Chapter Six

The Relationship between School Climate and Faith Engagement

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Abstract

The study of school climate has gained increased attention over the past 25 years, with research indicating significant relationships between school climate and a number of social, emotional and academic outcomes for students. An aspect of school climate that has seen little attention, however, is the relationship between the development of faith and positive school climate. This study analyses data from 368 students in one faith-based school in Australia, utilising self-reported measures of school climate and faith engagement. A significant relationship is found between these variables, indicating the potential impact that school climate and faith engagement may have on each other. The study discusses the implications of these findings and makes suggestions in relation to the strengthening of these two areas within faith-based schools.

Background

While varying definitions of 'school climate' exist, the term generally refers to the combined subjective experiences of students at school, including their social and emotional safety (Zullig et al., 2015). These experiences are seen to be a reflection of the culture and norms of the school community (Reaves, McMahon, Duffy, & Ruiz, 2018) and include the shared values and attitudes that contribute to what is considered 'acceptable' within that particular community (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). Each school is thus seen as having a unique atmosphere, where the experience of students in areas such as interpersonal relationships, sense of belonging, engagement and academic support help to determine the school climate perceptions of each individual.

A variety of school climate categories or domains have been suggested in attempts to represent its different facets. These generally include areas such as: the quality of student relationships with staff and other students, the learning and teaching environment, the sense of order, safety and discipline experienced and the impact of the various structures of the institution on the students (J. Cohen, Pickeral, & McCloskey, 2009; Thapa et al., 2013). Some researchers (for example: Zullig et al., 2015) divide these school climate domains into further categories that include aspects such as parental involvement and opportunities for engagement, in addition to assessing the physical environment such as the cleanliness of school grounds and associated buildings. These domains will be unpacked later in this chapter.

Regardless of the domains selected to represent a particular understanding, school climate has continued to gain increased prominence, due to an increasing amount of research linking it to a wide range of important school outcomes for students, such as academic achievement (for example: Berkowitz, Moore, Astor, & Benbenishty, 2016; Brand, Felner, Shim, Seitsinger, & Dumas, 2003; Daily, Mann, Kristjansson, Smith, & Zullig, 2019; Sakız, 2017), learning motivation (Marsh, Martin, & Cheng, 2008), school attendance and school avoidance (Brand et al., 2003; Sakız, 2017). Significant connections have also been found to self-esteem and depressive symptoms (Way, Reddy, & Rhodes, 2007), school satisfaction (Zullig, Huebner, & Patton, 2011; Zullig, Ward, Huebner, & Daily, 2018) and self-rated health (Zullig et al., 2018). Behavioural problems with links to school

climate include aggression, school delinquency, alcohol abuse, risk-taking behaviour and bullying perpetration (Bandyopadhyay, Cornell, & Konold, 2009; Gottfredson, Gottfredson, Payne, & Gottfredson, 2005; Petrie, 2014a; Tomczyk, Isensee, & Hanewinkel, 2015; Wilson, 2004). It is also important to note the relationship between a positive school climate and improved teacher-retention rates (Thapa et al., 2013).

There is a strong body of evidence to support the significant impact on school climate of areas such as student–teacher relationships (Ahnert, Harwardt-Heinecke, Kappler, Eckstein-Madry, & Milatz, 2012; Barile et al., 2012; Zullig et al., 2011), belonging and connectedness (Bond et al., 2007; Osterman, 2000), supportive and fair discipline structures (Cooney, 2008; Gottfredson et al., 2005; Lewis, Romi, Katz, & Qui, 2008) and student-leader characteristics (Bukowski, 2011; Cillessen & Marks, 2011; Lansu & Cillessen, 2012; Litwack, Aikins, & Cillessen, 2012). There appears, however, to be limited research linking school climate to the attitudes and engagement of students in relation to faith-development activities in faith-based schools.

Aims and Description of the Current Study

The underpinnings of faith-based education suggest that a relationship between school climate and faith engagement might be expected. Faith-based education claims to influence students in a holistic manner (Knight, 2016) asserting the importance of factors that would also be perceived as positively influencing climate and culture. These include a recognition of the relevance of service to others (Lewing, 2018; Mullen, 2010), compassion (Newhouse, 2019), active student voice (Reichard, 2013), the fostering of well-being in both the individual and the community (McDonough, 2011) and positive leadership that exemplifies the values espoused by the institution (Prior, 2018). It is also useful to consider both the priority that faith-based education gives to the search for meaning and purpose in life, including the formation of personal identity (Hoekstra, 2012; Nagy, Ostrander, Kijai, & Matthews, 2017) and the advancement of personal and ethical autonomy (B. V. Hill, 2008), and the emphasis it places on the development of positive relationships (Derrico, Tharp, & Schreiner, 2015; B. Hill, 2014).

The area of interpersonal relationships is particularly emphasised within faith education literature, with the suggestion that 'teachers have a mandate to first ensure that their relationships with students are warm, caring and supportive, and that they build trust and love in these relationships' (B. Hill, 2014, p. 21). Indeed, a number of authors emphasise the importance of positive interpersonal relationships as a contributing factor to the development of personal faith (Christie & Christian, 2012; de Souza, 2005; Roy, 2008). There is thus an existing premise within the literature for assuming that faith engagement may share certain synergies with school climate variables.

Also of interest is the body of work examining the impact of faith-based connections within diverse contexts, which is referred to by some as 'religious affect [sic]' (Village, Francis, & Brockett, 2011). This 'religious affect' has been found to be positively correlated with variables such as altruism, empathy, psychological health (Village et al., 2011) and academic achievement (Yeshanew, Schagen, & Evans, 2008). As previously mentioned, however, there is a dearth of literature exploring the nexus between faith development and positive school climate. This study hypothesises that more positive perceptions of school climate are related to more positive attitudes towards, and greater engagement in, faith-development activities at both personal and school level.

Defining Faith Engagement

It is recognised that the task of measuring the development of faith can be challenging and subjective. In general, it is common for faith development to be determined using social-behaviour-style surveys, administered over time (for example: Hall & Edwards, 2002; Petrie et al., 2016; Styron, 2004). Increases in scores may thus be seen as indicators of individual progress within the faith journey. The current study, however, does not attempt to measure the development of faith over time per se. Rather, it seeks to capture the extent to which students have a positive attitude towards and engage in activities that are likely to facilitate faith development.

The term 'engagement' itself can be problematic, with a range of suggestions as to how it should be viewed, depending on the specific context (Whitton & Moseley, 2014). Within the context

of student engagement, the literature suggests a number of aspects to consider, including motivation, autonomy and the interest of the learner, in addition to cognitive, emotional and social factors (Whitton & Moseley, 2014). Indeed, learner engagement is viewed as a meta-construct that encompasses behavioural, emotional and cognitive dimensions (Bouvier, Lavoué, & Sehaba, 2014; Fredricks, Blumenfeld, & Paris, 2004).

