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School-related subjective well-being promotes subsequent adaptability, achievement, and positive behavioural conduct.

School-related Wellbeing Promotes Adaptability, Achievement and Behavioural Conduct: A Longitudinal Examination

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Abstract

Background: Previous studies have shown that subjective wellbeing and adaptability are linked to adaptive educational outcomes, including higher achievement and lower anxiety. It is not presently clear, however, how school-related wellbeing and adaptability are related, or predict behavioural outcomes such as student misconduct.

Aim: The aim of the present study was to test a bidirectional model of school-related wellbeing and adaptability, and how they relate to achievement and behavioural misconduct.

Method: Data were collected from 539 Year 12 students over four waves. Achievement and behavioural misconduct were measured in the first wave of data collection (T_1), school-related wellbeing and adaptability at the second and third waves (T_2 and T_3), and achievement and behavioural misconduct again in the fourth wave of data collection (T_4).

Results: A structural equation model showed that T_2 school-related wellbeing predicted higher T_3 adaptability, but not vice versa. T_3 school-related wellbeing predicted greater T_3 achievement and behavioural misconduct, and T_3 adaptability predicted greater T_3 behavioural misconduct.

Conclusion: Wellbeing promotes adaptability, achievement, and behavioural misconduct, and adaptability lowers behavioural misconduct. Attempts to foster wellbeing and adaptability could show educational gains for students.

Keywords: School-related wellbeing; adaptability; achievement; behavioural misconduct

School-related Wellbeing Promotes Adaptability, Achievement and Behavioural Conduct

Subjective wellbeing (the presence of positive and absence of negative thoughts and emotions) and adaptability (the capacity to respond positively to change) have been linked to a range of positive educational outcomes including achievement, positive academic beliefs, enjoyment of school and lower anxiety (e.g., Hascher, 2007; Martin, Nejad, Colmar, & Liem, 2012). However, although evidence suggests that subjective wellbeing may vary substantially across different life domains (e.g., Abubakbar et al., 2015), studies of wellbeing in educational settings rarely use measures that are specific to school contexts.

Designs that control for prior variance with outcomes (e.g., achievement) are similarly rare. Furthermore, knowledge of how wellbeing in education settings relates to a range of salient cognate constructs is limited and, to our knowledge, no studies have examined how wellbeing is directionally related to adaptability (i.e., as a predictor or outcome). In the present study we set out to address these concerns. Wellbeing and adaptability were measured over two waves in a sample of students that had transferred to upper secondary education (referred to as 6th form in England, where the data were collected). Their relations with academic achievement and misconduct warnings were examined while controlling for prior achievement and behavioural misconduct.

Subjective Wellbeing

Any scholarly research into wellbeing is faced with the enormous diversity and complexity in the differing definitions and conceptions of this construct. Wellbeing can be defined objectively, using measures such as household income, access to resources, and health status (e.g., OECD, 2009; UNICEF, 2007), as well as subjectively in terms of one's happiness, perceived quality of life, and life satisfaction (Bradshaw & Richardson, 2009), or in relation to one's rights and aspirations (e.g., Pollard & Lee, 2003). Studies of student

wellbeing in educational settings have tended to define wellbeing subjectively through the presence of positive emotions, positive relationships, and the enjoyment of, and engagement in, school (e.g., Humphrey et al., 2011; Wigelsworth, Humphrey, Kalambouka & Lendrum, 2010). In the present study we align with this approach and conceptualise wellbeing in subjective terms.

Focusing explicitly on educational settings, Hascher (2007) defined student subjective wellbeing as the "...holistic quality of student's subjective experience in school with cognitive and affective elements" (p. 333). Cognitive elements of wellbeing refer to one's thoughts, and affective elements to one's feelings, about school, persons in school, and the school context. Cognitive and affective elements can be either positive or negative, and a state of wellbeing conceived of as a surplus of positive relative to negative elements. According to Hasher (2003, 2008), wellbeing in school is observed by presence of three positive indicators: positive attitudes towards school, enjoyment of school, and positive academic self-concept, and the absence of three negative indicators: worry about school, physical complaints in school, and social problems at school (also see Grob, Wearing, Little, & Wanner, 1996; Ryff & Keyes, 1996).

Research has shown how various types of subjective wellbeing are related to positive educational outcomes. Non-school-specific measures of subjective wellbeing have been shown to correlate positively with achievement in primary school students aged 9 years (Miller, Connolly, & Maguire, 2013), achievement in secondary school students aged 12-13 years (von Batenburg-Eddes & Jolles, 2013), and feeling accepted and fitting in at school in secondary school students aged 12-14 years (Frydenberg, Care, Freeman, & Chan, 2009). In a large scale study of students in primary and secondary school (aged 7 – 16 years), achievement correlated positively with various forms of wellbeing (emotional, behavioural, social, and school) at all ages (Morrison-Gutman & Vorhaus, 2012). After controlling for

prior achievement, emotional wellbeing at age 7 years predicted achievement at the age of 11 years, and emotional wellbeing at the of age 11 years predicted achievement at the age of 14 years. In one study, however, wellbeing did not predict subsequent grade or test anxiety in 16-year old grade secondary schools school students after controlling for prior grade and test anxiety (Steinmayr, Crede, McElvany, & Wirthwein, 2016). In one of the few studies to use a school-specific measure, subjective wellbeing was negatively correlated with general school anxiety and test anxiety in secondary school students aged 12 to 17 (Hascher, 2007).

