

Boarding School, Academic Motivation and Engagement, and Psychological Well-Being: A Large-Scale Investigation

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Boarding school has been a feature of education systems for centuries. Minimal large-scale quantitative data have been collected to examine its association with important educational and other outcomes. The present study represents one of the largest studies into boarding school conducted to date. It investigates boarding school and students' motivation, engagement, and psychological well-being (e.g., life satisfaction, interpersonal relationships)—controlling for sociodemographic, achievement, personality, and school covariates. The main sample comprised 5,276 high school students (28% boarding students; 72% day students) from 12 high schools in Australia. A subsample of 2,002 students (30% boarding students; 70%

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day students) had pretest data, enabling analyses of gains or declines in outcomes across the school year. Results indicated predominant parity between boarding and day students on most outcome factors, some modest positive results favoring boarding students, and no notable differences in gains or declines on outcomes between boarders and day students over the course of one academic year. Implications for researchers, the boarding sector, parents, and students are discussed.

KEYWORDS: boarding school, motivation, engagement, well-being

Harry climbed the spiral stairs with no thought in his head except for how glad he was to be back. They reached their familiar, circular dormitory with its five four-poster beds and Harry, looking around, felt he was home at last.

—J. K. Rowling, *Harry Potter and the Prisoner of Azkaban*

Within most school systems, boarding schools represent a reasonably well-established sector.¹ For example, there are approximately 170 boarding schools in Australia, 470 in the United Kingdom, and 340 in North America.² However, there is surprisingly little large-scale rigorous research assessing boarding school and students' motivation, engagement, and psychological well-being. Work conducted thus far has been limited to relatively few boarding schools or limited to relatively narrow outcome measures, and so findings and conclusions are susceptible to the idiosyncrasies of those individual schools, with relatively limited applicability across the sector. As yet, no scholars have conducted a comprehensive analysis of boarding school across representative samples of schools an large numbers of students and using appropriate multivariate models to most effectively understand unique variance for boarding school over and above other factors that might explain student outcomes. The present study seeks to address these gaps by investigating the association between day/boarding school status and students' motivation, engagement, and psychological well-being (e.g., life satisfaction, interpersonal relationships), controlling for relevant covariates. Figure 1 provides an overview of the proposed research design.

Boarding School—A Contentious Past and a Modern Practice

Much has been written about negative experiences at boarding school (e.g., Duffell, 2000, 2012; Partridge, 2007, 2012; Schaverien, 2004, 2011; Standish, 2011). Schaverien (2011) identified a cluster of symptoms and behaviors she proposed be classified as “boarding school syndrome”: patterns of trauma observable in many of her adult patients who had attended

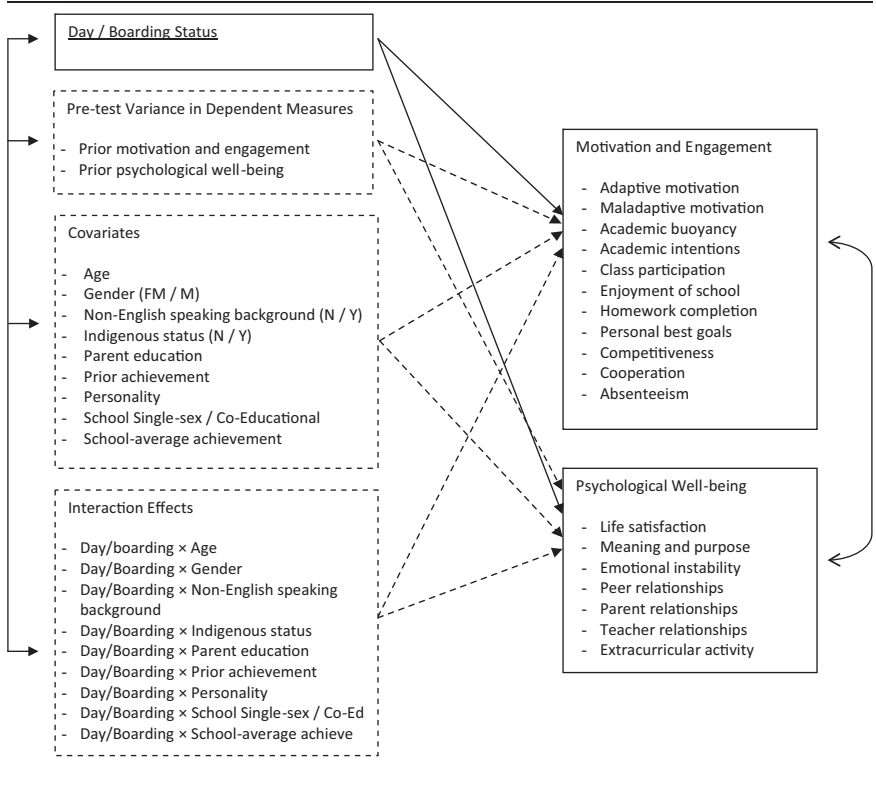


Figure 1. Proposed model of day/boarding status predicting motivation, engagement, and psychological well-being, controlling for prior variance, sociodemographic and achievement covariates, and interactions between day/boarding status and covariates

boarding school. Similarly, Duffell (2000) describes the “strategic survival personality” as successive layers of personality constructed to protect the vulnerable child sent off to boarding school. The research of Elias and colleagues (2012) suggests that some ex-boarders have survived boarding school well, while others have suffered a complex history of trauma and poor mental health. Others have gone further to suggest that the abuse and trauma experienced by some ex-boarders has particularly impacted Indigenous families and communities, resulting in “intergenerational trauma,” a form of posttraumatic stress disorder passed on to the children and grandchildren of Indigenous people who experienced trauma as a result of attending boarding school (Barton, Thommasen, Tallio, Zhang, & Michalos, 2005; Elias et al., 2012; Hirshberg, 2008; Pember, 2007). Thus, there

are personal and historical data suggesting contentious practices and negative effects from the boarding school experience.

Other research finds that many ex-boarders speak with ambivalence about their boarding experience, revealing both positive and negative effects of past boarding school attendance (Hirshberg, 2008), perhaps in much the same way as day students speak of their schooling experience. Alongside this are signs the sector is modernizing, with greater attention to pastoral and academic care, better facilities and resources recognizing the individual needs of students, provision of extracurricular activities to provide a range of opportunities not often available in regional and rural areas, articulation of the responsibilities and rights of boarders, training of staff (Anderson, 1994, 2005; Hawkes, 2010), and greater family involvement (Greene & Greene, 2006; Wheare, 2006; White, 2004). National and state boarding sectors are also formulating standards and compliance guidelines to enhance the practice of boarding (see Australian Boarding Schools Association, 2011b; Department of Education, 2011). A large-scale study into the contemporary boarding school experience is therefore timely. Based on data collected in 2010–2011 from boarding and day students in the same schools taught in the same classrooms, the present study examines links between boarding school and students' motivation, engagement, and psychological well-being.

Distinctions Between Day and Boarding Students

For a greater part of each school day across each year, boarding students work, play, and sleep at school. We contend that this establishes a unique set of circumstances and interactions that delineates the experience of boarding from day students. First, the residential environment of boarding schools provides a particular ecological context in the socialization process different from those of day students, which allows boarding students to engage in a different set of activities and interactions with peers and staff, thus providing differing opportunities for growth and development (Bronfenbrenner, 1970; Holden et al., 2010). Second, to a greater extent than day students, boarding school life involves an elaborate system of regulation and tight scheduling of students' daily routines, dictating when they have to wake or sleep, eat meals, and participate in recreational activities, prescribing how, when, and where they need to complete their homework, the standards for keeping their accommodation neat and tidy, as well as access to telephones and computers, to name a few (Cookson, 2009; Cree, 2000; B. R. Lee & Barth, 2009; Williams, 2011). Third, this results in differences in salient caregiver interactions. While boarding school may put some children further away from important relational assets such as the home, for others the boarding environment may provide a more stable environment than their own home or community, providing safety, security, and less "toxic"

home environments and neighborhoods (Scott & Langhorne, 2012). Fourth, boarders typically spend a greater amount of time with teachers, coaches, and other school staff (e.g., boarding staff) and have greater opportunity to develop mentoring or personal relationships with them than day students (The Association of Boarding Schools [TABS], 2013). Finally, it is suggested that boarding schools develop a collective identity, in addition to formal structures, through traditions, rituals, and symbols associated with their boarding house within the school or the tradition of boarding within the school as a whole. In doing so, boarding schools engender a specific, symbolic ecological context that ties the individual to the collective (Chase, 2008; Finn, 2012; Gaztambide-Fernández, 2009; Khan, 2010). While there are parallels for day students, their exposure to and involvement in these activities and traditions is different and/or more limited (Cookson, 2009). Given the nature of students typically attending boarding school, and the structures and processes of boarding school, it seems reasonable to postulate that boarding school is an environment in which distinct proximal processes are influential. Thus, boarding may impact academic and nonacademic outcomes differentially to day students (Bronfenbrenner, 1994, 2000). This, however, is an open empirical question, one the present study is designed to answer.

Theory Relevant to Boarding School

In shaping perspectives and approaches to this study, it is evident there are numerous theoretical and empirical positions that have a bearing on the conduct of boarding school research. As relevant to the range of dependent measures in this study (motivation, engagement, psychological well-being), the present investigation is informed by ecological systems, positive youth development, extracurricular activity, and attachment theories and perspectives—each discussed below (in the Online Appendix we also detail other perspectives relevant to this area; see the online version of the journal). Importantly, these theories do not directly address boarding school in their formulations; rather, they are relevant to the contextual and psychological processes that boarding school involves. Because the boarding school question has been predominantly couched from applied and practical perspectives, very little theorizing tends to occur in research investigating its status in respect to motivation, engagement, and psychological well-being. Accordingly, we do not believe there are sufficient theoretical bases upon which to posit directional hypotheses regarding boarding school. Thus, because there is no boarding school theory on which to draw, the present study considers theories that provide a basis on which to posit the central *research question* regarding boarding school and students' motivation, engagement, and psychological well-being.