In considering these dimensions, it is appropriate to note the significant role played by positive psychological state (Hart, Sutherland, Tan, & Fisher, 2013; Rich, Lepine, & Crawford, 2010): in short, those with a positive state of mind are more likely to evidence behaviour characterised by 'vigour, dedication and absorption' (Schaufeli, Salanova, González-romá, & Bakker, 2002, p. 71). Positive attitudes are thus viewed as an important factor in determining positive behaviour (Fredricks et al., 2004).

Within the current study, engagement (and in particular faith engagement) is defined as a positive and dedicated commitment to faith-development practices at both personal and school level. It is posited that the attitudes of students in relation to faith-engagement activities will affect their choices in relation to faith engagement, at both personal and school level.

Methodology

The current study seeks to determine whether a significant relationship exists between school climate and faith engagement variables, requiring data to be collected from a substantial sample of students and to be uniformly recorded and coded so as to provide a data set suitable for quantitative analysis (Check & Schutt, 2012; Lavrakas, 2008). Survey methodology enables a large number of classrooms to be covered within a given time, and thus a large data set to be collected and analysed. Sample size (N) is considered an important factor when attempting to generalise results to the wider population (L. Cohen, Manion, & Morrison, 2017).

Alongside this largely quantitative approach, students were given the opportunity to comment on various aspects of faith engagement within their school. It is acknowledged that a mixed methodology allows for greater understanding of and a broader perspective on

the issues involved (Creswell & Creswell, 2018), providing a depth of understanding not possible through a single-method approach (Tashakkori & Teddlie, 2010). The (qualitative) comments of students assist in interpreting and understanding the data and are unpacked in the following chapter.

The Instruments

While a number of instruments exist with which to measure school climate, the most comprehensive validated survey is the School Climate Measure (SCM) (Daily et al., 2018; Zullig et al., 2015; Zullig et al., 2014; Zullig, Patton, & Ubbes, 2010). The SCM measures ten distinct domains of school climate: student–teacher relationships; connection to school; academic support; order, safety and discipline; school appearance; social atmosphere; perceived exclusion; opportunities for engagement; parental involvement; and academic satisfaction. Response options for each SCM item are Strongly Disagree (= 1), Disagree (= 2), Neither Agree nor Disagree (= 3), Agree (= 4) and Strongly Agree (= 5), with higher scores indicating improved perceptions of school climate.

In addition to the SCM, the school satisfaction sub-scale of the Multidimensional Students' Life Satisfaction Scale (Huebner, 1994) was also included. Significant correlates have been found between school climate variables, life satisfaction and satisfaction with school (Zullig et al., 2011; Zullig et al., 2018).

Faith Engagement Survey

A number of instruments for measuring faith-development were considered for use in this study; however, the decision was made to develop a tool specific to the current project, in light of the following considerations:

a. Many instruments were more suitable for adults than for children or youth (for example: Petrie et al., 2016).
b. Some surveys (for example, the Insight School Improvement Survey [(Hart & Scollay, 2018)]) are part of larger commercial packages and are unavailable for generic use within independent research projects.

c. A number of instruments for children and youth measure a generic 'spirituality', rather than one specific to the Christian context (for example: Moore, Gomez-Garibello, Bosacki, & Talwar, 2016).
d. No instrument was found that sought to measure all three aspects considered important to this project: personal attitudes towards Christian practice, personal faith engagement and school influences on student faith.

As part of the process of developing an instrument, a range of literature was examined that investigated:

a. The development of existing tools that measure faith development;
b. Faith integration in the school curriculum;
c. Factors identified as impacting the faith development of children and adolescents;
d. Factors perceived to be associated with the effective operationalisation of Christian education;
e. Modes of engagement viewed as important to faith development.

A set of 19 forced-response (Likert-type) and 3 open-ended questions was

subsequently constructed to represent the key concepts distilled from the literature. Two focus groups comprising Year 9–10 students and Year 5–7 students were engaged to discuss students' understanding of the questions and to examine the overall format and approach. This resulted in alterations to the wording of several questions, revisions to the overall format and style of the survey and the insertion of one additional forced-response and one further open-ended question.

The focus groups were followed by a pilot trial (N = 222) in a faith-based school with similar demographic characteristics and a comparable academic and pastoral program to the one in which the study was to take place. The data collected from this pilot trial were subjected to principal component analysis (PCA) and subsequent internal reliability analyses, with three sub-scales emerging (see Table 1). No items were signalled for removal within the reliability analyses. The final faith engagement measurement instrument

contains 20 forced-response questions (answered via a five-point Likert scale) and 4 open-ended questions designed to capture qualitative feedback from students in regards to the school's attempts to facilitate their faith journeys. Response options for the faith engagement scales are Disagree (= 1), Slightly Disagree (= 2), Neither Agree nor Disagree (= 3), Slightly Agree (= 4) and Agree (= 5), with higher scores indicating higher perceptions of faith engagement.

Table 6.1 Reliability Analysis: Faith Engagement Sub-scales

Scale Name	Number of Items	Cronbach's Alpha
Attitudes to Christian Practice	5	0.948
Personal Faith Engagement	4	0.860
School Influences on my Faith	9	0.895

Sample Selection and Data Collection

The school selected for the study had received a grant from the Association of Independent Schools (New South Wales) to investigate whether a relationship exists between school climate and faith engagement variables. Situated in a rural area of New South Wales, Australia, this independent faith-based school provides K–12 education for around 900 students, with about 570 of these within the targeted Year 5–12 cohort. Active consent was sought from students and parents, with 417 (73%) of the possible cohort completing the survey (which was administered online via Survey Monkey). To assist with consistency, a written script related to the introduction and administration of the survey was provided to school staff. The students completed the survey during a regular class period, with the average completion time being 14 minutes.

Data Analysis

As previously reported, the scales used within the data collection were: school satisfaction (one scale), school climate (ten sub-scales) and faith engagement (three sub-scales). (While school satisfaction is not an official part of the SCM, it was often treated synonymously within the context of the present study.)

Following a screening of the data and the deletion of cases that contained significant missing information (N = 6) or that failed the 'validity screening item' (Cornell, Klein, Konold, & Huang, 2012) (N = 43), the final sample size was N = 368. A reliability analysis was then conducted to check internal consistency estimates of the school satisfaction and school climate scales (see Table 2) using SPSS 26.