Although the evidence is largely supportive of positive links between subjective wellbeing and academic outcomes, in line with adjacent research areas such as that of achievement emotions (e.g., Pekrun, Goetz, Frenzel, Barchfeld, & Perry, 2011), there are three notable limitations. Firstly, there is a lack of consistency in the conceptualisation and measurement of wellbeing across studies, with many relying on lengthy, aggregated measures that are typically non-school specific. Where general measures are used, it is difficult to draw conclusions about the specific contribution of wellbeing at school to outcome variables such as achievement. Second, with some notable exceptions (e.g., Morrison-Gutman & Vorhaus, 2012; Steinmayr et al., 2016), studies do not control for prior achievement, thus limiting conclusions over the directionality of relations. Third, to date, only a limited range of outcomes have been explored and there is a need to expand the range of examined relations with other educational and psychological outcomes. In the present study we use a newly developed, psychometrically sound brief scale that specifically addresses subjective school-related wellbeing (Loderer, Vogl, and Pekrun, 2016) to examine how wellbeing relates to novel outcomes, namely adaptability and behavioural misconduct, as well as achievement, and utilise a longitudinal design to control for prior variance in achievement and behavioural misconduct.

Adaptability

Adaptability is a psychological construct that captures individual differences in the ways that persons respond to change (VandenBos, 2007). When faced with new, uncertain, or changeable, circumstances, adaptable individuals can constructively regulate cognition, emotion, and behaviour (Martin, 2012; Martin et al, 2012). Cognitive adaptability refers to the capacity adjust thinking to new or uncertain situations, behavioural adaptability to the capacity to attempt new behaviour or modify existing behaviour, and emotional adaptability to regulate the intensity and durations of emotions (see Gross & Thompson, 2007; Heckhausen, Wrosch, & Schulz, 2010). Thus, persons high on adaptability will be able to adjust to new situations in ways that will result in positive outcomes across these parameters. In this way, adaptability can be conceptually differentiated from other psychological constructs that focus on successful responses to adversity such as buoyancy, resilience, and mental toughness (Martin et al, 2012; Martin, Nejad, Colmar & Liem, 2013). Adaptability is focused on responding to change which need to be adverse whereas buoyancy, resilience, and mental toughness, refer to responses to adversity.

As the capacity to respond positively to novel situations and change can be seen as particularly beneficial for maintaining and promoting psychological health and individual resources in dynamic contexts such as academic settings, adaptability is expected to relate to positive educational outcomes. In secondary school students aged 11-19 years, adaptability has been shown to correlate positively with incremental ability beliefs, academic buoyancy, achievement, and enjoyment of school (Martin et al, 2012), and to predict class participation and enjoyment of school controlling for prior variance in class participation and enjoyment of school (Martin et al, 2013). Furthermore, adaptability is indirectly related to lower levels of school-related anxiety, performance-avoidance goals, self-handcapping and disengagement, through increasing personal control over situational demands, in secondary school students aged 11 to 19 years, again accounting for prior variance on focal outcomes

(Martin, Nejad, Colmar, Liem & Collie, 2015). In a sample of undergraduate students aged 18 to 35 years, adaptability indirectly related to end of semester grade through reduced disengagement and self-handicapping behaviour (Collie, Holliman & Martin, 2016).

Linking Subjective Wellbeing and Adaptability

Based on the previous deliberations, we propose that school-related wellbeing and adaptability are related in a bidirectional fashion. That is, students who are more adaptable will over time, all other things being equal, experience a greater sense of wellbeing at school; students with a greater sense of school-related wellbeing will over time, all other things being equal, become more adaptive. The link from adaptability to subsequent school-related wellbeing is founded on the adaption theory of wellbeing (Diener, Lucas, & Scollon, 2006). According to this theory, certain forms of coping and regulatory strategies are more effective and adaptive than others. Cognitive reappraisal, for instance, is associated with more positive emotions, fewer negative emotions, and better social support (Gross & John. 2003) and enhances memory for educational material (Davis & Levine, 2013). In contrast, denial is associated with more negative emotions and dissatisfaction (Bolger & Zuckerman, 1995) and expressive suppression has been shown to be related to more negative emotions, stress-related symptoms, and impairs performance on cognitive tasks (Moore, Zoellner, & Mollenholt, 2008; Johns, Inzlicht, & Schmader, 2008).

However, recent research has indicated the most important predictor of adaptation is not which strategies are used, but whether these strategies are used flexibly (Cheng, 2001). For instance, the ability to both flexibly enhance and suppress emotional expression in line with contextual demands has been shown to promote adaptability (Bonanno, Papa, Lalande, Westphal, & Coifman, 2004) and, across studies, flexibility is proving to be an essential component of psychological health and adjustment (Kashdan & Rottenberg, 2010). Accordingly, we expect persons with greater adaptability would be more flexible in the

strategies used to cope with and regulate responses to novel or uncertain situations, be more likely to choose strategies that result in positive outcomes, and experience a greater sense of wellbeing.