Ecological Systems and Positive Youth Development Frameworks

Bronfenbrenner's (2001, 2005) ecological systems theory emphasizes environmental factors playing major roles in human development. Bronfenbrenner's central ideas are premised on human development reflecting the influence of several environmental systems consisting of successive layers ranging from the micro to the macro as contexts for development. As noted below, these layers have pertinence to boarding school contexts and processes. The model begins with the individual located within the first layer of the microsystem. The microsystem is the pattern of activities, social roles, and interpersonal relations that most immediately and directly impact on the individual's development. For the boarder, for example, these might include the peers in the boarding house and boarding school. The next layer of systems involves the mesosystem. The mesosystem includes the connections and processes occurring between two or more settings in which the individual is involved. These can include, for example, relations between home and the boarding house. The subsequent layer is the exosystem and includes the connections and processes occurring between two or more settings. In the boarding school context, the exosystem may include other boarding houses within the school, in effect creating a local neighborhood whereby events and activities in one boarding house may affect individuals in another boarding house. Bronfenbrenner describes the next layer as the macrosystem, consisting of the overarching pattern of micro-, meso-, and exosystems. The overarching boarding system within a school may be representative of the macrosystem. The final layer of the model is the chronosystem, which encompasses time and transitions in an individual's life. For students, this might represent the passage of time across an academic year. In sum, at various levels of the educational and residential ecology, the boarding house and boarding school represent contexts that are distinct from the home/family environment.

Positive youth development is another perspective that recognizes the importance of connections between individuals and their ecological setting and how these connections are an important basis for young people's development (Benson & Saito, 2000; Fredricks & Eccles, 2008; Lerner, 2005). Positive youth development frameworks have been proposed as perspectives that challenge deficit orientations to young people. These frameworks suggest that all young people have strengths (or the potential to realize their strengths) and that these strengths are developed by aligning young people with the developmental opportunities in their ecologies (Benson & Saito, 2000; Damon, 2004; Lerner, 2005; Witt, 2002). These ecologies include, inter alia, sport, church, the arts, community groups/clubs—and, potentially, boarding school. To the extent that different ecological settings exert different influences on students' outcomes, it is possible that these outcomes might differ between boarding and day students.

Extracurricular Perspectives

Perspectives on extracurricular activity may also shed some light on possible boarding school effects. Extracurricular activity has been defined as any out-of-class involvement that absorbs students' time, attention, and energy (Marsh & Kleitman, 2002). When viewed along this broad continuum, it is evident that boarding can be seen as a form of extracurricular activity. Although findings on the effects of extracurricular activity are mixed, research concerning school-based extracurricular activity is clearer, with effects generally positive (Marsh & Kleitman, 2002). The identification/commitment model of extracurricular activity (Marsh, 1992) posits that school-based extracurricular activities have the potential to "improve school identification, involvement, and commitment in a way that enhances narrowly defined academic outcomes as well as non-academic outcomes" (Marsh & Kleitman, 2002, p. 471). Against this is the zero-sum model that holds that time spent in extracurricular activity is time away from other developmental activities, leading to reductions in diverse outcomes (Marsh & Kleitman, 2002). Empirical research supports the identification/commitment hypothesis and finds that students participating in school-based extracurricular activities are more likely to affiliate with the school and evince positive outcomes (Bryce, Mendelovits, Beavis, McQueen, & Adams, 2004; Fredricks & Eccles, 2005; Hunter, 2005). Thus, site-specific (i.e., school) affiliation enhances student identification with and commitment to that site, leading to positive outcomes for students involved. Because boarding school extends and amplifies students' activity at and with the school, it may be associated with positive outcomes, consistent with school-based extracurricular activity effects (Marsh & Kleitman, 2002).

Attachment Perspectives

Theories of attachment (e.g., Ainsworth & Bowlby, 1991) and parenting style (e.g., Baumrind, 1991) centrally position the role of the parent or home-based caregiving in young people's academic and nonacademic development. Students who are under the regular (e.g., daily) care of parent and home are well placed to form the attachments needed for healthy development. In this context, boarding school may distance young people from these important influences and lead to negative effects relative to day students exposed to the proximal influence of the home—consistent with some research showing negative personal and interpersonal (nonacademic) effects of boarding (e.g., Fisher, Elder, & Peacock, 1990). However, to the extent that this is the case, boarding school may also distance other students from potentially negative parenting and "toxic" home environments and neighborhoods (Bowlby, 1952; Power, 2007; Scott & Langhorne, 2012)—in which case, at an aggregate level, the study may find few significant effects or mixed findings (e.g., Han, Jamieson, & Young, 2000). Furthermore, based

on research demonstrating the motivation and engagement yields of positive relationships with teachers (e.g., Martin & Dowson, 2009), it may be that boarding offers attachments with prosocial adults that can enhance academic and nonacademic well-being. The present investigation is therefore an opportunity to compare boarders and day students who each have different types and amounts of daily parental, caregiver, and teacher interaction.

Research Relevant to Boarding School

Interestingly, Bronfenbrenner (1970) conducted one of the early studies into the effects of boarding school. He compared boarding students with day students in 12 fifth-grade classes across three boarding and three day schools. He proposed that the children's "collective" (i.e., grouping within the boarding school) played a primary role in the socialization process. In the boarding environment, the role of this group is salient and, unlike day students, its influence extends beyond the typical classroom environment and into all aspects of the child's life. In comparison, he proposed that day students were under a similar school environment during the day, but at the end of the day they fell under the influence of two major settings—the family and neighborhood peers. His study found that children raised primarily in a monistic socialization setting (i.e., boarding school) had different outcomes of socialization than those exposed to pluralistic settings. He concluded that children reared primarily in a single socialization setting are more likely to conform to the social pressures in their immediate environment and therefore the boarding environment had a different role in shaping academic and nonacademic development for these students when compared with day students.

One of the largest studies of the effects of boarding school on students' academic and nonacademic outcomes is that commissioned more recently by TABS (2003, 2013) comparing the experiences of U.S. boarding students ($N = 248$), private day students ($N = 212$), and public day students ($N = 268$) matched on socioeconomic status. Of those surveyed, 68% of boarding students, 52% of private day students, and 42% of public day students indicated that attending boarding school helped them develop on a range of nonacademic outcomes (e.g., self-discipline, maturity, independence, cooperative learning, critical thinking). In terms of academic climate, 91% of boarding students, 70% of private day students, and 50% of public day students reported that their school was academically challenging. A total of 95% of boarding students, 86% of private day students, and 86% of public day students were satisfied with their academic experience. Finally, 87% of boarding students, 71% of private day students, and 39% of public day students reported that their schools prepared them for college. Based on these findings, it appears there are positive perceptions of the modern boarding experience.

Of relevance to the present research is the work of Downs (2002), who conducted a longitudinal study exploring adolescents' experiences of transition to boarding school. In terms of self-concept, there were no major changes found for boarding students. Another line of work involved a mixed-methods study of boarding education, comprising quantitative questionnaires as well as ethnographic methods using qualitative interviews to outline the experience from the boarders' perspective (Cree, 1991, 2000). Cree contends that there is evidence that the process of indoctrination and reinforcement of social status commences when new students arrive at boarding schools and that these processes shape the development of boarders during their time at boarding school. Similarly, the views of girls, teachers, and nuns at a boarding school between the 1940s and 1965 were described using an historical methodology (Trimingham Jack, 1999, 2003). More recently, White (2004) conducted a qualitative investigation of students' views in a coeducational boarding school employing a memoir-based humanistic approach. His study of Anglo-Australian and overseas students' attitudes revealed that boarding schools act as a social system that fosters independence and acceptance of cultural diversity.

Duffell (2000, 2012) describes the historical and social context of boarding that was fashionable in the United Kingdom throughout the early to mid-20th century, particularly that of sending children away to boarding school at a young age, which has declined in popularity more recently. He contends that while the boarding experience may have been a happy one for many, there are some experiencing long-lasting negative effects of boarding school (Schaverien, 2011). Indeed, there is a body of work describing the negative experiences of Indigenous youth in residential education settings in the late 19th and early 20th centuries (Armitage, 1995; Auditor-General, 2011; Barton et al., 2005; Cardinal, 1999; Glenn, 2011).

Taken together, these historical, ethnographic, and narrative perspectives have shed important light on diverse boarding experiences. For example, these have described the experiences of Indigenous youth during European colonization throughout the 19th and 20th centuries in a number of countries where Indigenous people were removed from families, often resulting in loss of relationships with family, loss of cultural identity, poor standard of education, and long-term mental health issues (Barton et al., 2005; Smith, 2010). Other research has investigated the effects of boarding from a young age (e.g., Duffell, 2000, 2012; Partridge, 2007, 2012; Schaverien, 2004, 2011; Standish, 2011) or attending boarding schools run by religious organizations throughout the 20th century (e.g., Trimingham Jack, 2003). Only more recently in the 21st century have studies examined contemporary experiences of and factors affecting student transition to boarding school. These generally show that relationships with parents tend not to be maladaptive (e.g., Cree, 2000; TABS, 2003, 2013; Whyte & Boylan, 2008), that boarders tend to develop the personal resources to

cope with living away from home (e.g., Bramston & Patrick, 2007; Downs, 2002; Ronen & Seeman, 2007; Whyte & Boylan, 2008), and that boarding school can cultivate a range of academic and nonacademic outcomes (e.g., cooperative learning, self-discipline, maturity, independence, critical thinking; e.g., TABS, 2003, 2013). A number of authors also contend that some boarding schools are environments that perpetuate societal and institutional power structures and gender ideologies (Chase, 2008; Cookson & Persell, 1985; Finn, 2012; Gaztambide-Fernández, 2009; Khan, 2010). While key findings from this diverse body of research are suggestive of boarding effects on these factors, they nevertheless do not address issues of central concern to this study—namely, specific impacts on motivation, engagement, and psychological well-being across numerous schools in a multivariate quantitative research design. This is the central purpose of the present investigation.