Table 6.2 Reliability Analysis: School Satisfaction and School Climate Scales

Scale Name	Number of Items	Cronbach's Alpha
Satisfaction with School	8	0.813
Student–Teacher Relationships	8	0.916
Connection to School	4	0.857
Academic Support	4	0.813
Order, Safety and Discipline	6	0.881
Physical Appearance of School	4	0.890
Perceived Exclusion	3	0.866
Social Atmosphere	2	0.912
Opportunities for Engagement	5	0.850
Academic Satisfaction	2	0.829
Parental Involvement	3	0.758

Results

A brief background of the respondents is presented in Table 3, including year level, ethnicity and faith background. A total of 70% of respondents reported being from some type of faith background, with close to 50% reporting being from a Seventh-day Adventist background and 20% reporting a variety of other faith backgrounds; 30% reported no faith background. A total of 48% of students reported attending church on a regular basis.

Table 6.3 Summary of Respondents by Year Level, Ethnicity and Faith Background

	Male	Female	Total
Year Level			
Year 5–6	51	48	99
Year 7–8	48	63	111
Year 9–10	36	46	82
Year 11–12	37	39	76
Total	**172**	**196**	**368**
Ethnicity			
European	126	150	276
Pacific Islander	8	13	21
Asian	8	4	12
Aboriginal/Torres Strait Islander	6	4	10
African	5	4	9
South American	5	2	7
Indian	3	5	8
Other	10	15	25
Total	**171**	**195**	**368**
Faith Background			
Seventh-day Adventist	90	87	177
Catholic	10	18	28
Church of England/Anglican	5	11	16
Hindu	5	3	8
Evangelical	3	4	7
Christadelphian	1	3	4
Mormon	2	2	4
Baptist	0	3	3
Other Faith	7	5	12
No Faith Background	49	60	109
Total	**172**	**196**	**368**

Faith Engagement Scales

Within the three faith engagement sub-scales (see Table 4), the lowest mean was within Personal Faith Engagement (2.97) and the highest within Attitudes to Christian Practice (3.77). Students are thus significantly more likely to report positive 'Attitudes towards Christian Practice' than to actually engage in Christian practice at a personal level (Mean difference[MD] = 0.796; p = 0.000; eta squared = 0.1).

Table 6.4 Overall Mean of Faith Engagement Scales

Scale	N	Mean (M)	Standard Deviation (SD)
Personal Faith Engagement	367	2.9707	1.14877
Attitudes to Christian Practice	367	3.7695	0.28699
School Influences on my Faith	368	3.3668	0.88431

School Satisfaction and School Climate Scales

Within the school satisfaction and school climate scales (see Table 5), the lowest means were within Parental Involvement (2.77), Academic Satisfaction (2.87) and Connection to School (2.97). The highest means were within School Satisfaction (3.95), School Appearance (3.93), Academic Support (3.88) and Social Atmosphere (3.80).

Differences According to Gender, Faith Background and Year Level

Prior to determining whether a significant relationship existed between school climate and faith engagement, a series of analysis of variance tests (ANOVAs) were carried out to determine whether the ways in which students responded to the survey significantly differed according to gender, faith background and year level. These analyses were designed to highlight any significant differences in means between these groups, in order to provide a better understanding of internal group factors that may affect the data.

Table 6.5 School Satisfaction and School Climate Scales

Scale	N	Mean (M)	Standard Deviation (SD)
School Satisfaction	368	3.9511	1.080376
Student–Teacher Relationships	368	3.5126	0.87554
Connection to School	368	2.9667	0.89012
Academic Support	368	3.8770	0.76339
Order, Safety and Discipline	367	3.4382	0.93714
Physical Appearance of School	367	3.9319	0.82241
Social Atmosphere	368	3.7962	0.95143
Perceived Exclusion	367	3.1362	0.96865
Opportunities for Engagement	366	3.5405	0.87687
Parental Involvement	368	2.7654	1.00569
Academic Satisfaction	367	2.8651	1.14349

Gender

Results indicate that gender was not a significant factor in how students responded to either the school climate or the faith engagement scales, with the exception of school appearance, where the mean for female students is slightly higher (female: M = 4.07, SD = 0.776; male: M = 3.78, SD = 0.847); t(366) = -3.44. However, the effect size (eta squared) is small (0.016; p = 0.001).

Faith Background

As part of the analyses, the various faith background categories were collapsed from the original 15 to just 3: Seventh-day Adventist (SDA) (N = 177), Non-SDA Christian (N = 68) and No Faith Background (N = 109). In all measures of school climate, Non-SDA Christian students perceived the school climate more positively, followed by SDA students, with those of No Faith Background perceiving the climate least positively. The only exception was in regards to Parental Involvement: SDA students perceived this more positively, followed by Non-SDA Christian students and, lastly, students of No Faith Background.

Not all of the differences in means are statistically significant. Table 6 displays those that do demonstrate a significant difference

(refer to Appendix A for eta-squared effect sizes). It should be noted that:

a. while statistically significant, the actual effect size in each case is small;
b. there is not a significant difference between every pair of variables – the asterisks in Table 6 signify the variables between which a significant difference exists.

Table 6.6 The Influence of Faith Background on School Climate Responses: Means

Scales	SDA	Non-SDA Christian	No Faith Background	Results from ANOVA
School Satisfaction	3.98	4.20*	3.70*	The only statistically significant difference in means was between the Non-SDA Christian and No Faith Background groups (small effect size).
Student–Teacher Relationships	3.56*	3.72**	3.28* **	A significant difference in means was found between: *SDA and No Faith Background (small effect size); **Non-SDA Christian and No Faith Background (small effect size).
Order, Safety Discipline	3.50*	3.66**	3.19* **	A significant difference in means was found between: *SDA and No Faith Background (small effect size); **Non-SDA Christian and No Faith Background (small effect size).
School Appearance	3.93*	4.20**	3.81* **	A significant difference in means was found between: *SDA and No Faith Background (small effect size); **Non-SDA Christian and No Faith Background (small effect size).

Scales	SDA	Non-SDA Christian	No Faith Background	Results from ANOVA
Social Atmosphere	3.82	4.04*	3.60*	The only statistically significant difference in means was between Non-SDA Christian and No Faith Background groups (small effect size).
Opportunities for Engagement	3.56	3.80*	3.33*	The only statistically significant difference in means was between Non-SDA Christian and No Faith Background groups (small effect size).
Parental Involvement	2.87*	2.82	2.56*	The only statistically significant difference in means was between SDA and No Faith Background groups (small effect size).

As previously noted, the only scales for which a significant difference was found between SDA and Non-SDA Christian groups are Student–Teacher Relationships; Order, Safety and Discipline; and School Appearance. While the effect size is small, it is nonetheless interesting to note the trend for Non-SDA Christian students to regard the school climate more positively. This may suggest that they have an appreciation for what the school offers that is perhaps taken for granted by families from within the Seventh-day Adventist Church.

Faith Background and Faith Engagement

Perhaps unsurprisingly, significant differences exist between the faith background groups on the faith engagement scales (see Table 7). (Refer to Appendix A for eta-squared effect sizes.) There is a significant difference in means in every pair of factors, with the exception in means of SDA and Non-SDA Christian groups in the Attitudes towards Christian Practice scale.