The link from school-related wellbeing to subsequent adaptability is underpinned by the role of positive affect and optimism in facilitating more flexible thought-action repertoires and information processing. In the broaden-and-build theory, positive emotions broaden cognition and attention enabling persons to identify and use novel ideas and actions and build a series of resources and skills (Fredrickson, 2001; Kikken & Fredrickson, 2017). For instance, interventions designed to increase positive affect result in greater self-efficacy (Schutte, 2003) as well as optimism and emotional support from others (Fredrickson & Joiner, 2008). Accordingly, we expect that persons with greater school-related wellbeing will build up a stronger set of resources and skills that could be employed in novel or uncertain school-related situations providing the person with a greater repertoire of coping and regulatory strategies; the person would be more adaptive.

Aims of the Present Study

Previous research has shown that subjective wellbeing and adaptability are related to positive academic outcomes. However, studies have yet to examine how school-related wellbeing and adaptability are interrelated. The aims of the present study were twofold. First it was to examine a bidirectional model of school-related wellbeing and adaptability. Second, it was to examine how school-related wellbeing and adaptability predict two salient educational outcomes, achievement and behavioural misconduct. Using a robust longitudinal design, we measured school-related wellbeing and adaptability on two occasions in a single academic year in a sample of students having transitioned to upper secondary education and control for variance in prior achievement and behavioural misconduct.

Adaptability is a germane construct for the sample examined in the present study. In the English educational system, following secondary school-exit examinations aged 16 years, students can choose a further two years of academic study in a tier of upper-secondary education that is colloquially referred to as '6th form'. Many, but not all schools offer 6th form study and students may chose to continue with 6th form study at their previous school if such study is offered, transition to another school, or move to a college that specialises in education for those aged 16 to 19 years. In the present study, data were collected from students in their first year of a specialist 6th Form College having transitioned from secondary school. These two aims are summarised in Figure 1 and the following hypotheses proposed:

Hypothesis 1: School-related wellbeing will positively predict subsequent adaptability; adaptability will positively predict subsequent school-related wellbeing.

Hypothesis 2: School-related wellbeing and adaptability will positively predict subsequent achievement and negatively predict behavioural misconduct.

[Figure 1 here]

Method

Participants

The participants in this study were 539 students (male = 217, female = 317, missing = 5) from a 6th Form College[1] located in a suburban areas of the North West of England. The ethnic heritage of participants was predominantly white Caucasian (n = 508) with smaller numbers from Asian (n = 16), black (n = 2), mixed (n = 4), and other backgrounds (n = 4). Five participants did not report their ethnic heritage. Thirty-seven participants were eligible for free meals (a proxy for low income). All participants were in Year 12 with a mean age of 16.9 years (SD = .64) at the first point of data collection and studying for General Certificate of Education, Advanced Subsidiary Level, in up to four different subjects[2]. Across the two waves of data collection there were 5.9% missing data that were unrelated to substantive

study variables (wellbeing, adaptability, achievement, and behavioural conduct) or covariates (gender and age). Little's test showed that data were completely missing at random (p >.05) and were handled using full-information maximum likelihood in subsequent analyses.

Measures

Adaptability. Adaptability was measured using the nine-item scale developed by Martin et al. (2012). This scale contains six items referring to cognitive-behavioural adaptability (e.g., 'I am able to think through a number of possible options to assist me in a new situation') and three items referring to affective adaptability (e.g., 'When uncertainty arises, I am able to minimize frustration or irritation so I can deal with it best'). Since cognitive-behavioural and affective elements of adaptability are sub-components and strongly correlate, Martin et al. (2012) advise that they can be combined into a single global construct to avoid issues of collinearity, especially when used as a predictor. Participants responded to items on a five-point scale of 1 = strongly disagree to 5 = strongly agree. The internal consistency, construct validity, and predictive validity across academic and non-academic outcomes have been demonstrated in several studies (e.g., Martin et al., 2012, 2013). In the present study the internal reliability at both points of data collection was excellent (ω >.87).

Wellbeing. Students' school-related wellbeing was measured using a six-item self-report scale developed by Loderer et al. (2016). The items were designed to obtain students' global judgments of their overall wellbeing in school settings (e.g., 'I feel good at school'; 'All in all, I am content with my day-to-day school experiences.'). Confirmatory factor analyses supported the intended one-factor structure of the scale. In the present study, the item wording was slightly adapted to fit the targeted educational context (e.g., 'I feel good at College.'; 'All in all, I am content with my day-to-day College experiences.'). Participants responded on the same five-point scale described above. Internal reliability at both points of data collection was excellent (ω =.90).