Outcomes and Covariates Important to Assess

To date, no boarding research has evaluated a range of motivation, engagement, and psychological well-being outcomes, controlling for potential confounds and juxtaposing boarding with day students. As described below, the present study seeks to traverse the range of these factors to most appropriately assess boarding school and its links with students' academic and nonacademic experiences.

Motivation, Engagement, and Psychological Well-Being

A wide range of academic and nonacademic indicators are required to understand more of the totality of students' development in the context of the structures or systems under investigation (Martin, 2009, 2010). Boarding school is considered one such structure or system. The first set of academic outcomes includes motivation (via adaptive factors such as mastery orientation and maladaptive factors such as self-handicapping) and engagement (via cognitive, affective, and behavioral factors—see Fredricks, Blumenfeld, & Paris, 2004—such as academic intentions, enjoyment of school, and class participation respectively). Two additional behavioral engagement measures include homework completion (class-related engagement) and absenteeism (school-related engagement), consistent with Green and colleagues' (2012) investigation into adolescent engagement. These motivation and engagement factors represent central constructs in educational psychology and are predictive of or result from important educational factors and processes (Christenson, Reschly, & Wylie, 2012). Consistent with Marsh, Hau, Artelt, Baumert, and Peschar (2006), measures of student approaches to learning are an important supplement in diverse educational psychology studies and are useful for understanding new educational psychology phenomena, such as the effects of boarding school.

Our study's operationalization of approaches to learning include the classic competitive and cooperative orientations and the more recent personal best goals construct (Martin & Liem, 2010). Finally, issues of resilience have often been raised with regards to boarding school (Martin, Papworth, Ginns, & Nejad, 2012; White, 2004). The present study is an opportunity to investigate this in the academic domain. Of particular interest is students' "everyday" academic resilience, referred to as academic buoyancy (Martin & Marsh, 2009).

In terms of psychological well-being, adolescence is the stage when one's developmental task is to search for and begin to establish life purpose (Erikson, 1968). Inadequate completion of this task leads to role confusion, potentially foiling or placing strain on one's well-being. This is consistent with models of psychological well-being and flourishing (e.g., Diener, Kesebir, & Tov, 2009; Seligman, 2002; Steger, Kashdan, Sullivan, & Lorentz, 2008). Hence, sense of meaning and purpose is one psychological well-being factor under focus here. Satisfaction with life is another psychological well-being marker. Research has associated life satisfaction with broadened cognitive capacity and resources (Fredrickson, 2001). The role of boarding in students' life satisfaction is therefore also examined. A further dimension of psychological well-being refers to young people's interpersonal health and well-being (Baumeister & Leary, 1995; Furrer & Skinner, 2003; Wentzel, 1999)—operationalized in this study through teacher–student relationships, parent relations, and peer relations (Martin, Marsh, McInerney, & Green, 2009). In terms of problematic dimensions of well-being, maladaptive development is associated with psychological distress and poor mental health outcomes (Wrosch, Scheier, Miller, Schulz, & Carver, 2003). The present study explores poor mental health in the form of emotional instability—individuals' emotional confusion, moodiness, worry, and tendency to be unsettled and upset (Marsh, 2007).

Relevant Covariates

It is possible that boarding status is systematically correlated with various background factors that are also associated with motivation, engagement, and psychological well-being outcomes. It is important to partial out such variance to better understand boarding school. We do so in relation to day school status, gender, age, language background, Indigenous (Aboriginal) status, prior achievement, parents' education, personality, and school attributes.

In relation to day students, it is vital that boarding be considered alongside day school status. In the present study, boarding students and day students are in the same school and taught in the same classrooms by the same teachers. Thus, the inclusion of day students in the study represents a major opportunity to understand variance unique to boarding students. In terms of

sociodemographic factors, due to background and contextual disadvantage, it is not uncommon for non-English-speaking background, Indigenous, or low socioeconomic status (SES) students to experience academic adversity, under-achieve and disengage (Martin, 2004; Organisation for Economic Co-operation and Development [OECD], 2006; Sirin, 2005). Thus, variance attributable to SES, Indigenous status, and language background is important to control when seeking to understand boarding school. In a related vein, parents' education may confound findings. It is necessary to know if outcomes are associated with boarding school or with parental education (Hattie, 2009). In terms of gender, research has pointed to declining levels of achievement and engagement among boys over the past decade or so (see Rowe & Rowe, 1999; Weaver-Hightower, 2003). In addition, research has indicated a decline on some engagement factors as students move further into high school, and so age and gender are also included as control factors (Martin, 2009).

We suggest achievement and personality are relevant to this study. It is possible there are prior differences on these factors between boarding and day students and that parents may select children into boarding school based on these characteristics; though, given the dearth of prior research and theory, we acknowledge that the bases for positing potentially prior differences between boarding and day students in achievement and personality is somewhat speculative (hence, an empirical question for our study). In relation to achievement, there is a significant link with outcomes such as engagement and motivation (Hattie, 2009). Indeed, reciprocal effects models of achievement and motivation suggest that prior achievement influences subsequent motivation factors and vice versa (Marsh, 2007; Valentine, DuBois, & Cooper, 2004). Thus, it is important to control for variance attributable to prior achievement. Variance may also be partly explained by personality (O'Connor & Paunonen, 2007; Thompson, 2008). For example, is it the case that parents may make decisions about whether to send their child to boarding school based on the child's temperament and his or her perceived capacity to "cope" in boarding school? Insofar as this is possible, personality is included as a covariate.

Finally, school factors may also be relevant. For example, Marsh and Rowe (1996) found that when the effect of individual ability is controlled, there is a negative impact of school-average ability on academic self-concept. Other research has suggested school gender composition effects, with single-sex schools scoring slightly higher in academic achievement (V. E. Lee & Bryk, 1989) and greater polarization of subject-specific attitudes in coeducational environments (Stables, 1990). Thus, school-average ability and school gender composition are also included as covariates. Taken together, prior research into boarding school has not concurrently controlled for sociodemographic, prior achievement, personality, and school factors that may explain variance in outcomes. Thus, disentangling such variance extends and enhances our understanding of boarding school. Moreover,

consistent with Bronfenbrenner (1986), the inclusion of both “social address” (e.g., gender, language background, parent education) and “person-process” factors (e.g., personality and its role in a longitudinal context) as well as exploring for moderation between day/boarding status and personality provide a broader basis for answering developmental questions.

Factors That May Moderate Boarding School Effects

Alongside modeling day/boarding status as a main effect (i.e., whether boarding or day status is associated with higher or lower scores on dependent measures), we also investigate whether day/boarding status effects are moderated by other factors. Thus, for example, do the effects of day/boarding status vary as a function of students’ age, Indigenous status, parental education, prior achievement, personality, and the like? In Australia, for example, the nature of geography poses educational access issues particular to that country (Alston & Kent, 2003). National inquiries into educational access for stakeholders such as Indigenous, rural, remote, or low SES students have identified boarding school as one means of access to education and further opportunity (e.g., Australian Human Rights Commission, 2000; Bourke, 1997; Curto & Fryer, 2011). Hence, is there a particular yield to these students for attending boarding school? In our introduction we also identified some of the contentious history associated with boarding school. This has partly been attributed to the young age some students have been placed in boarding school. Following from this, it may be that age moderates boarding effects such that more negative results are associated with younger boarders. Thus, assessing potential moderators of boarding school is important to more fully understand it—and also for any practical interventions and policy should significant moderators be identified.

Aims of the Present Study

Although boarding school has been a feature of education systems for centuries, surprisingly few large-scale quantitative data have been collected to examine its links to student motivation, engagement, and psychological well-being. Following from a somewhat contentious history, the boarding sector has sought to “modernize” its academic and pastoral practices. It is opportune to now conduct a large-scale investigation into boarding school and its association with motivation, engagement, and psychological well-being outcomes. This study does so by investigating the extent to which day/boarding status predicts motivation, engagement, and psychological well-being—controlling for sociodemographic, prior achievement, personality, and school factors. In additional analyses with a longitudinal subsample, the study investigates gains or declines in motivation, engagement, and psychological well-being across the course of a year for day and boarding students. When considering theory and past research, it is difficult to

hypothesize directional boarding school effects; some theoretical and empirical perspectives suggest negative effects and others suggest positive effects or findings of parity. Given this, we position the study in terms of a research question: What is the association between day/boarding school status and students' motivation, engagement, and psychological well-being, controlling for relevant covariates? Figure 1 demonstrates the design relevant to this question.

Method

Sample and Procedure

In 2011, data were collected from 5,276 school students in junior high 11 to 14 years (52%) and senior high 15 to 19 years (48%) from 12 high schools in major cities and regional areas of Australia. A total of 28% were boarders and 72% were day students. Schools in the sample comprised students of mixed ability (but higher in achievement and SES than the national average). Six of the schools were coeducational, three schools comprised girls only, and three schools comprised boys only. Just fewer than half (43%) of the respondents were female and 57% were male. The mean age of respondents was 14.41 ($SD = 1.61$) years. A total of 9% of the sample spoke a language other than English at home and 5% were Indigenous. With few exceptions, targeted students in attendance on the day of the testing participated in the survey. Teachers administered the instrument to students during class. The rating scale was first explained and a sample item presented. Students were asked to complete the instrument on their own and to return the completed instrument at the end of class.

