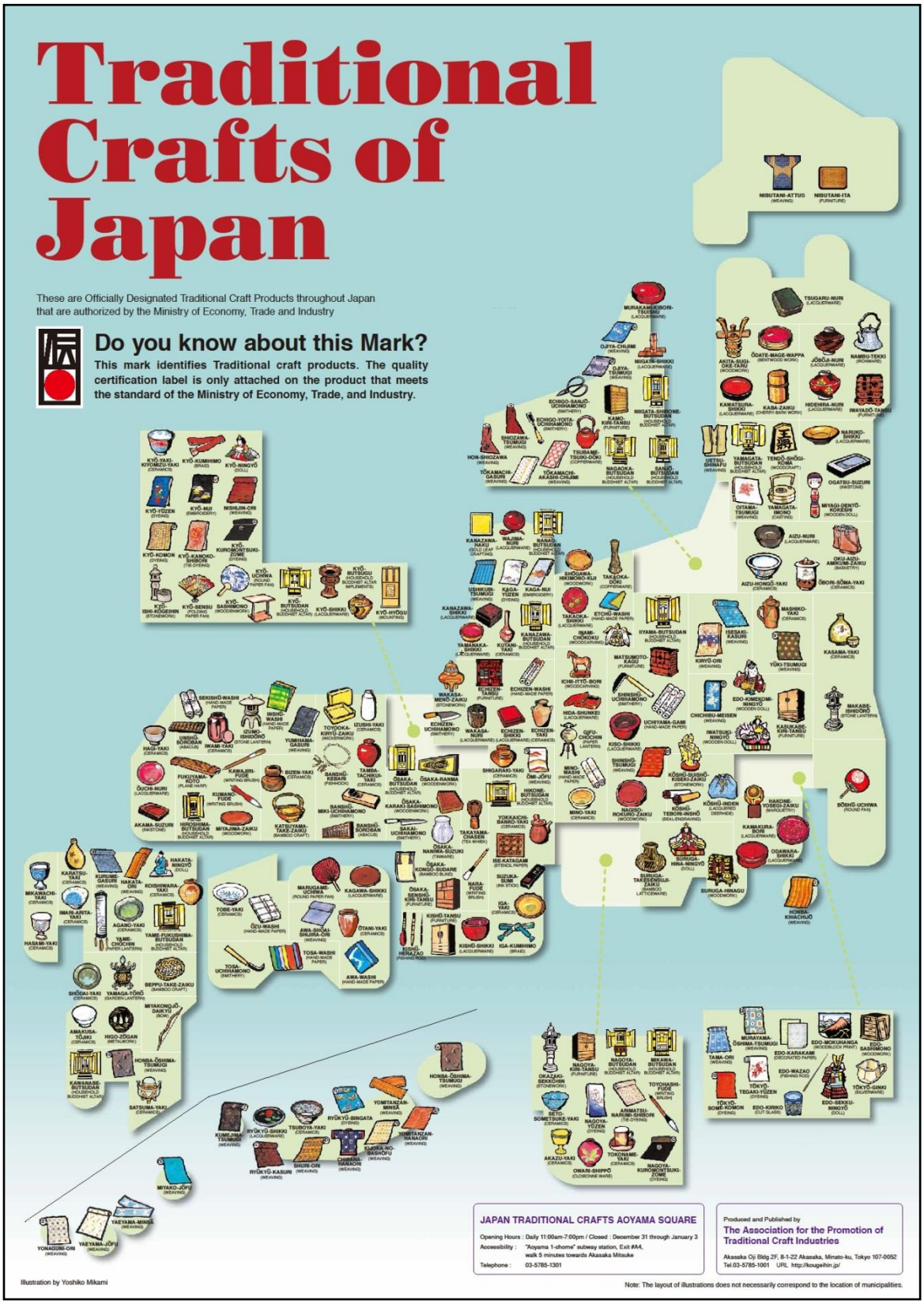
List of Proposed New Trades in Ireland 2016

PROPOSER	APPRENTICESHIP TITLE	NFQ LEVEL	ANNUAL REGISTERATIONS	DURATION YEARS
Accountant Technician Ireland	Higher Apprenticeship in Accountancy	6	80	<2
Association of Craft Butchers of Ireland	Butchery and Fresh Food Retail	6	60	<2
Combilift	OEM Technician	6	50	<3
Dawson Travel	Travel Professional	6	24	<3
Donegal ETB	Advanced Craft Welder	6	150	<4
Donegal ETB	Craft Welder	5	150	<3
Eircom	Telecommunications Field Technician	6	80	<2
Fasttrack to IT	Network Engineering	5&6	100	<2
Fasttrack to IT	Software Developer	5&6	100	<2
Financial Services Ireland	IFS Generalist	6	120	<2
Financial Services Ireland	IFS Advanced Specialist	8	30	<2
Financial Services Ireland	IFS Specialist	7	60	<2
Flour Confectionary and Bakers Association	Baker	6	50	<2
Irish Hotels Federation & Restaurants Association of Ireland	Commis Chef	7	70	<2
Irish Medical Device Association	Manufacturing Engineer	7	40	<4
Irish Medical Device Association	Manufacturing Technician	5&6	64	<3
3Irish Road Haulage Association	HGV Driver	5	70	<3
IT Tralee	Sous Chef	8	16	<2
IT Tralee	Chef de Partie	7	16	<2
IT Tralee	Commis Chef	6	16	<2
IT Tralee	Executive Chef	9	16	<2
Limerick IOT	Field Service Engineer – Electrical Technology	7	16	<2
National Institute of Transport and Logistics	Warehouse and Distribution Operative	XXX	50	<2
Plastics Ireland	Polymer Processing Technician	6	40	<3
Zurich Insurance	General Insurance Practitioner	7	100	<3
		TOTAL	1,568	