Academic achievement. T_1 academic achievement was taken from participants' mean college entry grades from General Certificate of Secondary Examination (GCSE) examination grades. GCSE examinations are standardised examinations taken by students at the end of compulsory secondary schooling (Year 11) in England, Wales, and Northern Ireland. Examinations in all subjects, except for mathematics were graded on an eight-point letter scale (A* being the highest grade, followed by A, B, and so on, to a grade G.). These were converted to a numerical value such that a higher grade received a higher numerical value (A* = 8, A = 7, B = 6, and so on, to G = 1). Mathematics was graded on a nine-point scale (9 = the highest possible grade and 1 = the lowest)[3]. T_4 academic achievement was taken from participants' mean grades on General Certificate of Education Advanced Subsidiary (AS) examination grades taken at the end of Year 12. AS examinations were graded on a five-point letter scale (A being the highest grade and E being the lowest). These were converted to a numerical value such that a higher grade received a higher numerical value (A = 5 and E = 1).

GCSE and AS examinations were set and marked by a government approved and regulated awarding body. It is therefore not possible to provide statistics for the internal reliability of GCSE and AS grades. However, it should be noted that GCSE and AS marking procedures are tightly standardised with highly structured mark schemes, examiner training, and examiner moderation procedures (Office of Qualifications and Examination Regulation, 2014). Research commissioned by the examinations regulator (the Office of Qualifications and Examination Regulation) has shown a high level of internal consistency (Cronbach's αs = .74 – .91), and a high degree of marker accuracy (*r*s between examiner mark and definitive mark = .89 – .91), for GCSE and AS examinations (Bramley & Dhawan, 2010; Dhawan & Bramley, 2012).

Behavioural misconduct. Behavioural misconduct refers to breaches of the College policy on Discipline and behaviour that is logged on a college register. Infringements include, but were not limited to, smoking on college premises, using offensive language, or being absent from college without prior permission. The lower limit of misconduct warning is zero and although in principle there is no upper limit, students with high numbers of verbal warnings would be escalated up a disciplinary procedure and given official warnings that if not heeded could result in temporary or permanent exclusion from college.

Procedure

T_1 achievement data were taken from students' mean GCSE grade on their entry to college. GCSE examinations are taken in May and June at the end of Year 11. T_1 behavioural misconduct was taken from college records to cover the six-week period from starting Year 12 in September to the half-term break (October). T_2 adaptability and wellbeing were measured in November and T_3 adaptability and wellbeing were measured in March of the following year. Questionnaire items were presented in random order, along with demographic information, and administered during a period of the college timetable used for administrative matters. T_4 achievement data were taken from students' mean grade on AS examinations were taken during May and June. T_4 behavioural misconduct was taken from college records to cover the third term of Year 12 (April to July). Although, for brevity, we refer to achievement and behavioural misconduct at the first and fourth waves of data collection as T_1 and T_4, respectively, they were not measured at the same point in time. The project was approved by an institutional research ethics committee and written permission provided by the college Principal. Students provided written consent for T_2 and T_3 self-reported data collection.

Results

Preliminary Analyses

Descriptive data. Descriptive statistics are shown in Table 1. With one exception, adaptability, school-related wellbeing, and achievement, data were normally distributed (skewness and kurtosis within ±1). The exception was T_3 school-related wellbeing that showed a slight negative skew and a leptokurtic distribution. T_4 behavioural misconduct showed a high negative skew and leptokurtic distribution.

The measurement model. A measurement model was built and its structure examined using a confirmatory factor analysis (CFA). Achievement and behavioral misconduct were treated as single-item latent variables. Following estimates derived from the literature (e.g., Hoy, Tarter, & Hoy, 2006; Watkins, Lei, & Canivez, 2007), GCSE and AS examination grades were not treated as perfect indicators of achievement (at T_1 and T_4 respectively), but modelled as $\lambda = .9$ ($\sigma_\varepsilon = .1$). Behavioral misconduct was modeled, at T_1 and T_4, as a perfect indicator ($\lambda = 1$). The corresponding indicators of adaptability and wellbeing at T_2 and T_3 were allowed to correlate.

[Table 1 here]

This CFA, and all subsequent analyses, were performed in M*plus* v.8 (Muthén & Muthén, 2017) using the maximum-likelihood estimator with robust standard errors to account for deviations in distribution observed for T_3 wellbeing and T_4 misconduct warnings. Model fit was established from a variety of indices including the Root mean square error of approximation (RMSEA), standardized root means square residual (SRMR), comparative fit index (CFI), and the Tucker-Lewis index (TLI). A good fitting model is indicate by RMSEA values of <.08, SRMR values <.06, and CFI/ TLI values >.95 (Hu & Bentler, 1999). Several methodologists, however, have cautioned against interpreting these values in an overly strict fashion, especially when used with naturalistic data (e.g., Heene, Hilbert, Draxler, Ziegler, & Bühner, 2011; Lance, Butts, & Michels, 2006). The measurement model showed a relatively good fit, $\chi^2(482) = 730.60$, $p < .001$, RMSEA = .035, SRMR = .048, CFI = .959, and TLI =

.953, by these standards. There were no obvious sources of model misspecification and all items loaded $\lambda \geq .60$ on their respective factors. Internal reliability of adaptability and wellbeing was examined using McDonald's ω. As reported above, estimates showed good levels of internal reliability.