These effect sizes are likely to result in observable differences in attitudes and behaviour. For example, students of the No Faith Background group are less positive in their attitude towards school attempts to engage them in Christian faith activities than those from the Christian faith-background groups. The surprising finding, however, was the significant difference in means when comparing students

from an SDA background with Non-SDA Christian students; SDA students were significantly more likely to report positive attitudes (and personal commitment) towards faith engagement activities than Non-SDA Christians.

Table 6.7 The Influence of Faith Background on Faith Engagement Responses: Means

Scales	SDA	Non-SDA Christian	No Faith Background	Results from ANOVA
Personal Faith Engagement	3.58	3.09	1.95	A significant difference in means was found between all three groups.
Attitudes towards Christian Practice	4.46*	4.16**	2.45* **	A significant difference in means was found between: *SDA and No Faith Background **Christian Non-SDA and No Faith Background
School Influences on my Faith	3.74	3.44	2.75	A significant difference in means was found between all three groups.

Year Level and School Climate

In addition to comparing the difference in means between different faith groups, it was useful to do likewise according to year levels. The eight year levels involved in the survey (years 5–12) were collapsed to four: Year 5–6, Year 7–8, Year 9–10 and Year 11–12.

A series of ANOVAs were performed to compare the mean differences of these four groups in relation to the school climate scales, with significant differences evident across all scales (see Table 8). (Refer to Appendix A for eta-squared effect sizes.)

Table 6.8 The Influence of Year Level on School Climate Responses: Means

Scales	Year 5–6	Year 7–8	Year 9–10	Year 11–12	Results from ANOVA
School Satisfaction	4.58	3.85	3.72	3.52	A significant difference in means was found between Year 5–6 and the other three year levels.
Student–Teacher Relationships	3.95	3.40	3.27	3.36	A significant difference in means was found between Year 5–6 and the other three year levels.
Connectedness to School	3.56	2.87	2.72	2.61	A significant difference in means was found between Year 5–6 and the other three year levels.
Academic Support	4.27	3.77	3.70	3.70	A significant difference in means was found between Year 5–6 and the other three year levels.
Order, Safety & Discipline	3.99	3.39	3.13	3.14	A significant difference in means was found between Year 5–6 and the other three year levels.
School Appearance	4.21	3.79	3.84	3.88	A significant difference in means was found between Year 5–6 and the other three year levels.
School Atmosphere	4.16	3.72	3.67	3.57	A significant difference in means was found between Year 5–6 and the other three year levels.
Perceived Exclusion	2.88*	3.14	3.38*	3.20	A significant difference in means was found between Year 5–6 and Year 9–10.
Opportunities for Engagement	4.05	3.39	3.28	3.37	A significant difference in means was found between Year 5–6 and the other three year levels.
Parental Involvement	3.00*	2.85	2.65	2.47*	A significant difference in means was found between Year 5–6 and Year 11–12.
Academic Satisfaction	3.15*	2.85	2.64*	2.76	A significant difference in means was found between Year 5–6 and Year 9–10.

Year Level and Faith Engagement

A further series of ANOVAs were performed to examine the difference in means between year level and faith engagement scales. Results showed that while differences exist, they are only statistically significant for the School Influences on my Faith scale (see Table 9). (Refer to Appendix A for eta-squared effect sizes.)

Table 6.9 The Effect of Year Level on Faith Engagement Responses: Means

Scales	Year 5–6	Year 7–8	Year 9–10	Year 11–12	Results from ANOVA
School Influences on my Faith	3.76	3.25	3.23	3.19	A difference in means (small effect size) was found between Year 5–6 and the other three year levels.

Thus, as with the school climate scales, older students are less likely than younger students to view school influences on their faith in a positive light.

Correlations: School Climate and Faith Engagement

As previously outlined, one of the key purposes of the current project was to undertake an initial investigation into the relationship between school climate and faith engagement. As part of the quantitative approach, correlational analysis (Pearson) was performed to examine the relationship between these two sets of scales. (While this preliminary study initially focused on a quantitative analysis of school climate and faith engagement variables, qualitative data were also collected and analysed and are reported in the following chapter.)

Results from the correlational analysis indicated a number of significant relationships between these two sets of scales; Table 10 summarises the most significant of these. Effect sizes were calculated based on the standard interpretation of: small (r = 0.10 to 0.29), medium (r = 0.30 to 0.49) and large (r = 0.5 to 1.0) (J. W. Cohen, 1988). While a number of significant correlations were evident from the analysis, only those with at least a moderate effect size (of 0.3 or larger) are reported. In addition, to decrease the likelihood of Type I errors occurring, the alpha threshold was raised to 0.01 (L. Cohen et al., 2017).

Table 6.10 Examples of Results from Correlational Analysis

School Climate Scales	Faith Engagement Scales	Correlation (r)
School Satisfaction	School Influences on my Faith	r = 0.493*
Student–Teacher Relationships	School Influences on my Faith	r = 0.573*
Student–Teacher Relationships	Attitudes towards Christian Practice	r = 0.305*
Student–Teacher Relationships	Personal Faith Engagement	r = 0.301*
Connectedness to School	School Influences on my Faith	r = 0.502*
Academic Support	School Influences on my Faith	r = 0.498*
Order, Safety and Discipline	Personal Faith Engagement	r = 0.324*
Order, Safety and Discipline	School Influences on my Faith	r = 0.591*
Opportunities for Engagement	Personal Faith Engagement	r = 0.332*
Opportunities for Engagement	Attitudes towards Christian Practice	r = 0.313*
Opportunities for Engagement	School Influences on my Faith	r = 0.613*
Social Atmosphere	School Influences on my Faith	r = 0.421*
Parental Involvement	Personal Faith Engagement	r = 0.352*
Parental Involvement	School Influences on my Faith	r = 0.394*

* $p < 0.0001$, N = 363 to 368

It is interesting to observe that Student–Teacher Relationships and Opportunities for Engagement were correlated with all three faith engagement sub-scales with at least medium strength. Also of note is that Order, Safety and Discipline and Parental Involvement were correlated with two of the faith engagement sub-scales with at least medium strength. The most highly correlated sub-scales were Opportunities for Engagement and School Influences my Faith.

While these correlations do not establish causality, they do highlight the significant relationships that exist between these sets of variables. They also provide evidence that these relationships are not only statistically significant but possess sufficiently strong effect sizes to make a practical difference within the school setting.

Structural Equation Modelling

In order to further explore relationships between the variables, structural equation modelling using SPSS Amos 26 was used to construct models representing the influence of: observed variables on faith engagement (Figure 6.1), school climate variables on each other

(Figure 6.2) and faith engagement on school climate (Figure 6.3). The modelling was based on the following hypotheses:

a. Variables such as faith background, year level, school satisfaction and school climate significantly influence faith engagement.
b. School climate and school satisfaction variables influence each other.
c. Increased faith engagement is associated with more positive school climate.