Longitudinal Subsample: Assessing Gains and Declines

For a proportion of the cross-sectional sample ($N = 2,002$), pretest data were available from 1 year earlier (2010). By including pretest scores in modeling, a positive predictive parameter (beta) can be interpreted as a gain across the course of the year and a negative predictive parameter as a decline across the year. In this way, we can determine if day/boarding status predicts gains or declines in outcomes. The longitudinal subsample comprises students in junior high 11 to 14 years (41%) and senior high 15 to 19 years (59%) from the same 12 high schools described above. A total of 30% were boarders and 70% were day students. Just fewer than half (43%) of the respondents were female and 57% were male. The mean age of respondents was 14.88 ($SD = 1.36$) years. A total of 8% of the sample spoke a language other than English at home and 4% were Indigenous.

To check that there were no significant differences between students participating at both times and students participating only at one time, we performed tests of invariance that compared the factor structure for

unmatched and matched students at pretest and posttest (1 year apart). Comparing a model where all parameters were freely estimated and one where loadings, residuals, and correlations were constrained across the unmatched and matched groups, there was support for invariance, based on a change in comparative fit index (CFI) of no greater than .01 (Cheung & Rensvold, 2002) and a root mean square error of approximation (RMSEA) no greater than .015 (Chen, 2007). Based on the comparable measurement properties for the two groups, we conclude that the students in the longitudinal subsample can be considered broadly representative of students at the 12 schools.

Materials

Descriptive and psychometric statistics for each of the measures are detailed in the results section and in Table 1.

Motivation and Engagement

Motivation. Academic motivation was assessed using the adaptive and maladaptive motivation dimensions of the Motivation and Engagement Scale (MES; Martin, 2009). Adaptive motivation comprises mastery orientation (e.g., “I feel very pleased with myself when I do well at school by working hard”), self-efficacy (e.g., “If I try hard, I believe I can do my schoolwork well”), persistence (e.g., “If I don’t give up, I believe I can do difficult schoolwork”), valuing school (e.g., “Learning at school is important”), task management (e.g., “When I study, I usually try to find a place where I can study well”), and planning (e.g., “I try to plan things out before I start working on my homework or assignments”). Maladaptive dimensions are disengagement (e.g., “I’ve pretty much given up being involved in things at school”) and self-handicapping (e.g., “I sometimes put assignments and study off until the last moment, so I have an excuse if I don’t do so well”). Students rated items on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). In prior work, the MES has demonstrated a strong factor structure and reliable dimensions that are approximately normally distributed, is associated with literacy, numeracy, and achievement, and is sensitive to age and gender effects in motivation and engagement (Green, Martin, & Marsh, 2007; Liem & Martin, 2012; Martin, 2007, 2008, 2009).

Additional engagement measures. Alongside the MES were additional engagement measures designed to capture a further range of factors (e.g., see Green et al., 2007; Martin, 2007, 2008, 2009). These were academic intentions/aspirations (e.g., “I intend to complete school”), school enjoyment (e.g., “I enjoy being a student at this school”), academic buoyancy (e.g., “I don’t let study stress get on top of me”), class participation (e.g., “I participate when we discuss things in class”), homework completion (“How often

Table 1

Descriptive and Reliability Statistics

	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	Reliability	Factor Loading <i>M</i>	Correlation With Day/ Boarding Status
Gender (F/M)	1.57	0.49	-0.28	-1.91	—	1.00	.06
Age	14.41	1.61	-0.01	-0.86	—	1.00	.14***
Non-English-speaking (N/Y)	1.08	0.27	2.97	6.87	—	1.00	.04
Parent education	4.63	1.36	-0.64	-0.69	.68	0.73	-.20*
Indigenous (N/Y)	1.95	0.22	-4.05	14.46	—	1.00	.22***
Prior achievement	7.32	1.57	-0.40	0.19	.83	0.84	-.18***
Agreeableness	5.42	0.98	-0.71	0.39	.82	0.83	-.10*
Conscientiousness	4.71	1.10	-0.12	-0.17	.82	0.85	-.01
Extraversion	4.90	1.05	-0.29	-0.17	.80	0.83	-.06*
Neuroticism	3.70	0.97	-0.01	0.12	.72	0.76	.06***
Openness	4.95	0.94	-0.27	-0.04	.73	0.78	-.13***
All-girls school	0.13	0.33	2.19	2.82	—	1.00	-.08
All-boys school	0.30	0.45	0.86	-1.25	—	1.00	.09
School-average achievement	589.73	35.55	-0.14	-1.29	—	1.00	.02
Adaptive motivation	5.17	0.91	-0.39	0.04	.88	0.74	-.03
Maladaptive motivation	2.47	1.13	0.65	-0.24	.72	0.76	.09*
Academic buoyancy	4.58	1.25	-0.35	-0.05	.79	0.85	-.02
Enjoy school	5.35	1.42	-0.86	0.13	.90	0.91	-.03
Academic intentions	5.77	1.19	-1.10	0.75	.82	0.83	-.09
Class participate	5.24	1.25	-0.56	-0.06	.89	0.90	-.05
Personal best goals	5.22	1.18	-0.42	-0.16	.88	0.88	-.03
Competitiveness	4.92	1.29	-0.43	-0.19	.80	0.84	-.01

(continued)

Table 1 (continued)

	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	Reliability	Factor Loading <i>M</i>	Correlation With Day/Boarding Status
Cooperation	5.07	1.13	-0.52	0.16	.81	0.85	-.07*
Homework completion	4.20	0.77	-1.01	1.44	—	1.00	-.06
Absenteeism	5.24	6.57	4.25	25.04	—	1.00	-.04*
Meaning and purpose	4.90	1.32	-0.46	-0.12	.82	0.85	.03
Life satisfaction	4.97	1.17	-0.49	0.02	.79	0.80	-.01
Emotional instability	3.82	1.37	0.01	-0.53	.82	0.86	.06***
Peer relationships	5.44	1.14	-0.87	0.56	.84	0.84	-.08*
Parent relationships	5.66	1.28	-1.01	0.47	.84	0.87	.07*
Teacher relationships	5.10	1.23	-0.63	0.11	.87	0.87	-.01
Extracurricular activity	3.81	2.86	1.11	2.00	.76	1.00	.07*

Note. All sociodemographic, prior achievement, school, absenteeism, and homework factors are single indicators. Statistical significance of correlations depends on the *SE* of the parameters. Thus, lower absolute values can yield higher levels of statistical significance.

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

do you do and complete your homework/assignments?”), and absenteeism (“About how many days were you absent from school last term?”). For the four former scales, items were rated on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. For homework completion, students rated themselves on a 1 (*never*) to 5 (*always*) rating scale and for absenteeism students reported the number of days absent. Although it might be assumed that boarders will be more likely to attend school, this cannot be taken as a predetermined fact. Absenteeism may be due to poor mental and/or physical health, academic difficulties, teacher–student difficulties, problems with peers, and so on—and there is no reason to assume that boarders are unlikely to experience such challenges. Absenteeism is thus a meaningful dependent variable. Previously, the multi-item factors have shown sound and reliable factor structure, are approximately normally distributed, and are associated with academic outcomes (Green et al., 2007; Liem & Martin, 2012; Martin, 2007, 2008).

Student Approaches to Learning. Student Approaches to Learning (SAL) is an instrument used in OECD’s PISA studies measuring effective academic functioning. Marsh et al. (2006) showed that SAL’s psychometric properties (reliability, factor structure, construct validity) were invariant across nationally representative samples from 25 countries. The Cooperative Learning scale consists of five items and asks students about the extent to which they like to work with other students. An example of the items is “It is helpful to put together everyone’s ideas when working on a project.” The Competitive Learning scale consists of four items and measures the extent to which students like to compete with others. An example of the items is “I like to try to be better than other students.” Both scales are rated on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. The present study also includes Personal Best Goals, which is grouped under the SAL concept. Personal best goals are defined as specific, challenging, competitively self-referenced targets that students strive toward. Sample items are “When I do my schoolwork I try to do it better than I’ve done before” and “When I do my schoolwork I try to get a better result than I’ve got before” (Martin, 2006; Martin & Liem, 2010). This measure comprises four items, is rated on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale, and has been validated in previous research on engagement and achievement (Liem, Ginns, Martin, Stone, & Herett, 2012; Martin, 2006; Martin & Liem, 2010).

Psychological Well-Being

Psychological well-being comprised sense of meaning and purpose, satisfaction with life, emotional instability, peer relations, parent relations, teacher relations, and extracurricular activity. Except for extracurricular activity, in each of these measures students were asked to rate each

statement on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. For extracurricular activity, students were asked to indicate whether they participated in a list of 15 extracurricular activities (e.g., sport, debating, student council, etc.) to give a summed measure of the breadth of involvement.

Sense of meaning and purpose (e.g., “My personal beliefs give meaning to my life”) measured participants’ sense of meaning and purpose in their life. These items were drawn from the World Health Organization Quality of Life Instrument (WHOQOL, 1998). It has previously shown sound reliability (WHOQOL, 1998). *Satisfaction with life* (e.g., “In most ways my life is close to my ideal”) assessed participants’ satisfaction with their life in general. The items were derived from the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). The scale has previously demonstrated good reliability (Pavot & Diener, 1993). *Emotional instability* (e.g., “I worry more than I need to”) examined respondents’ emotional instability in the forms of general (nonacademic) worry and stress. The items are from the Self-Description Questionnaire II (SDQ-II) and have previously demonstrated sound psychometric properties (Marsh, 2007).