Latent bivariate correlations. To examine latent bivariate correlations, gender (0 = female, 1 = male) and age were added to the measurement model as possible covariates, and modelled as observed variables. This model showed a good fit to the data: $\chi^2(535) = 826.25$, $p < .001$, RMSEA = .035, SRMR = .047, CFI = .954, and TLI = .946. Bivariate correlations are shown in Table 2. School-related wellbeing correlated positively with achievement and negatively with behavioral misconduct. T_3 adaptability was negatively correlated with T_1 behavioral misconduct. Female students reported lower adaptability, lower school-related wellbeing, showed higher achievement, and had lower T_1 behavioral misconduct.

[Table 2 here]

Measurement invariance. Starting with a model of configural invariance, we examined how model fit changed in successive models when factor loadings (metric invariance), item intercepts (scalar invariance), and item residuals (residual invariance), were constrained to be equal over time (see Meredith,1993). An increase in the RMSEA of <.015 and a reduction in CFI and TLI indices of <.01 is indicative of invariance (Chen, 2007; Cheung & Rensvold, 2002; Vandenberg & Lance, 2002). Results are reported in Table 3. College-related wellbeing showed metric and partial scalar invariance, where the constraint for the intercept on one item showed non-invariance, and adaptability showed metric, scalar, and residual invariance. As metric invariance is considered sufficient to model relations over time (Widaman, Ferrer, & Conger, 2010), we proceeded to examine the structural equal model.

[Table 3 here]

Structural Equation Modeling

The model set out in Figure 1 was examined in a structural equation model that included gender as a covariate. Age was not included as no substantially meaningful correlations were shown with substantive study variables in Table 3. This model showed a reasonable fit to the data, $\chi^2(522)$ 832.23, p <.001, RMSEA = .037, SRMR = .051, CFI = .950, and TLI = .943, and so we proceeded to examine standardised path coefficients. T_2 school-related wellbeing predicted T_3 school-related wellbeing (β = .64, p <.001) and T_3 adaptability (β = .18, p =.005). T_2 adaptability predicted T_3 adaptability (β = .62, p <.001) but not T_3 school-related wellbeing (β = .07, p =.26). T_3 school-related wellbeing predicted T_4 achievement (β = .15, p =.04), but not T_3 adaptability (β = -.05, p =.52), over and above the variance accounted for by T_1 achievement (β = .54, p <.001) and T_1 behavioural misconduct (β = -.20, p <.001). T_3 school-related wellbeing (β = .17, p =.01), and T_3 adaptability higher T_4 (β = .14, p =.04), predicted T_4 behavioral misconduct over and above the variance accounted for by T_1 behavioural misconduct (β = .61, p <.001) and T_1 achievement (β = -.13, p <.001). Gender was related to T_1 achievement (β = .23, p <.001), T_2 school-related wellbeing (β = -.16, p =.002), T_2 adaptability (β = -.25, p <.001), and T_1 behavioral misconduct (β = -.11, p =.04). All other relations with gender were not statistically significant (ps >.05).

Discussion

The aim of this study was to, first, examine a directional model of school-related wellbeing and adaptability, and second, examine how school-related wellbeing and adaptability predicted subsequent achievement and behavioural misconduct. Data were collected from a sample of students having transitioned to a tier of upper secondary education (6^{th} form) in four waves over the course of a single academic year. The results showed that T_2 school-related wellbeing predicted higher T_3 adaptability, but not vice versa, offering partial

support for *Hypothesis 1*.T_3 school-related wellbeing predicted greater T_3 achievement and behavioural conduct, and T_3 adaptability predicted greater T_3 behavioural conduct, offering partial support for *Hypothesis 2*.

Based on the broaden-and-build theory it was expected that students with greater school-related wellbeing would be able to identify and use a broader range of thought-action repertoires, including coping and regulatory strategies (Fredrickson, 2001; Kikken & Fredrickson, 2017). In support of this theorization, we found that T_2 school-related wellbeing predicted higher T_3 adaptability, after controlling for T_2 adaptability and concurrent relations between school-related wellbeing and adaptability at T_2 and T_3. Based on the adaption theory of wellbeing, students who are more adaptive are able to chose and use more adaptive forms of coping and regulation (Diener et al., 2006). Such students would be expected to experience more positive emotions, fewer negative emotions, and access better social support (Gross & John, 2003; Johns et al., 2008; Moore et al., 2008). Accordingly, we anticipated that more adaptable students would show greater school-related wellbeing. Although adaptability and school-related wellbeing were concurrently related (*r*s = .53 and .65 for T_2, and T_3, respectively; see Figure 2), T_2 adaptability did not predict T_3 school-related wellbeing, after controlling for T_2 school-related wellbeing and concurrent relations between school-related wellbeing and adaptability at T_2 and T_3.