In order to explore the possibility of a single school climate variable, a factor analysis (PCA: direct oblimin) was performed on the school satisfaction and school climate scales. Both the component analysis (Eigenvalues) and scree plot suggested a single factor solution and thus a single climate variable was created from the individual scales (Kaiser-Meyer-Olkin = 0.934; $p = 0.000$). In addition, the faith background variable was transformed into two categories:

a. students reporting a faith background (70%); and
b. students reporting a non-faith background (30%).

The Three Models

As shown in Figure 6.1, Faith Background, Year Level and School Climate (which includes school satisfaction) demonstrate a significant association with faith engagement variables. Model fit was determined using the following indices: Normed Fit Index (NFI) should exceed 0.9, Comparative Fit Index (CFI) should exceed 0.93, Tucker Lewis Index (TLI) should exceed 0.95, Goodness of Fit Index (GFI) should exceed 0.9 and the Root Mean Square Error of Approximation (RMSEA) should be less than 0.08. (Figure 1: NFI = 0.998, CFI = 1.0, TLI = 0.997, GFI = 0.998, RMSEA = 0.024)

Of particular note is the strong association Faith Tradition has with Attitudes towards Christian Practice ($\beta = 0.66$, $p < 0.001$) and the strong effect that Attitudes towards Christian Practice has on Personal Faith Engagement ($\beta = 0.59$, $p < 0.001$). School Climate likewise has a significant influence on Personal Faith Engagement ($\beta = 0.21$, $p < 0.001$).

A number of relationships within the school satisfaction and school climate variables were examined (see Figure 6.2). Within

this model, School Satisfaction, Student–Teacher Relationships and Connectedness to School were shown to be influenced by a number of the other school climate variables (NFI = 0.995, CFI = 0.999, TLI = 0.997, GFI = 0.994, RMSEA = 0.021). It is interesting to observe the significant influence that Order, Safety and Discipline has on Student–Teacher Relationships ($\beta = -0.45$, $p < 0.001$) and on Connectedness to School ($\beta = -0.34$, $p < 0.001$). Student–Teacher Relationships in turn demonstrates an influence on Connectedness to School ($\beta = -0.26$, $p < 0.001$) and School Satisfaction ($\beta = -0.30$, $p < 0.001$).

The model displayed in Figure 3 illustrates the reciprocal relationship between school climate and faith engagement (NFI = 0.994, CFI = 0.998, TLI = 0.991, GFI = 0.994, RMSEA = 0.043). As with the school climate scales, a factor analysis (PCA) was performed on the three faith engagement scales. Evidence again suggested a single-factor solution (KMO = 0.742, $p = 0.000$). The model illustrates a significant effect of Faith Engagement on Opportunities for Engagement ($\beta = 0.54$, $p < 0.001$) with indirect influences on both Order, Safety and Discipline and Student–Teacher Relationships.

As illustrated in Figure 1, the squared multiple correlations (R2) for the faith engagement variables are 0.51 (Attitudes towards Christian Practice), 0.61 (Personal Faith Engagement) and 0.71 (School Influences on my Faith). Thus, a significant proportion of the faith engagement variables are accounted for by faith tradition, gender, year level, school climate and school satisfaction. Likewise, Figure 3 illustrates the significant proportion of school climate influence accounted for by the influence of faith tradition, year level and faith engagement (Order, Safety and Discipline [0.63], Opportunities for Engagement [0.26] and Student–Teacher Relationships [0.68]).