Appendix G List of Trades Tested in Japan



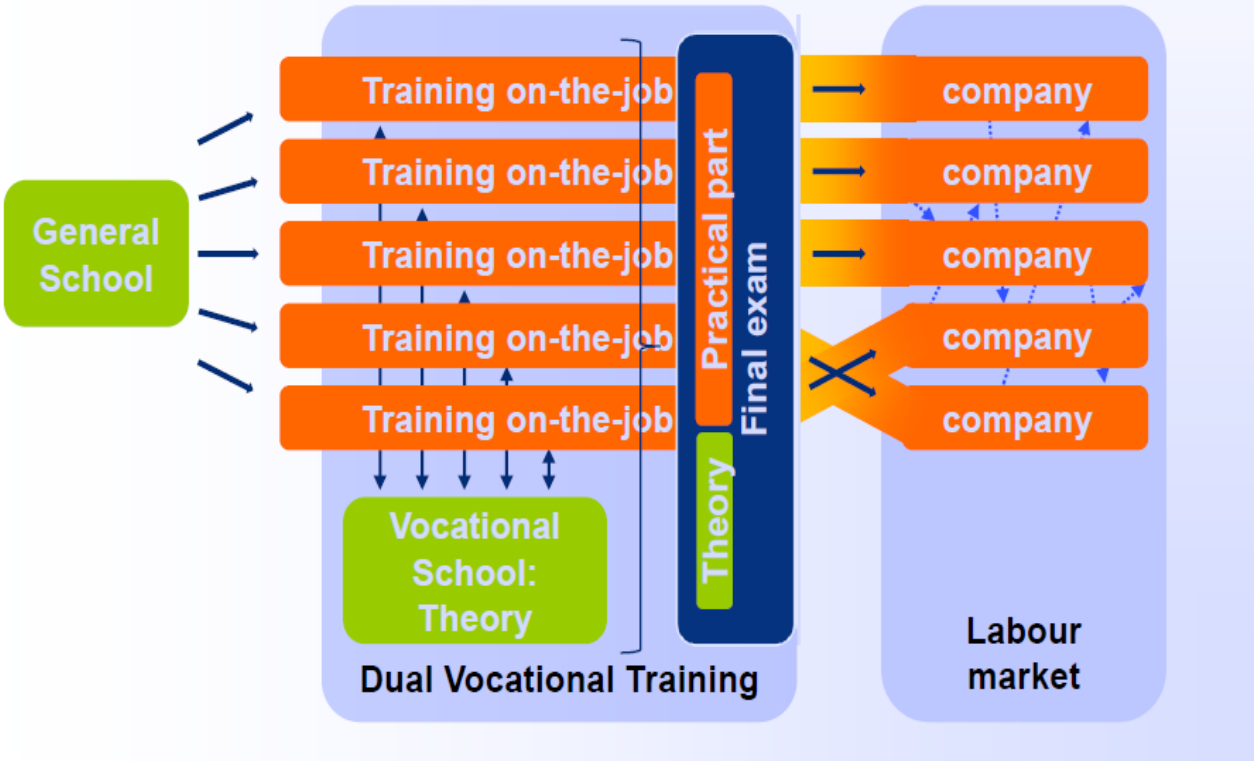
Appendix H Infographic of Traditional Crafts in Japan



Appendix I The German 'Dual System'

<table>
<tr><th>Grade</th><th colspan="4">Secondary school options:</th><th>Approx age (in years)</th></tr>
<tr><td>5</td><td rowspan="6">Gymnasium</td><td rowspan="4">Gesamptschule</td><td rowspan="4">Realschule</td><td rowspan="3">Hauptschule
(Vocational Secondary School)
Towards end of grade 9 learner applies for apprenticeship with company (contract)</td><td>10</td></tr>
<tr><td>6</td><td>11</td></tr>
<tr><td>7</td><td>12</td></tr>
<tr><td>8</td><td>13</td></tr>
<tr><td>9</td><td>14</td></tr>
<tr><td>10</td><td>Preparation/vocational training</td><td>15</td></tr>
<tr><td>11</td><td rowspan="3">Vocational college / gymnasium</td><td rowspan="3">Apprenticeship:
• 4 days per week in the work place
• 1 day per week in Berufsschule (vocational training centre)</td><td>16</td></tr>
<tr><td>12</td><td>17</td></tr>
<tr><td>13</td><td>18</td></tr>
<tr><td>HE</td><td>University / vocational higher education</td><td colspan="3"></td><td>19</td></tr>
</table>