In summary, we did not find support for a bidirectional model; greater school-related wellbeing predicted greater subsequent adaptability, but greater adaptability did not predict subsequent school-related wellbeing. There are two contextual factors that should be taken into account when interpreting these findings. First, it is plausible that transition to a 6^{th} form college is a novel and uncertain situation and, therefore, adaptability would be likely to influence a successful transition. By the first point of data collection, however, students were approximately two months into the first term. Those students with low adaptability at the

beginning of term, and who may have taken longer to settle into their new environment, may have had sufficient time to adjust by T_2. Second, unlike the subjective wellbeing measure, the adaptability scale used in the present study was not school or college-specific. While this measure has shown links to educational outcomes in other studies (e.g., Martin et al., 2012, 2013, 2015), it is possible that a context-matched wellbeing and adaptability scales would show stronger relations over time. Notwithstanding these speculations, it is possible that adaptability only predicts concurrent wellbeing.

Following the theorisation of school-related being and adaptability as being beneficial for a host of student outcomes (e.g., Hascher, 2003, 2008; Martin et al., 2012, 2013, 2015), it was expected that school-related being and adaptability would positively predict achievement and negatively predict behavioural misconduct. In support, results showed that greater T_3 school-related wellbeing predicted higher T_4 achievement and lower T_4 behavioural misconduct, controlling for the prior variance in T_1 achievement and T_1 behavioural misconduct, and the concurrent relations with T_3 adaptability. Thus, the advantageous nature of higher school-related wellbeing has been demonstrated in a robust fashion. These findings tally with earlier research showing that higher wellbeing is related to subsequent achievement (Miller et al., 2013; Morrison-Gutman & Vorhaus, 2012; Steinmayr et al., 2016; von Batenburg-Eddes & Jolles, 2013) and support the theoretical proposition that the combination of positive cognition, affect, and relationships that comprise wellbeing (e.g., Humphrey et al., 2011; Wigelsworth et al., 2010) result in educational gains.

Greater T_3 adaptability predicted lower T_4 behavioural misconduct, but was unrelated to T_4 achievement, again using the same robust analyses as for T_3 school-related wellbeing (controlling for autoregressive relations with T_1 achievement and T_1 behavioural misconduct and concurrent relations with T_3 school-related wellbeing). Thus, after partialling out the shared variance with T_3 school-related wellbeing, T_3 adaptability remained a unique predictor

of subsequent behavioural misconduct, but not achievement. We anticipated that adaptability would be positively related achievement, due its previously reported relations with achievement (Martin et al., 2012) as well as a nexus of interconnected educationally beneficial constructs related to achievement including class participation, enjoyment of school, and control (Martin et al., 2013, 2015). One study, however, reported that adaptability was only indirectly related to achievement; *r*s were not statistically significant and masked competing positive and negative mediators (Collie et al., 2016). Given the small *r*s that also emerged in the present findings (*r*s = .03 - .10; see Table 2), it is possible that a similar explanation could apply here.

Limitations and Implications for Future Studies

As we highlighted above, the timing of the first wave of self-report measurement may not have been sufficiently close to the beginning of term to capture to utility of adaptability in transition to a novel and uncertain college environment. Furthermore, a general measure of adaptability was used that may not be as sensitive as a school or college-specific measure. Future studies may wish to adapt measures of adaptability to make them context-specific and, where transition is a salient concern, should consider measuring adaptability closer to the start of term so long as it does not interfere with induction processes. Additionally, the nature of the relations between adaptability and achievement needs to be clarified; future studies should consider the role of constructs that could mediate relations between adaptability and achievement. Given that adaptability is theorised to influence regulatory strategies, positive and negative emotions, study behaviours, and cognitions, could all be plausible. Finally, while achievement and behavioural misconduct, and college-related wellbeing and adaptability, were both measured twice over time points, a fully cross-lagged design was not employed. If logical constraints allow, it would be beneficial for future studies to measure

college-related wellbeing and adaptability concurrently with achievement and behavioural misconduct over two or more time points.

Conclusion

The findings of this study further highlighted the beneficial value of student wellbeing for educational outcomes by showing relations with two, hitherto un-researched constructs, adaptability and behavioral misconduct, along with achievement. Students with higher wellbeing subsequently report themselves to be better at responding to novel and uncertain situations, show better achievement on standardised examinations, and are less likely to infringe the college discipline policy. Although adaptability was unrelated to future wellbeing, or achievement, we build on previous studies showing the beneficial value of adaptability by showing relations with behavioral misconduct. Students who report themselves to be better at responding to change are less likely to infringe the college discipline policy. These findings suggest that attempts to foster wellbeing and adaptability would be beneficial for students.

Endnotes

[1]A 6th Form College is an institution providing upper secondary education for Years 12 and 13 found in England and Wales.

[2]General Certificate of Education are qualifications that are typically studied over years 12 and 13. Advanced Subsidiary (AS) examinations are taken at the end of Year 12 and Advanced Level (A Level) examinations are taken at the end of Year 13. From 2016 onwards AS examinations will no longer contribute to the overall A Level grade (Department for Education, 2016).