Interpersonal relationships. Also of interest in this research are links between boarding school and peer, parent, and teacher–student relationships (from Martin & Marsh, 2008). The *teacher–student relationship* scale is a measure of a students’ perception of having a good or positive relationship with their teachers and consisted of four items, for example, “In general, my teachers really listen to what I have to say” (Martin & Marsh, 2007). *Parent–child relationship* is described as students’ self-perception of their relationship with parents—whether they like their parents and the quality of their interactions, an example item being “My parents understand me.” The SDQ-II measures of same-sex peer and opposite-sex peer relationships were combined to form a generic scale of *peer relationships*. This scale measured students’ self-perceptions of how well they get along with peers, for example, “Overall, I get along well with other students at this school.”

Extracurricular activity. Although students at the sample schools are expected to involve themselves in extracurricular activity, the breadth of involvement is discretionary. The breadth of extracurricular activity is thus a potentially useful indicator of the participatory nature of boarding and day students—along the lines of what might be of interest under positive youth development perspectives. Accordingly, students were asked to check one or more activities in the areas of school involvement, academic activities/clubs, sports, prosocial activities, as well as self-nominated activities. Student responses were summed to generate an extracurricular factor that indicated the number or breadth of extracurricular activities in which students participated that year. Items were based on studies by Eccles and

Barber (1999) and Feldman and Matjasko (2005). In the Online Appendix (see the online version of the journal) we explore the association between day/boarding status on each of the 15 extracurricular activities to provide a greater sense of what activities boarders do and do not engage in.

Sociodemographic and prior achievement covariates. Sociodemographic data were collected on gender (0 = *female*, 1 = *male*), age, language spoken at home (0 = *English-speaking*, 1 = *non-English-speaking*), parent/caregiver highest level of education (1 = *no formal qualification* to 4 = *university undergraduate or higher degree*), and Indigenous status (0 = *non-Indigenous*, 1 = *Indigenous*). Prior achievement was based on students' self-reports of results in annual nationwide assessment of literacy and numeracy (National Assessment Program in Literacy and Numeracy, NAPLAN) that is administered by the Australian Curriculum, Assessment and Reporting Authority (ACARA, 2011). NAPLAN is a nationally standardized test for which school students receive a score for literacy and numeracy. In this study, an achievement factor was formed by the two literacy and numeracy scores. In prior work, this achievement factor has shown a reliability of $\alpha = .81$ (Martin, Nejad, Colmar, & Liem, 2012).

Personality covariates. Extraversion, openness to experience, neuroticism, conscientiousness, and agreeableness (8 items per factor) were assessed using the 40-item International English Big-Five Mini-Markers instrument (IEBM; Thompson, 2008). Participants rated the extent to which 40 trait adjectives were accurate descriptors of themselves. Items for the IEBM are each represented by one word in which the respondent rates themselves 1 (*very inaccurate*) to 7 (*very accurate*). Sample words for each factor are as follows: *talkative* (extraversion), *creative* (openness), *moody* (neuroticism), *efficient* (conscientiousness), and *warm* (agreeableness). Thompson (2008) has previously demonstrated the reliability and predictive validity of the five factors among adolescents.

School-level covariates. Participant schools were classified in terms of school gender (single-sex female, single-sex male, and coeducational) and school-average achievement collated from data publically available on the ACARA website. These were included to understand their role in predicting motivation, engagement, and psychological well-being and also their role as covariates, so unique variance attributable to boarding school was identified, after controlling for school characteristics.

Data Analysis

Central analyses involved confirmatory factor analysis (CFA) and structural equation modeling (SEM) within Mplus (Muthén & Muthén, 2012). Maximum likelihood with robustness to nonnormality (Muthén & Muthén,

2012) was the method of estimation used for CFA and SEM as it is regarded a robust method with moderate to large sample sizes (Hoyle, 1995). Although we do not have enough schools to conduct multilevel modeling, we adopt a conservative approach and adjust for clustering of students within schools through the “cluster” command under the “complex” method using Mplus. This provides adjusted standard errors and so does not bias tests of statistical significance from clustering within schools (Muthén & Muthén, 2012). RMSEA and CFI are emphasized as fit indices. RMSEA values at or less than .08 and .05 are taken to reflect close and excellent fits, respectively (see Schumacker & Lomax, 2010); CFIs at or greater than .90 and .95 are typically taken to reflect acceptable and excellent fits, respectively (McDonald & Marsh, 1990). Due to the many multi-item factors relative to size of some of the subsamples involved in analyses, we estimated latent factors through randomly assigned item parcels (see Little, Cunningham, Shahar, & Widaman, 2002). We are mindful some commentators are accommodating of items parcels (e.g., Little, Rhemtulla, Gibson, & Schoemann, 2013), whereas others have more robustly demonstrated weaknesses associated with their use (e.g., Marsh, Lüdtke, Nagengast, Morin, & Von Davier, 2013). One of the most extensive and recent demonstrations of parceling limitations is that by Marsh et al. (2013), who argued that at a minimum, unidimensionality must be demonstrated. In the Online Appendix (see the online version of the journal) we provide findings on analyses demonstrating no major cross-loadings ($> .30$; Hair, Black, Babin, & Anderson, 2009) as some evidence of unidimensionality. This, in conjunction with the sound reliabilities (Table 1) and the need to reduce estimated parameters, provides bases upon which to pursue item parcels.

SEM involved inclusion of covariates (sociodemographics, prior achievement, personality, school factors) alongside the focal factor, day/boarding status. Thus, analyses were able to partial out the effect of covariates in order to gain a sense of unique variance attributable to day/boarding status. All dependent variables were assessed in the same multivariate model so that their shared variance could be accounted for. Missing data are also important to consider, especially when the amount of missing data exceeds 5% (e.g., Graham & Hoffer, 2000). There are limitations with listwise, pairwise, and similar substitution approaches to missing data (Graham & Hoffer, 2000), and this has led to recommendations for the use of the Expectation Maximization Algorithm. In this study, less than 5% of data were missing, and so the Expectation Maximization Algorithm was employed as operationalized in LISREL 8.80 (Jöreskog & Sörbom, 2006).

Results

Descriptive and Psychometric Statistics

Prior to central modeling, descriptive and psychometric statistics were assessed. Results are presented in Table 1. They show that multi-item scales are reliable, as indicated by Cronbach's alpha. Most of the scales are approximately normally distributed—with the exception of variables that are known to have skew or excessive kurtosis (e.g., absenteeism, ethnicity, Indigenous). To test factor structure, CFA was conducted, identifying good fit to the data, $\chi^2 = 8816.25$, $df = 1135$, CFI = .93, RMSEA = .036. Mean factor loadings are presented in Table 1 and range between .73 and .91. Correlations between day/boarding status and all other factors are also shown in Table 1. Significant effects for covariates indicate that (relative to day students) boarders tend to be older, lower in parental education, lower in prior achievement, lower in agreeableness, lower in extraversion, higher in neuroticism, and lower in openness. There is also a higher proportion of Indigenous students in the boarding school subsample than the day school subsample. Thus, to the extent that these covariates are associated with outcome variables, their significant correlation with day/boarding status must be statistically controlled to understand unique variance attributable to day/boarding status. Significant effects indicate that boarders are higher in maladaptive motivation, lower in cooperation, higher in emotional instability, and lower in peer relations. However, they are also lower in absenteeism and higher in parent relations and extracurricular activity. These associations are bivariate and thus it is necessary to conduct multivariate analyses (below) to control for shared variance among predictors and among outcomes.

Invariance in Factor Structure as a Function of Day/Boarding Status

It was important to explore whether the factor structure across day and boarding students was invariant and hence whether it is justifiable to pool data across these groups for whole-sample analysis. This was tested via multigroup invariance analyses using a series of CFAs as a function of day/boarding status. Five models were estimated, beginning with a baseline model which is least restrictive and in which no equality constraints are imposed (Model 1), with subsequent tests for equivalence involving more stringent constraints for particular parameters including factor loadings (Model 2), loadings and uniquenesses (Model 3), loadings and factor correlations (Model 4), and loadings, correlations, and uniquenesses (Model 5). Goodness-of-fit indices are used to determine whether factor structures are invariant across groups with particular consideration given to whether changes in the CFI (as described by Cheung & Rensvold, 2002) and RMSEA (see Chen, 2007) meet the criteria of $\Delta CFI < .01$ and $\Delta RMSEA$

< .015. Model 1 yielded an acceptable fit to the data (CFI = .92, RMSEA = .052). Based on criteria for evidence of lack of invariance (see Chen, 2007; Cheung & Rensvold, 2002), the results indicate that when subsequent parameters of the factor structure are held invariant across student type, there is relative invariance across all models: Model 2, CFI = .92 and RMSEA = .053; Model 3, CFI = .92 and RMSEA = .050; Model 4, CFI = .92 and RMSEA = .050; and Model 5, CFI = .92 and RMSEA = .050. This suggests that the factor structure, factor loadings, uniquenesses, and factor correlations/variances are relatively invariant for boarding and day students.