School Climate and Faith Engagement Models – Structural Equation Modelling

Figure 6.1 Faith Engagement Model

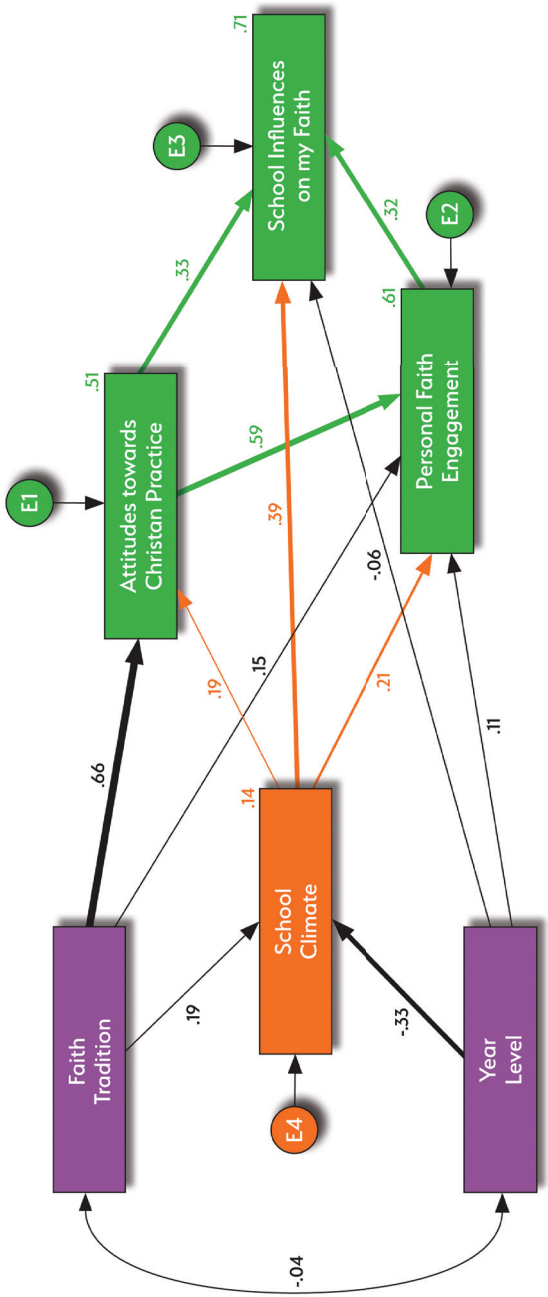


Figure 6.2 School Climate Model

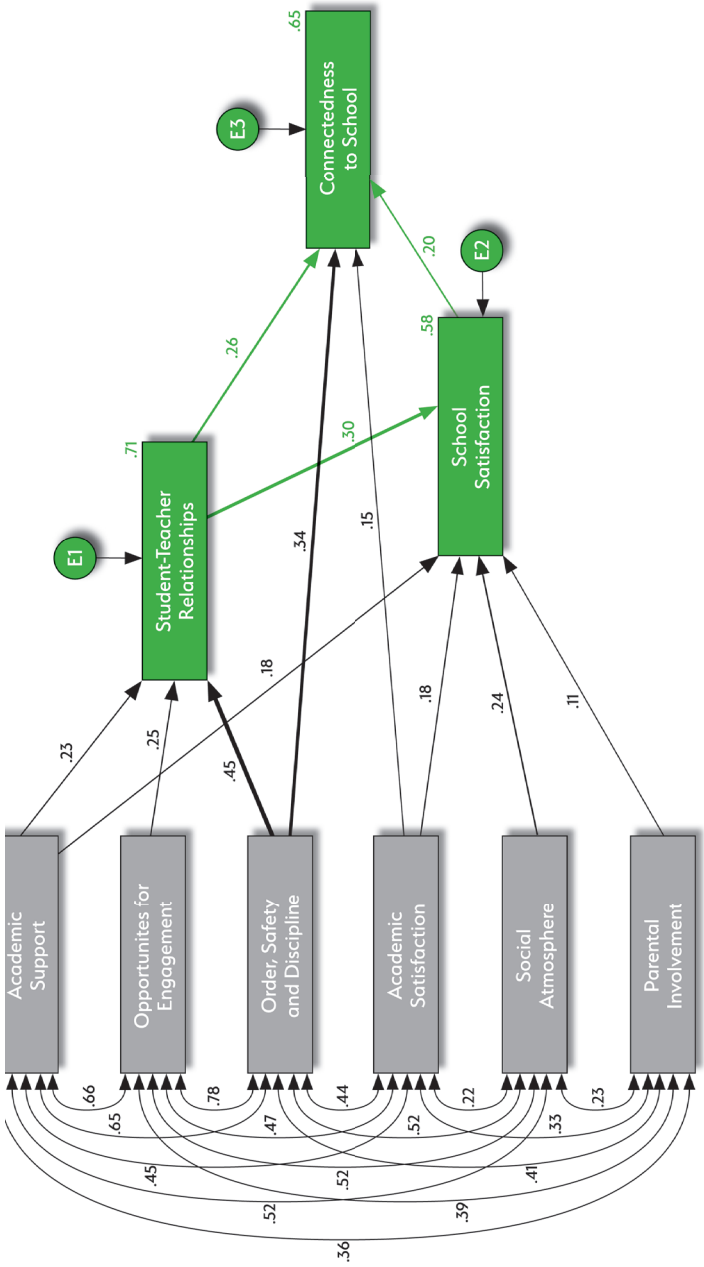
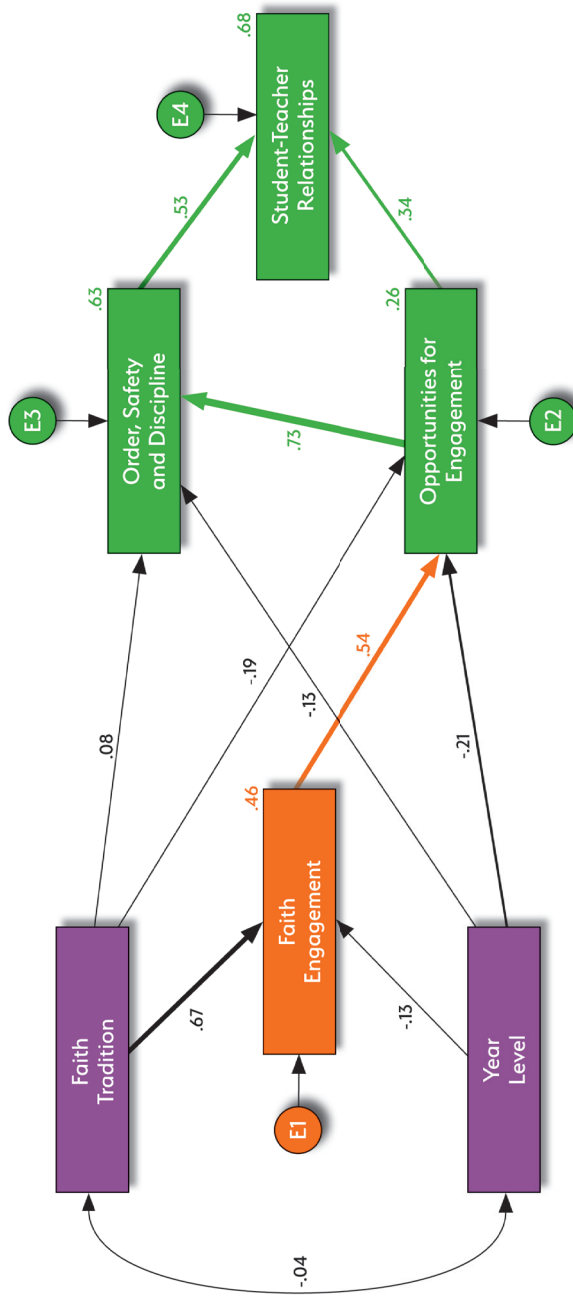


Figure 6.3 The Reciprocal Influence of Faith Engagement on School Climate



Discussion

This study hypothesised that significant relationships between school climate and faith engagement exist in faith-based schools. Bivariate relationships (Table 10) suggest a number of significant positive correlations exist between school climate and faith engagement. The results also demonstrate a significant relationship between school satisfaction and faith engagement. School satisfaction has been shown to be positively associated with school climate and with numerous academic and psychological outcomes (DeSantis King, Huebner, Suldo, & Valois, 2006; Suldo, Bateman, & Gelley, 2014; Zullig et al., 2018). However, longitudinal studies are needed to determine whether a positive increase in school climate and school satisfaction results in increased measures of faith engagement or vice versa.

The link between school climate and faith engagement has been suggested by other authors, where positive one-on-one relationships are viewed as essential to spiritual formation (Horan, 2017). It is proposed that it is only when the student–teacher relationship is strong that the student will accept the teacher's actions related to connecting faith and learning (Hoekstra, 2012). Thus, the development of faith should not be viewed as separate from other aspects of a student's experience.

The second hypothesis of this study is that students who come from a Christian family will be more likely to view the school's faith-engagement initiatives positively. The results substantiate this theory, indicating that the effect size on each variable is large (see Table 7). Moreover, the findings indicate that students from a non-faith background were more likely to view the school climate more negatively and to report lower school satisfaction than those from a (Christian) faith background. While the effect size in each case is small, it is interesting nonetheless to note that having a faith background is a predictor of viewing school climate more positively for students within a faith-based school.

Attitudes Towards Faith Engagement

The differences between attitudes towards faith engagement (both personal and communal) in those from a faith background and

those with a no-faith background is significant, with those of a no-faith background much less likely to report positive attitudes. It is useful to consider the impact of these less-positive attitudes on peer-group norms. Bandura's (2001) Social Cognitive Theory claims that a person's behaviour, cognition, personal factors and environment operate in a mutually interactive manner, each helping to determine the other. Indeed, there is strong evidence in the literature of the impact of social networks and peer influence on the attitudes and behaviours of those within the peer group (for example: Buhs, Ladd, & Herald, 2006; Faris & Ennett, 2012; Fortuin, van Geel, & Vedder, 2015; Ladd, Ettekal, Kochenderfer-Ladd, Rudolph, & Andrews, 2014; Shin & Ryan, 2014). In short, 'adolescents who like each other may become more similar to each other', in both attitudes and behaviour (Fortuin et al., 2015, p. 887).