[3]From 2016-2017 GCSE letter grades in all subjects will be replaced with numerical grades (Long, 2017).

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Table 1

Descriptive Statistics for Achievement, Adaptability, School-related Wellbeing, and Behavioural Misconduct.

	Range	Mean	*SD*	ω	Skewness	Kurtosis	Factor Loadings
T_2 Adaptability	1 – 5	3.55	0.60	.87	-0.53	0.36	.60 – .73
T_2 School-related Wellbeing	1 – 5	3.27	0.54	.90	-0.96	2.16	.74 – .86
T_3 Adaptability	1 – 5	3.54	0.62	.90	-0.63	1.09	.66 – .77
T_3 School-related Wellbeing	1 – 5	3.10	0.58	.90	-0.94	1.63	.69 – .85
T_1 Achievement	1 – 8	5.53	0.72	—	0.33	0.17	—
T_4 Achievement	1 – 6	3.35	1.18	—	0.18	-0.57	—
T_1 Behavioural Misconduct	0 – 22	1.71	3.14	—	2.56	9.96	—
T_4 Behavioural Misconduct	0 – 12	0.80	1.66	—	3.05	11.36	—

Table 2

Latent Bivariate Correlations between Adaptability, School-related Wellbeing, Achievement, Behavioural Misconduct, Gender and Age.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	.10
1. T_2 Adaptability	—	.55***	.71***	.43***	.03	.05	-.09	-.05	-.21***	.03
2. T_2 School-related Wellbeing		—	.52***	.68***	.13*	.11*	-.22***	-.22**	-.11*	-.05
3. T_3 Adaptability			—	.71***	.05	.10	-.15*	-.08	-.18***	-.01
4. T_3 School-related Wellbeing				—	.23***	.27***	-.22***	-.23***	-.10*	-.01
5. T_1 Achievement					—	.60***	-.22***	-.28***	.24***	-.10
6. T_4 Achievement						—	-.34***	-.38***	.14*	.10
7. T_1 Behavioural Misconduct							—	.60***	-.12*	.06
8. T_4 Behavioural Misconduct								—	-.09	.08
9. Gender									—	—
10. Age										—

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 3
Tests of Measurement Invariance

	χ^2	RMSEA	SRMR	CFI	TLI	Δ RMSEA	ΔCFL	ΔTLI
School-related Wellbeing								
Configural	147.12(69)***	.048	.035	.972	.963			
Metric Invariance	153.42(75)***	.046	.044	.972	.965	-.002	<.001	+.003
Scalar Invariance	199.01(81)***	.054	.061	.957	.952	+.008	-.015	-.013
Partial Scalar Invariance [a]	180.89(79)***	.051	.053	.963	.957	+.005	-.009	-.008
Adaptability								
Configural	202.37(120)***	.037	.039	.970	.961			
Metric Invariance	222.10(127)***	.039	.055	.965	.958	+.002	-.005	-.003
Scalar Invariance	236.41(136)***	.038	.061	.963	.959	-.002	-.002	-.001
Residual Invariance	244.42(145)***	.037	.058	.964	.961	-.001	+.001	+.002

[a] Equality constraint relaxed on item 1 (‘College is going well for me’).