Day/Boarding Status and Motivation, Engagement, and Psychological Well-Being

The central analysis involved SEM that was employed to assess day/boarding status and students' motivation, engagement, and psychological well-being, controlling for sociodemographics, achievement, personality, and school factors. SEM yielded a good fit to the data ($\chi^2 = 8816.25$, $df = 1135$, CFI = .93, RMSEA = .036; in fact, the same as the CFA because the SEM is a "fully forward" model in which all "upstream" factors predict all "downstream" factors). After accounting for the covariates, there was no significant difference between boarders and day students on 10 of the dependent measures and significant differences on 8 of the dependent measures. In terms of motivation and engagement, boarders scored higher than day students on adaptive motivation ($\beta = .05$, $p < .01$), academic buoyancy ($\beta = .03$, $p < .05$), and personal best goals ($\beta = .03$, $p < .05$). They also scored lower on absenteeism ($\beta = -.07$, $p < .05$). On psychological well-being, boarders scored higher than day students on meaning and purpose ($\beta = .07$, $p < .05$), life satisfaction ($\beta = .06$, $p < .01$), participation in extracurricular activities ($\beta = .10$, $p < .001$), and parent relations ($\beta = .13$, $p < .001$). See Figure 2 for significant parameters and Tables 2 and 3 for all standardized β coefficients for dependent measures.³

Cross-Sectional Interactions

The interactions between day/boarding status, sociodemographic, prior achievement, personality, and school factors (resulting in 14 interaction terms, e.g., day/boarding status \times gender, day/boarding status \times age, day/boarding status \times parent education, day/boarding status \times school gender, day/boarding status \times agreeableness, etc. across 18 dependent measures) were considered. Although not a great deal of boarding-specific characteristics are included in this study (as the study is more a global assessment of boarding effects), analysis of potential moderators enables a better understanding of specific factors relevant to boarding effects. In the Online Appendix (see the online version of the journal) we do present analyses relevant to some specific aspects of boarding experience. Of the 252 possible

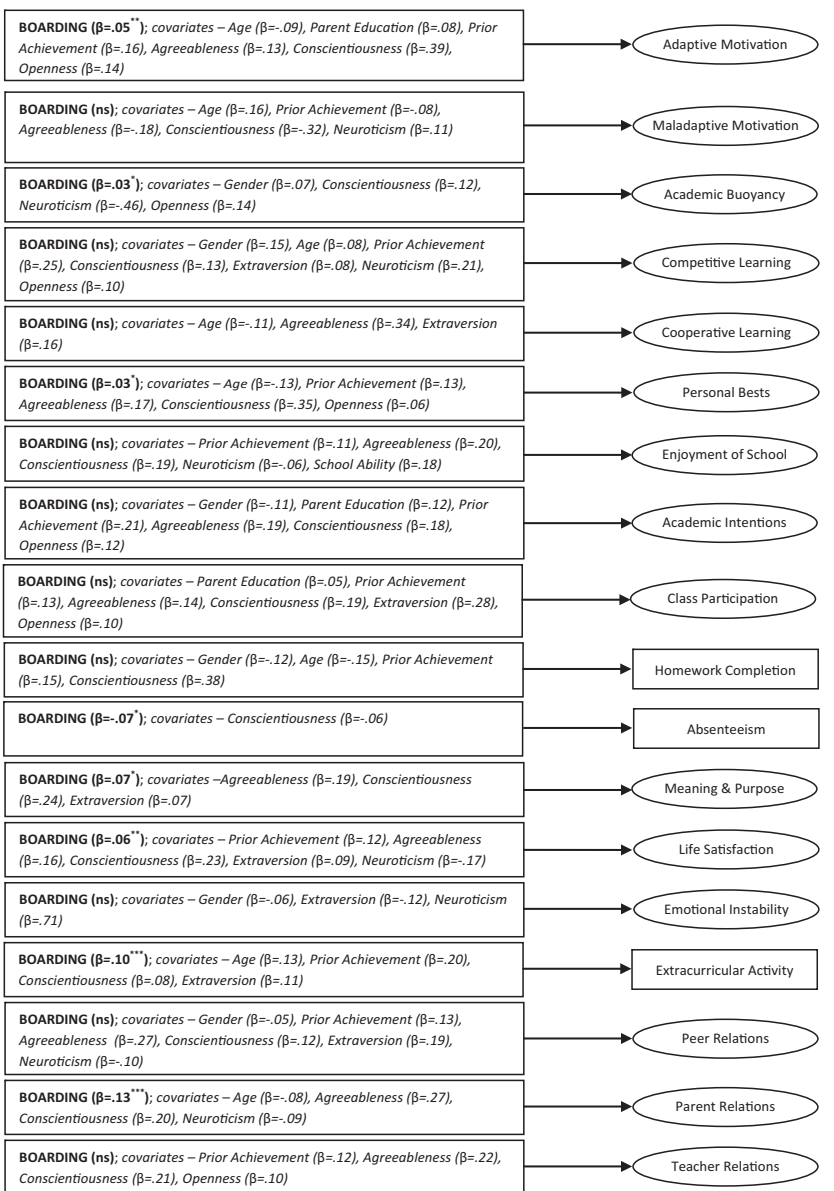


Figure 2. Structural model (standardized parameter estimates, β) for motivation, engagement, and psychological well-being.

Note. All paths reported for covariates are significant at $p < .001$.

Table 2
Structural Equation Model Results for Motivation and Engagement

	Adaptive Motivation	Maladaptive Motivation	Academic Buoyancy	Enjoy School	Academic Intentions	Class Participate	Personal Best Goals	Competitive	Cooperative	Homework Complete	Absenteeism
Day/boarding	.05**	-.01	.03*	.02	-.01	.03	.03*	.02	-.02	.01	-.07*
Gender (F/M)	-.03	.05*	.07***	-.03	-.11***	.02	-.02	.15***	.01	-.12***	-.01
Age	-.09***	.16***	-.05**	-.11***	.02	-.08**	-.13***	.08***	-.11***	-.15***	.04**
Non-English-speaking (N/Y)	.05*	.02	.02*	.02	.12***	.01	.05**	.07**	.05**	.01	-.02
Parent education	.08***	-.08**	-.03	.02	.12***	.05***	.01	-.01	.03	.06	-.03
Indigenous (N/Y)	-.05	-.06*	-.02	-.03	-.04	-.03	-.04	-.01	-.02	.06*	-.07
Prior achievement	.16***	-.08***	.09**	.11***	.21***	.13***	.13***	.25***	.02	.15***	-.03
Agreeableness	.13***	-.18***	-.05*	.20***	.19***	.14***	.17***	.06	.34***	.03	-.02
Conscientiousness	.39***	-.32***	.12***	.19***	.18***	.19***	.35***	.13***	.03	.38***	-.06***
Extraversion	-.01	-.01	.04*	.06*	.02	.28***	.01	.08***	.16***	-.05	.04*
Neuroticism	.01	.11***	-.46***	-.06***	-.03	-.01	.01	.21***	-.01	-.01	.02
Openness	.14***	-.05*	.14***	.04*	.12***	.10***	.06***	.10***	-.04	.01	.03*
All-girls school	.01	.03	-.02	-.07	-.02	-.02	-.01	.03	-.05	-.02	.02
all-boys school	.02	-.01	-.01	.04	.05	-.02	.04	.10*	-.03	.05	-.01
School-average ability	.03	-.09**	.06**	.18***	.09*	.07*	.01	.02	.02	.02	-.11*
R ²	.41***	.39***	.35***	.29***	.37***	.33***	.32***	.26***	.19***	.27***	.04***

Note. Statistical significance of correlations depends on the SE of the parameters. Thus, lower absolute values can yield higher levels of statistical significance.

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

Table 3
Structural Equation Model Results for Psychological Well-Being

	Meaning and Purpose	Life Satisfaction	Emotional Instability	Peer Relations	Parent Relations	Teacher Relations	Extracurricular Activity
Day/boarding	.07*	.06**	.02	-.01	.13***	.03	.10***
Gender (F/M)	.05**	.01	-.06***	-.05***	.03*	.01	-.06**
Age	-.04	-.05**	-.01	.01	-.08***	-.01	.13***
Non-English-speaking (N/Y)	.04*	-.02	.01	.01	-.01	.02	-.06**
Parent education	.01	.05**	.01	.06**	.04*	.01	.06*
Indigenous (N/Y)	-.04*	-.03*	-.01	-.01	-.01	-.06	-.03
Prior achievement	.07**	.12***	.02	.13***	.06*	.12***	.20***
Agreeableness	.19***	.16***	.07*	.27***	.27***	.22***	.01
Conscientiousness	.24***	.23***	.01	.12***	.20***	.21***	.08***
Extraversion	.07***	.09***	-.12***	.19***	-.02	-.03	.11***
Neuroticism	.01	-.17***	.71***	-.10***	-.09***	-.06*	.06**
Openness	.06**	.03	-.06*	.04	.01	.10***	.05*
All-girls school	.04	.03	.01	.04*	.05**	-.01	.01
All-boys school	.04	.04	.01	.04	.04	.02	.08*
School-average ability	.01	.01	-.02	-.03	.01	.13**	.02
R ²	.22***	.28***	.56***	.32	.25***	.28***	.14***

Note. Statistical significance of correlations depends on the SE of the parameters. Thus, lower absolute values can yield higher levels of statistical significance.

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

interaction effects, 5 yielded significant results (at $p < .001$). For peer relations, one interaction was significant, that being student type \times agreeableness ($\beta = -.05$, $p < .001$, such that day students higher on agreeableness reported more positive relations with their peers than day students lower on agreeableness and boarders). For cooperation, one interaction was significant, that of student type \times agreeableness ($\beta = -.06$, $p < .001$, such that day students higher on agreeableness reported greater cooperation than day students lower on agreeableness and boarders). For teacher relations, one interaction was significant, that of student type \times openness ($\beta = -.05$, $p < .001$, such that day students higher on openness reported more positive relations with their teachers than day students lower on openness and boarders). For parent relations, two interaction effects were significant, those of student type \times Indigenous ($\beta = -.05$, $p < .001$, such that non-Indigenous boarders reported more positive parent relations than Indigenous boarders and day students) and student type \times conscientiousness ($\beta = -.04$, $p < .001$, such that boarders who scored higher on conscientiousness reported more positive parent relations than boarders lower on conscientiousness and day students).