It would thus be difficult to argue that the less-positive attitudes of particular groups towards faith will not have an effect on the attitude and behaviour of others. That is not to suggest, however, that all non-faith students view faith engagement negatively or that all Christian students view it positively; qualitative feedback makes it evident that this is not the case. Nonetheless, it is important for Christian schools to recognise that while they may view their role as missional in terms of impacting those not of a faith background, there is arguably a need for a corresponding acceptance that the significantly more-negative attitudes towards faith practice will influence the cultural norms within the school. This presents a challenge to Christian schools, not just in regard to enrolment policies, but for their ability to differentiate faith-engagement activities in order to engage students of a non-faith background in a way that is both attractive and supportive of their individual journeys. The ability of faith-based schools to create an equal sense of belonging for all students, regardless of their backgrounds, may be a useful aspect to consider. Indeed, the Faith Engagement Model (see Figure 1) illustrates the influence that school climate has on each faith engagement variable. Time given to efforts to positively impact school climate variables will be time well-spent and is likely to influence student receptiveness towards engagement in faith activities.

A limitation of the current study is the absence (within the student survey) of a question to indicate how long the student has been at

the school. It would be valuable to determine, for example, whether those from a non-faith background who have been in the school since primary school had different attitudes in middle or upper high-school, compared with those who joined the school later. Such a question would be a useful addition when administering the survey in the future.

School Climate Variables

The key role that particular school climate variables play in determining positive outcomes for students has been well documented. Notable examples include student–teacher relationships; connectedness and belonging; and order, safety and discipline (for example: Lewis, 2009; Petrie, 2014a, 2014b; Reaves et al., 2018; Syvertsen, Flanagan, & Stout, 2009; Zullig et al., 2018). Of note within the current study, however (and in addition to the afore-mentioned domains), is the significance of the Opportunities for Engagement variable (see Figure 2). The more that students report being actively (and equally) included in school life, the more likely they are to report positive Student–Teacher Relationships ($\beta = 0.34$, $p < 0.001$) and positive attitudes towards Order, Safety and Discipline ($\beta = 0.73$, $p < 0.001$).

The area of 'engagement' referred to above includes the important facet of 'student voice'; the opportunity for students to reflect, discuss and dialogue on school issues that affect them has increasingly been viewed as important within the literature (for example: Fleming, 2017; Lewis & Burman, 2008; Quinn & Owen, 2016). The success of schools in effectively harnessing the power of student voice is likely to be reflected in more positive measures of both school climate and faith engagement.

The School Climate Model (see Figure 2) illustrates the significant impact that Opportunities for Engagement; Order, Safety and Discipline; and Academic Support have (both directly and indirectly) on the key domains of Student–Teacher Relationships, School Satisfaction and Connectedness to School. The ability to regularly measure and monitor these domains, and to implement initiatives that have been shown to impact these interrelated areas, will provide a valuable means for improving school climate and in turn influencing student attitudes towards and engagement in faith activities.

Faith Engagement and Non-Adventist Christian Students

One of the unpredicted findings of this study is the difference in self-reported attitudes towards faith engagement between students from Non-SDA Christian backgrounds and those from SDA families. The mean scores for Personal Faith Engagement, for example, are 3.58 (SDA) and 3.09 (Non-SDA Christian). This may suggest that there are initiatives particular to the Seventh-day Adventist Church that are having a significant impact on the faith attitudes and engagement of their youth. The use of focus groups in future research may provide valuable insights into these connections; it would be valuable to explore non-school influences that students perceive to have positively impacted their faith journeys.

The Impact of Year Level

In common with other research (for example: Kim, Schwartz, Cappella, & Seidman, 2014; Magen-Nager & Azuly, 2018), this study notes a decline in positive attitudes towards both school climate and faith engagement as students progress through high school. The significant social and physical changes that occur during this time provide an ongoing challenge for schools. The literature suggests that there may be a need to adjust teacher and administrative social processes, to provide additional support at the individual student level and to consider better methods for understanding and impacting peer networks (Farmer, Hall, Petrin, Hamm, & Dadisman, 2010; Kim et al., 2014; Shriberg et al., 2017).

Conclusion

It should be encouraging for faith-based schools to note the strong relationship that exists between school climate and faith engagement. Structural equation modelling suggests that these effects are reciprocal and are most likely cyclical in nature. It is hypothesised that well-directed efforts to increase school climate will have a significant influence on student attitudes and behaviour towards Christian practice (and vice versa), though longitudinal research will be needed to substantiate this hypothesis. It will be important to regularly measure both sets of constructs and to gather qualitative data from students and staff, in order to better understand the experiences of both within the school context.

It will be useful for faith-based schools to consider appropriate differentiation of faith-engagement opportunities, so as to meet the needs of students from non-faith backgrounds and to provide opportunities for them to engage in positive and meaningful ways. The following chapter will unpack some of the qualitative data that will assist in addressing this theme a little more fully.

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Appendix A

Apendix Table 6.11 The Influence of Faith Background on School Climate: Effect Sizes

Scales	SDA	Non-SDA Christian	No Faith Background	Results from ANOVA
School Satisfaction	3.98	4.20*	3.70*	F(2, 351) = 5.02; p = 0.007 0.028 (eta squared) = small effect *Non-SDA Christian vs No Faith Background (MD = 0.50; p = 0.06)
Student–Teacher Relationships	3.56*	3.72 **	3.28* **	F(2, 351) = 6.07; p = 0.003 0.033 (eta squared) = small effect *SDA vs No Faith Background (MD = 0.28; p = 0.23) **Non-SDA Christian vs No Faith Background (MD = 0.44; p = 0.003)
Order, Safety and Discipline	3.50*	3.66**	3.19* **	F(2, 350) = 6.48; p = 0.002 0.036 (eta squared) = small effect *SDA vs No Faith Background (MD = 0.31; p = 0.015) **Non-SDA Christian vs No Faith Background (MD =0.47; p = 0.003)
School Appearance	3.93*	4.20**	3.81* **	F(2, 350) = 4.87; p = 0.008 0.027 (eta squared) = small effect *SDA vs Non-SDA Christian (MD = 0.27; p = 0.05) **Non-SDA Christian vs No Faith Background (MD = 0.39; p = 0.006)
Social Atmosphere	3.82	4.04*	3.60*	F(2, 177.57) = 5.07; p = 0.006 (Welch) 0.028 (eta squared) = small effect *Non-SDA Christian vs No Faith Background (MD = 0.45; p = 0.005)