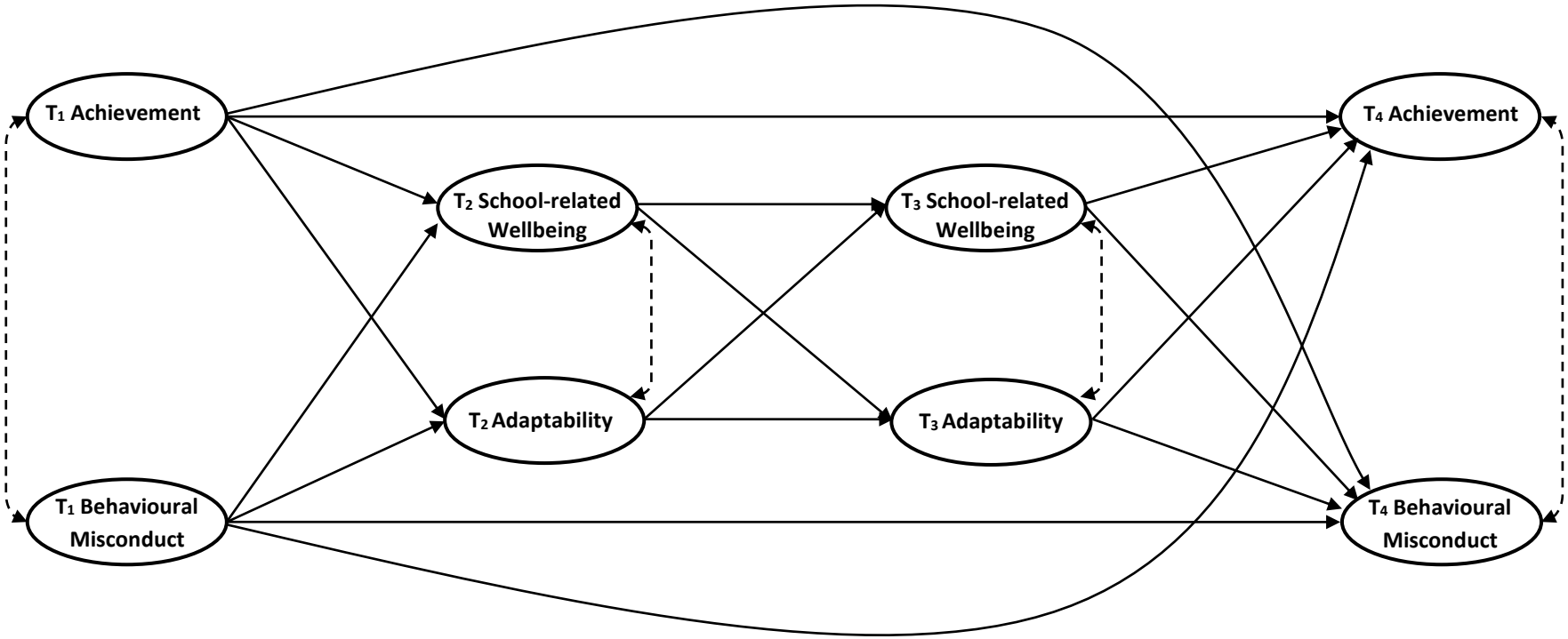

Figure 1. Model to examine bidirectional relations between T_2 and T_3 school-related wellbeing and adaptability, and how T_3 school-related wellbeing and adaptability predict T_4 achievement, and behavioural misconduct, controlling for T_1 achievement, and behavioural misconduct.

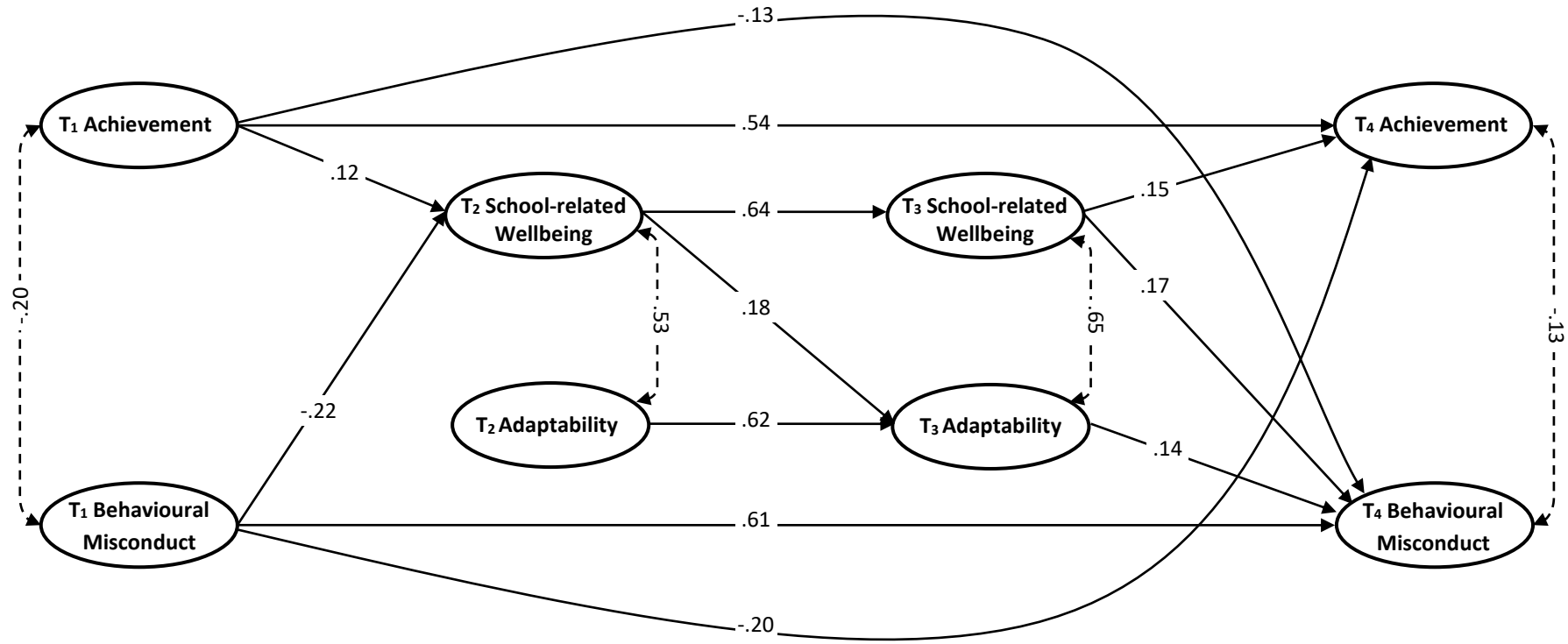

Figure 2. SEM to show relations between T_2 and T_3 school-related wellbeing and adaptability, and how T_3 school-related wellbeing and adaptability predict T_4 achievement, and behavioural misconduct, controlling for T_1 achievement, and behavioural misconduct.