Gains or Declines Over the Course of an Academic Year

The central analyses suggest that there is general parity between boarding and day students and that where differences exist, they tend to be modest and favor boarders. One question that these cross-sectional data do not answer is the extent to which there are gains or declines in motivation, engagement, and psychological well-being over time for one group over another. Longitudinal data are needed to answer this, and for this we draw on pretest data available for 2,002 students from the main sample. These data were collected from these students one full academic year earlier. By including these pretest scores as predictors in the model, we partial out prior variance and thus can examine gains or declines (having partialled out pretest scores) and the extent to which boarding status predicts such variance.

Accordingly, pretest scores were entered alongside boarding status, sociodemographic, achievement, personality, and school factors as predictors of motivation, engagement, and psychological well-being. Of interest is the extent to which boarding status (relative to day status) predicts gains or declines on the dependent measures. The data provided a good fit to the model, $\chi^2 = 10,936.97$, $df = 3509$, CFI = .93, RMSEA = .033. In most cases, there was no significant difference between boarding and day students in gains or declines across one academic year—again suggesting predominant parity. Two significant effects did emerge such that boarders experienced significant decline in absenteeism from school ($\beta = -.09$, $p < .01$) and an increase in extracurricular activity ($\beta = .11$, $p < .001$).⁴

Interactions Predicting Gains or Declines

In line with the cross-sectional interactions, we also investigated whether gains or declines in outcomes occurred as a function of any interaction between day/boarding status and the covariates, that is, whether any gains or declines due to day/boarding status are moderated by any covariates. The interactions between day/boarding status, sociodemographic, prior achievement, personality, and school factors (resulting in 14 interaction terms, e.g., day/boarding status \times gender, day/boarding status \times age, day/boarding status \times parent education, day/boarding status \times school gender, day/boarding status \times agreeableness, etc. across 18 dependent measures) were considered. Of the 252 possible interaction effects, 3 yielded significant results (at $p < .001$). For peer relations, one interaction was significant, that being boarding/day student status \times agreeableness ($\beta = -.08, p < .01$, such that the effect of agreeableness on peer relationships was stronger for day students, $\beta = .38, p < .001$, than it was for boarding students $\beta = .27, p < .01$). For school enjoyment, one interaction was significant, that of boarding/day student status \times school achievement ($\beta = -.09, p < .001$, such that the effect of school achievement on school enjoyment was stronger for day students, $\beta = .29, p < .001$, than it was for boarding students $\beta = .19, p < .001$). For parent relations, one interaction was significant, that of boarding/day student status \times school achievement ($\beta = -.11, p < .001$, such that the effect of school achievement on parent relationships was significant and positive for day students, $\beta = .16, p < .001$, but nonsignificant for boarding students $\beta = .01, p = .88$). This is broadly consistent with the relatively few interaction effects in the cross-sectional data and follows from the relatively few main effects found in the longitudinal data.

Discussion

This research is apparently the first to conduct large-scale, multivariable modeling (with numerous covariates) to better understand boarding school in relation to motivation, engagement, and psychological well-being. Thousands of students were in the “treatment group” (boarding students) and thousands were in the “comparison group” (day students). Groups were located in the same school and the same classrooms, received the same instruction from the same teachers, and were “crossed” with grouping factors (e.g., gender, year level, language background, parental education, etc.). After controlling for covariates, we conclude there is general parity between boarding and day students on most motivation, engagement, and psychological well-being factors, there are some modest positive results favoring boarding students, and there are few disproportionate shifts between boarders and day students over the course of one academic year. In relation to significant effects, boarders scored higher than day students

on adaptive motivation, academic buoyancy, and personal best goals—and lower on absenteeism. In terms of psychological well-being, boarders scored higher than day students on meaning and purpose, life satisfaction, participation in extracurricular activity, and parent relations. Significant shifts for boarders over the course of the academic year were increases in extracurricular activity and declines in absenteeism.

Noteworthy Significant and Nonsignificant Findings

Although there was mostly parity between boarding and day students, there were some significant differences. It is interesting to note that a greater proportion were on psychological well-being measures. Perhaps this is because boarders' academic lives are more similar to that of day students and that it is nonacademic life where boarding and day students' lives are more dissimilar. In relation to the positive results for boarding on adaptive motivation and academic goals, it may be that because boarders have out-of-class access to educators there are motivational and goal-setting benefits following from this additional professional educational input. Perhaps this is along the lines of the positive effects of tutoring indicating the involvement of educational professionals to be more effective than nonprofessionals (Slavin, Lake, Davis, & Madden, 2011). Typically, parents have no such expertise and so may not motivate or develop goals in such educationally beneficial ways. In relation to the positive boarding result for academic buoyancy, experiential education perspectives emphasize the resilience yields for being in environments that challenge the learner to explore issues of values, diversity, and community (Itin, 1999). Buoyancy is an adversity-related construct similar to resilience (Martin & Marsh, 2009), and the present results suggest the boarding experience may extend the student in a way that promotes academic buoyancy.

In terms of psychological well-being, the positive findings for boarders' sense of meaning and purpose and life satisfaction were interesting. Again, it may be that boarders' access to trained educators on a more ongoing basis enables opportunities for pastoral development that are within the remit of such professionals (see Hawkes, 2010). For example, school staff receive professional development on the social-emotional needs of students (Becker & Luthar, 2002; Martin & Dowson, 2009), whereas parents are not trained educators and are relative novices at each stage of their child's social-emotional development. In this light, it is also very interesting to note the positive findings for boarders and parent-child relations. This was one of the larger effects in the study—and is interpreted more fully below when discussing the study's implications for attachment theory. Finally, the findings on absenteeism and extracurricular activity support an intuitive interpretation of these constructs: Students in boarding school are on-site, and attendance at school and involvement in school-based extracurricular activity appear to be optimized.

In the context of a sometimes negative history of boarding, the finding of parity between boarding and day students on most outcome measures is noteworthy for parents and educators. In relation to parents, we venture that one of parents' primary concerns is that their child will receive educational access and opportunity that is comparable to other students in a school. According to Lawrence (2005), reasons why parents choose boarding school include access to opportunities (such as extracurricular activity) and a stable and structured learning environment. The present findings suggest that boarders have opportunities and structure that are comparable to students in the wider school community. Across quite a wide range of motivation, engagement, and psychological well-being factors, findings suggested that boarders and day students score at similar levels. Some parents may also be concerned that their child's personal and/or cultural identity may be impaired as a result of attending boarding school (Elias et al., 2012; Jack, 2000; Neegan, 2005; Pember, 2007; Smith, 2010; Voyer, 2007). While we did not assess identity *per se*, on measures that might tap into or reflect this construct (e.g., meaning and purpose and life satisfaction; Thoits, 1992), boarders' self-reports indicated no such problems. On a related note, Yeo (2010) suggests that overseas students coming to Australia have demonstrated the potential to maintain their cultural group identity in the boarding house environment and so disruptions to cultural identity due to boarding school (see Elias et al., 2012; Jack, 2000; Neegan, 2005; Pember, 2007; Smith, 2010; Voyer, 2007) need not be replicated if appropriately and sensitively addressed by boarding school educators.

Alongside modeling day/boarding status as a main effect, we also investigated whether day/boarding status effects were moderated by sociodemographic, achievement, and personality factors. In our introduction, we speculated that there may be some factors (e.g., Indigenous status, SES, age) that may yield distinct effects for boarding students more than day students. For the most part, we found day/boarding status was not moderated by other factors. Of more than 250 possible interaction terms, in only 5 cases were significant cross-sectional interaction effects derived and in only 3 cases were significant longitudinal interaction effects derived beyond the main effects and variance explained by covariates. Based on the present sample, it seems that where day/boarding status effects occur, they tend to be main effects and not moderated by sociodemographic, prior achievement, and personality factors. This holds implications for practice and school policy in that it seems efforts to address motivation, engagement, and psychological well-being do not need to be overly differentiated as a function of subgroups within the boarding school community of the school.

The Importance of Covariates in Boarding Research

This is one study where the inclusion of covariates was vital. Findings in Table 1 showed that various covariates were significantly associated with

day/boarding status. Findings in Table 1 also showed that in a number of cases, bivariate relationships between day/boarding status and outcomes suggested negative results for boarding school. Importantly, when day/boarding status was assessed in multivariate modeling, controlling for covariates and shared variance among outcome variables showed that many of these effects shifted to parity, with some boarding school results significantly positive.

It therefore appears important not to confuse boarding school results with effects due to the background characteristics of boarding school students. Thus, for example, age is significantly associated with outcomes and boarders tend to be older; prior achievement is significantly associated with outcomes and boarders tend to be lower in prior achievement; the broad personality factors of openness and neuroticism are significantly associated with outcomes and boarders are (respectively) lower and higher on each; and, last, parental education was significantly associated with outcomes and boarders in this sample tend to be lower in parental education.

It seems that boarders differ from day students on a number of important background characteristics and it is these characteristics that are systematically connected to students' motivation, engagement, and psychological well-being. This underscores the importance of avoiding raw comparisons between boarding and day students. Such comparisons may lead to biased findings. Instead, researchers must seek to equalize groups either through purposeful sampling or through the use of covariates in models—or both. Findings also indicate what factors to consider when assisting students' transitions into and through boarding school. For example, understanding they may have lower levels of prior achievement might signal a need for some direct instruction and skill development (Liem & Martin, 2013) in nurturing core academic skills important for academic functioning. Alternatively, knowing there may be aspects of personality that are important to work with might also foster greater student development (Ginns, Liem, & Martin, 2011).