Scales	SDA	Non-SDA Christian	No Faith Background	Results from ANOVA
Opportunities for Engagement	3.56	3.80*	3.33*	F(2, 349) = 6.57; p = 0.002 0.036 (eta squared) = small effect *Non-SDA Christian vs No Faith Background (MD = 0.48; p = 0.001)
Parental Involvement	2.87*	2.82	2.56*	F(2, 351) = 3.52; p = 0.031 0.020 (eta squared) = small effect *SDA vs No Faith Background (MD = 0.31; p = 0.027)
Personal Faith Engagement	3.58* **	3.09* ***	1.95** ***	F(2, 350) = 111.4; p = 0.000 0.76 (eta squared) = large effect *SDA vs Non-SDA Christian (MD =0.49; p = 0.001) **SDA vs No Faith Background (MD = 10.63; p = 0.000) ***Non-SDA Christian vs No Faith Background (MD = 1.14; p = 0.000)
Attitudes towards Christian Practice	4.46*	4.16**	2.45* **	F(2, 350) = 165.6; p = 0.000 0.49 (eta squared) = large effect *SDA vs No Faith Background (MD = 20.01; p = 0.000) **Non-SDA Christian vs No Faith Background (MD = 1.71; p = 0.000)
School Influences on my Faith	3.74* **	3.44** ***	2.75* ***	F(2, 351) = 57.8; p = 0.000 0.25 (eta squared) = large effect *SDA vs Non-SDA Christian (MD = 0.29; p = 0.19) **SDA vs No Faith Background (MD = 1.00; p = 0.000) ***Non-SDA Christian vs No Faith Background (MD = 0.70; p = 0.000)

Appendix Table 6.12 The Influence of Year Level on School Climate: Effect Sizes

Scales	Year 5–6	Year 7–8	Year 9–10	Year 11–12	Results from ANOVA
School Satisfaction	4.58* ** ***	3.85*	3.72**	3.52***	F(3, 364) = 19.2; p = 0.000 0.14 (eta squared) = large effect *Year 5–6 vs Year 7–8 (MD = 0.73; p = 0.000) **Year 5–6 vs Year 9–10 (MD = 0.87; p = 0.000) ***Year 5–6 vs Year 11–12 (MD = 1.06; p = 0.000)
Student-Teacher Relationships	3.95* ** ***	3.40*	3.27**	3.36***	F(3, 364) = 12.83; p = 0.000 0.10 (eta squared) = medium effect *Year 5–6 vs Year 7–8 (MD = 0.55; p = 0.000) **Year 5–6 vs Year 9–10 (MD = 0.68; p = 0.000) ***Year 5–6 vs Year 11–12 (MD = 0.59; p = 0.000)
Connectedness to School	3.56* ** ***	2.87*	2.72**	2.61***	F(3, 364) = 24.82; p = 0.000 0.17 (eta squared) = large effect *Year 5–6 vs Year 7–8 (MD = 0.68; p = 0.000) **Year 5–6 vs Year 9–10 (MD = 0.83; p = 0.000) ***Year 5–6 vs Year 11–12 (MD =0.94; p = 0.000)
Academic Support	4.27* ** ***	3.77*	3.70**	3.70***	F(3, 196.37) = 12.76; p = 0.000 (Welch) 0.10 (eta squared) = medium effect *Year 5–6 vs Year 7–8 (MD = 0.50; p = 0.000) **Year 5–6 vs Year 9–10 (MD = 0.56; p = 0.000) ***Year 5–6 vs Year 11–12 (MD = 0.53; p = 0.000)
Order, Safety & Discipline	3.99* ** ***	3.39*	3.13**	3.14***	F(3, 363) = 19.34; p = 0.000 0.14 (eta squared) = large effect *Year 5–6 vs Year 7–8 (MD = 0.60; p = 0.000) **Year 5–6 vs Year 9–10 (MD = 0.86; p = 0.000) ***Year 5–6 vs Year 11–12 (MD = 0.84; p = 0.000)

Scales	Year 5–6	Year 7–8	Year 9–10	Year 11–12	Results from ANOVA
School Appearance	4.21* ** ***	3.79*	3.84**	3.88***	F(3, 363) = 5.47; p = 0.001 0.04 (eta squared) = small effect *Year 5–6 vs Year 7–8 (MD = 0.42; p = 0.001) **Year 5–6 vs Year 9–10 (MD = 0.37; p = 0.012) ***Year 5–6 vs Year 11–12 (MD = 0.32; p = 0.044)
School Atmosphere	4.16* ** ***	3.72*	3.67**	3.57***	F(3, 364) = 7.19; p = 0.000 0.06 (eta squared) = medium effect *Year 5–6 vs Year 7–8 (MD = 0.44; p = 0.004) **Year 5–6 vs Year 9–10 (MD = 0.49; p = 0.003) ***Year 5–6 vs Year 11–12 (MD = 0.58; p = 0.000)
Perceived Exclusion	2.88	3.14	3.38*	3.20	F(3, 197.91) = 4.25; p = 0.009 (Welch) 0.03 (eta squared) = small effect *Year 5–6 vs Year 9–10 (MD = 0.50; p = 0.003)
Opportunities for Engagement	4.05* ** ***	3.39*	3.28**	3.37***	F(3, 194.05) = 17.7; p = 0.000 (Welch) 0.13 (eta squared) = medium effect *Year 5–6 vs Year 7–8 (MD = 0.67; p = 0.000) **Year 5–6 vs Year 9–10 (MD = 0.77; p = 0.000) ***Year 5–6 vs Year 11–12 (MD = 0.68; p = 0.000)
Parental Involvement	3.00*	2.85	2.65	2.47*	F(3, 364) = 4.48; p = 0.004 0.04 (eta squared) = small effect *Year 5–6 vs Year 11–12 (MD = 0.52; p = 0.004)
Academic Satisfaction	3.15*	2.85	2.64*	2.76	F(3, 363) = 3.41; p = 0.018 0.03 (eta squared) = small effect *Year 5–6 vs Year 9–10 (MD = 0.51; p = 0.014)

Appendix Table 6.13 The Influence of Year Level on Faith Engagement: Effect Sizes

Scales	Year 5–6	Year 7–8	Year 9–10	Year 11–12	Results from ANOVA
School Influences on my Faith	3.76* ** ***	3.25*	3.23	3.19	F(3, 199.16) = 9.4; p = 0.000 (Welch) 0.04 (eta squared) = small effect *Year 5–6 vs Year 7–8 (MD = 0.51; p = 0.000) **Year 5–6 vs Year 9–10 (MD = 0.53; p = 0.000) ***Year 5–6 vs Year 11–12 (MD = 0.57; p = 0.000)