The German system combines training on-the-job with theory classes in vocational schools

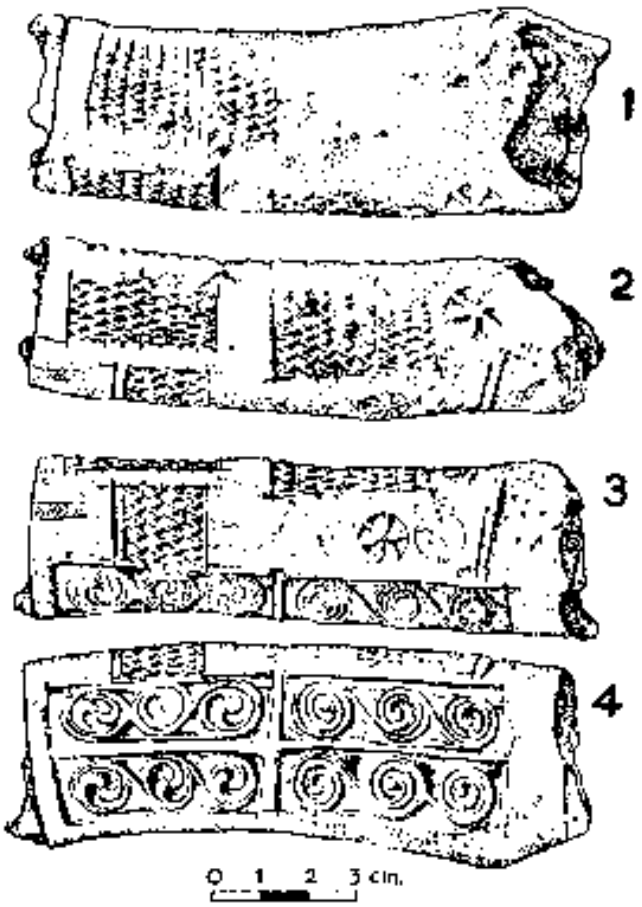


Appendix J Example of Iron Age Trial Pieces

Bone trial pieces, Dooey, Co. Donegal
Breandán Ó Ríordáin and Etienne Rynne

The knowledge of iron working is thought to have been evident in Ireland by *c.* 600 BC. The Iron Age period (600BC-400 AD) can be further broken down into two main phases; Hallstatt and La Tène, though little evidence of the early Iron Age/Hallstatt period has been uncovered in Ireland to date. It is not until the La Tène phase (300 BC) that the Irish progressed into a full iron-using community.

Iron Age culture in Ireland is marked by the transition from bronze to iron working, by the introduction of rotary querns, by a tradition of large decorated stones, of linear earthworks and the continued use of hillforts. Iron Age settlements have also been uncovered on the same sites that were later crannógs and ringforts. The site at Dooey, Co. Donegal produced evidence for unenclosed habitation activity that was later enclosed by a fosse, later still the habitation activity extended beyond the enclosing element. Knoxspark, Co. Sligo is an example of a promontory fort.



Source: http://heritagecouncil.ie/unpublished_excavations/section8.html

Appendix K The Three Phases of Review of the Irish Apprenticeship Review 2013

Phase 1:

1. Appointment of National Apprenticeship Council – Q3 2014
2. Department of Education & Skills, SOLAS and the Higher Education Authority to engage with enterprise sectors to outline plans for promotion of new apprenticeships and seek support – Q3 2014
3. Complete the review of 5 initial trades (Carpentry & Joinery, Electrical, Plumbing, Metal Fabrication and Heavy Vehicle Mechanics) – Q4 2014
4. SOLAS/QQI to review system for revision of existing apprenticeships with a view to acceleration of process – Q4 2014
5. Call for proposals for new apprenticeships:
    a. Development and issue of call for proposals – Q4 2014
    b. Submission of proposals – Q1 2015
    c. Evaluation of proposals under specified criteria – Q2 2015
6. Report to Minister of Education and Skills – Q2 2015
    a. Identify viable proposals
    b. Identify measures to facilitate further progressing of proposals
    c. Identify resource implications
7. Ministerial approval of allocation of resources for new apprenticeships – Q2 2015

Phase 2:

8. Development of new apprenticeships in areas such as Software Development, Financial Services, Medical Devices, Accountancy, Logistics and Hospitality – Q4 2015 –Q2 2016 including;
    a. Establishment of development groups for each apprenticeship
    b. Determine awarding arrangements including potentially new awards
    c. Development of curricula
    d. Identification of clear progression pathways to higher education
    e. Clarification of recruitment processes

f. Determination of the apprenticeship contract

In total 86 new apprenticeships were proposed and approved by 2016, with 25 getting Catergory 1 Status and 36 getting Catergory 2 Status.

Phase 3:

9. Drafting and enactment of legislation to establish Apprenticeship Council on a statutory basis and underpin new apprenticeship system – Q1 2016

10. Ongoing further development of new apprenticeship system. (Department of Education & Skills, 2015)