Implications for Theory

Findings provide some support for ecological theorizing in that the proximal context of boarding did yield some significant positive results and the roles of ethnicity and parental education also yielded significant findings (Bronfenbrenner, 2001). The handful of positive results for boarding were also aligned with conceptualizing about positive youth development (Benson & Saito, 2000; Fredricks & Eccles, 2008; Lerner, 2005), suggesting that some ecological settings present developmental opportunities that may yield positive youth effects. Similarly, as a form of extracurricular activity, findings did seem to support the identification/commitment perspective (Marsh & Kleitman, 2002) such that where significant effects emerged, they tended to be modestly positive. In contrast, there was no apparent support

for the zero-sum perspective that would hold that time spent in boarding contexts is time that diminishes other outcomes.

In terms of attachment theory, it is very interesting to note that boarders' relationship with their parents was more positive than day students' relationship with parents. This is somewhat consistent with Cree (2000) who found that boarding school did not diminish boarders' relationships with their parents. The precise reason for this is unclear. Perhaps absence makes the heart grow fonder. Perhaps for boarders, the daily struggle with homework and study (Horsley & Walker, 2013) is shifted onto the school and away from parents, whereas day students and their parents continue with this struggle, leading to a decline in the parent-child relationship. Along similar lines, perhaps boarding parents can focus on more positive interactions that tend to occur during holiday periods and in "good times." It is also worth noting that contemporary boarding school is characterized by modern communications and so boarders are more frequently and extensively in touch with their parents and school-leave arrangements are less restrictive than in years gone by. In any case, boarding school did not seem to negatively affect boarders' perceptions of their parents, and this has some relevance to attachment perspectives and boarding school.

Limitations and Future Directions

Regarding limitations and future directions, perhaps the first point to make is that this study is a global overview of boarding school and its effects. The study's main purpose was to explore the more direct and immediate issue of whether boarding school yields effects and whether the present findings set the stage for more in-depth analyses to understand specific aspects of boarding school and their effects on outcomes. In Online Appendix (see the online version of the journal) we have presented preliminary correlations with a small set of boarding factors (distance from home, time in boarding school, boarding house size) and in the main set of analyses we have explored possible moderators of boarding effects, but there is scope for analysis of a much more comprehensive set of boarding factors. For example, based on ecological, attachment, and positive youth development theories, we might include relationships with boarding peers compared with day peers, relationship with boarding house staff compared with other school staff, specific nature and extent of boarding house activities, and so on to provide further information for educational practice and parent decision making. In addition, given this study's emphasis on "modern" boarding practices, it is important for future research to include variables that assess, for example, the role of communications technology in keeping boarders in touch with home—and the quality of these interactions and their impacts on outcomes. Thus, the present study sets the stage for more in-depth analysis of boarding characteristics to better assist our

understanding of the present findings. Indeed, this in-depth analysis might also investigate factors associated with negative consequences of boarding. Although we found predominant day/boarding parity and some positive effects for boarding, there will be cases where the boarding experience is not positive, and further research is needed to identify why.

It is important to recognize that the present study is located within one national context and that this will have some bearing on results. For example, in Australia many boarding students are from rural and remote farming areas and their parents will likely not have received the same levels of education as their urban counterparts—and this very factor (parental education) was relevant to the present findings. In other national contexts, there may not be so many rural or remote students and thus education levels of boarders' parents may be quite different. Similarly, relative to day students, there is greater representation of Indigenous students in Australian boarding schools (Papworth, Martin, Ginns, & Hawkes, 2012), and this also may be quite different from other national contexts. In the Australian context, attending boarding school is a way to overcome educational barriers associated with distance, whereas in the United Kingdom and the United States, traditionally boarding school attendance is more focused on college preparation (Cree, 2000; Greene & Greene, 2006; Shane, Maldonado, Lacey, & Thompson, 2008; White, 2004). There is also a need for cross-national research shedding light on different types of students attending boarding school (e.g., in terms of SES, prior achievement, personality, learning needs) in different countries and the impact of these differences. Taken together, there will be factors unique to boarding schools in different national contexts and these are important to consider when interpreting the present results and when selecting covariates to include in future research.

Our research was focused on current day/boarding status and (for a subsample) their motivation, engagement, and psychological well-being over the course of a full year of school. Follow-up research tracking boarders into further education and work might also be useful. To more fully understand the boarding experience, the present factors might also be assessed from parents' and teachers' perspectives. The present study was limited to students' self-reports and so more "objective" data might be considered in future. A postsurvey achievement measure would also improve future research. Because our achievement data were collected before the survey period, we could only employ it as a covariate—not as an outcome.

It is also important to note that (a) there appear to be prior differences between boarders and day students and (b) it is unlikely that most boarders will ever be day students. Thus, we cannot satisfy conditions for causal inference that rely on counterfactual conditional statements that would state what would be the case if a boarder were a day student and a day student were a boarder (Morgan & Winship, 2007). We dealt with this through inclusion of covariates to help adjust for prior differences to enable closer estimates

of effects unique to boarders and day students, but it is not as strong an approach as propensity score matching or nearest neighbor matching—which are probably not feasible for a study such as ours (and many other applied educational studies). We suggest future research conduct data collection in a way that tracks any students that move from boarding status to day status and vice versa. Although this does not definitively support causal inference, it represents another research design and approach to understanding the issue. Another approach would be to track students as soon as they lodge an application to boarding school (thus, likely to attend subsequently and enable pre- and posttransition comparisons) or track students whose older siblings are at boarding school (thus, likely to attend themselves in the future and enable pre- and posttransition comparisons). Again, we recognize self-selection and bias here too, but it is another means of assessing for any change once students commence boarding school. Indeed, it is also a means of understanding prior differences on factors such as achievement and personality and their influence on subsequent boarding outcomes. In addition, we speculated that parents may select into boarding school based on some of these characteristics and there is thus a place for in-depth qualitative work that seeks to elucidate parents' reasons for selecting boarding school (including reasons relevant to personality and temperament) and the connection between such reasons and subsequent outcomes.

This study was a quantitative one, leading to limits to what can be understood about the nature of effects found here. Qualitative data would be very useful to better understand the boarding experience in relation to the outcomes under focus in this study. It might also be illuminating to collect real-time information (e.g., with handheld mobile technology; Malmberg, Little, Walls, & Martin, 2012) from boarding and day students to juxtapose contemporaneous quantitative and qualitative data on the daily experience. Also relevant to research design, the present study employed a variable-centered approach to studying boarding school. Research might look to employ person-centered approaches to identify types of boarding students or groups of boarders with particular profiles and the potentially differential nature of their experiences at school. It might also be important to conduct medium- and long-term follow-up research with these students. Perhaps students will have a different recollection of their boarding experience once they have left the institution and can gain greater perspective on their school years.

Finally, we suggest that this research is not conducted to the exclusion of other young people “in care” or “residence.” There are many young people in settings who for various reasons are unable to reside with their parents. These include young people in shelters or “halfway” houses, chronically and terminally ill young people in hospital, young people in juvenile detention, sporting institutions housing young athletes for intensive training,

young people on school camps, institutions relying on “billet” systems to accommodate young people—to name a few. Thus, the research design and findings are potentially generalizable to settings beyond boarding school. Future research might seek to empirically assess the extent to which this is the case.

Conclusion

Boarding schools represent a significant sector on the educational landscape. However, there has been surprisingly little rigorous research assessing boarding and students’ motivation, engagement, and psychological well-being. The present study sought to address this gap in knowledge and research. On some factors, findings favor boarding students. On all other factors there is parity between boarding and day students. These findings hold implications for parents’ consideration of school choice for their child, educational administrators managing boarding (and day) students in their school, and researchers investigating the impact of educational structures on students’ academic and nonacademic development. Perhaps most importantly, given the dearth of rigorous research and theory in this area, the present findings set the stage for more detailed and well-designed longitudinal research into this substantial sector on the national and international education landscape.

Notes

The authors would like to thank the Australian Research Council and the Australian Boarding Schools Association for funding this research.

¹Boarding students are clustered in residential settings, often called boarding houses, boarding residences, or dormitories (hereafter referred to as boarding houses), with boarding schools comprising one or several boarding houses. Some schools are predominantly day schools, with a small boarding contingent, while others have a stronger boarding identity, consisting of greater numbers of boarders.

²It is difficult to ascertain the precise numbers of boarding schools as not all schools are members of their national associations, and it is these associations that tend to collect such data.

³Although the present study focuses on the higher order Motivation and Engagement Scale (MES) factors of adaptive and maladaptive motivation, for completeness we ran an additional model estimating as dependent variables the MES first order factors of self-efficacy, valuing school, mastery orientation, planning, task management, persistence, self-handicapping, and disengagement. This model provided a good fit to the data ($\chi^2 = 1171.18$, $df = 168$, CFI = .94, RMSEA = .034) and showed that after controlling for covariates, boarders scored higher than day students on mastery orientation ($\beta = .05$, $p < .01$), planning ($\beta = .05$, $p < .01$), task management ($\beta = .05$, $p < .01$), and persistence ($\beta = .03$, $p < .05$).

⁴We ran an additional model estimating as dependent variables the MES first order factors of self-efficacy, valuing school, mastery orientation, planning, task management, persistence, self-handicapping, and disengagement. This model provided a good fit to the data ($\chi^2 = 701.47$, $df = 280$, CFI = .98, RMSEA = .027) and showed that after controlling for covariates, no significant gains or declines occurred over the course of the year.

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Manuscript received July 2, 2013

Final revision received March 2, 2014

Accepted March 2, 2014