Personal and School Factors, and the Mediating Role of School Engagement as Determinants of Student Leadership Skill: A Structural Equation Model[1]

Sheryll Ann M. Castillo[2], Jezamine R. De Leon[2], Leonardo B. Dorado[1] and Mylene S. Gumarao[1]
[1]Adventist University of the Philippines; [2]Philippine National Academy

Abstract

Leadership is an important 21st century skill, and it is imperative for schools to develop responsible and authentic student leaders, not only to equip them for future employment, but also to produce a new breed of good leaders in society. However, school programs that aim to develop leadership capacities are short-term, and often benefit only the minority (such as students already elected as club/organization officers). Using structural equation modeling procedures, this study explored inherent personal and school factors, and the mediating role of school engagement in developing leadership skill among students. A total of 881 grade 9 and 10 students were selected for the study, through probability and non-probability sampling techniques, from schools in the Philippines, Thailand, Indonesia, and Pakistan. The analysis showed that school climate had the largest total effect, which suggests that a positive school climate is the strongest predictor of leadership development among students. Moreover, teacher quality achieved a full mediation to leadership skill, which implies that in producing leaders, the role of the teacher is to ensure that students are engaged in school. The theoretical and practical implications of the data are further discussed in the study.

Keywords: *Self-efficacy, sense of well-being, school climate, school engagement, teacher quality, student leadership, 21st century skills*

Introduction

Different sectors of the society are unified in the idea that an emphasis of 21st century skills is vital. Kivunja (2015) emphasized that in the digital era, students need more than just thinking skills or content knowledge, but they need to develop life skills such as leadership. In the study conducted by Hanover Research (2011), leadership was indicated as significant in five out of six 21st century skills frameworks. Zorina et al. (2018) emphasized that there is a vital need to teach youth the value of leadership skills, as well as the ability to work in competitive market environments. In addition, there is a growing discontent among employers regarding the skills possessed by many young people seeking employment. They may have high levels of proficiency in technical aspects, but lack social and personal skills, including leadership ability. Lack of such skills affects graduate employability (Bennett, 2002).

There is consensus among many scholars when it comes to the definition of leadership. It denotes not only an ability to induce compliance among followers, but also to exercise influence and manage interactions among people, and be instrumental in achieving goals (Bass, 1990 as cited by Kivunja, 2015). Ledward and Hirata (2011) also emphasized that good leadership skill is manifested in the ability to work with the interests of the larger community in mind, to inspire others by example, and to capitalize on the strengths of others to attain common objectives. With this, it is evident that being a leader requires high levels of interpersonal and influential skills, as well as integrity and responsibility. Interestingly, according to Goldsmith, Morgan, and Ogg (2004), leadership is not an innate or inherited trait, but is learned by practice.

---

[1] This paper was presented at the 2018 International Scholars' Conference, held on October 29-30, 2018 and hosted by Adventist University of the Philippines.
[2] Corresponding author's email address: samcastillo@aup.edu.ph

The Importance of Developing Leadership Skill

It is well established that having dynamic leadership skills can lead to better outcomes for students' lives at school and beyond. Studies have shown that students who have leadership roles in school get better grades and acquire better planning and decision making-skills than those who do not (Karagianni & Montgomery, 2018). Adolescent leaders are also more likely to take up managerial positions as adults, and leadership skills developed early can have a positive impact on future wages (Karagianni & Montgomery, 2018). Kumar (2018) supports this claim, stating that students who develop leadership skills also optimize their habits and learning, as well as developing enhanced time management practices and awareness skills. As students transition in their careers and face the many challenges of employment and advancement issues, they need leadership skill to accept challenges, solve problems, and analyze their career direction. Therefore, it is important that students acquire leadership skill. The school plays a pivotal role in gearing up students for future leadership roles. Karagiani and Montgomery (2018) indicated that our adult organizational behavior is rooted in how we experience school.

However, while efforts pertaining to the development of leadership qualities among students have been explored (Haley, Urquhart, Jones, Silverman, & Hunzicker, 2018; Heinecke, Cole, Han, & Mthethwa, 2016), these are limited and inadequate in several ways. Grady (2018) observed that students do not have access to activities that focus on leadership development. Karagianni and Montgomery (2018) also noted that school leadership programs, such as scouting and sports clubs, have provided restricted opportunities for young adults to experience a leadership role. Further, other school-wide programs on leadership usually run on a modular approach over a certain period; thus they can only accommodate a select few, and the process of selection also comes with other problems such as who gets to be selected, and who should do the selection. The scant, selective, and short-term nature of school-wide leadership programs are some of the reasons why opportunities to improve leadership qualities in students are ineffective and inadequate.

This study postulates that a more effective approach to training students to become leaders is to embed it in the school curriculum. Thus, the objective of this study is to come up with a student leadership-development model – using and integrating factors already inherent in students and schools – that may be implemented by teachers and school policy-makers. To achieve this, the relationships of students' personal factors such as their motivational beliefs and sense of well-being, school factors such as teacher quality and school climate, and the mediating role of school engagement were explored using the structural equation modeling (SEM) technique. This study aimed to analyze personal and school factors that influenced students' leadership skill.

Theoretical Framework

Albert Bandura's Social Cognitive Theory was used as the primary framework for this study. In the Social Cognitive view, Schunk, Meece, and Pintrich (2014) stated that people acquire knowledge, skills, strategies, beliefs, and emotions through their interactions with – and observation of – others.

In one of the key assumptions of this theory, Bandura (1991, as cited in Schunk et al., 2014) specifically emphasized,

> people are neither driven by inner forces nor automatically shaped and controlled by external stimuli. Rather, human functioning is explained in terms of a model of triadic reciprocality in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other.

Figure 1 presents the hypothesized model of this study that is anchored on the tenets of Social Cognitive Theory. As shown there, this study hypothesized that for schools to develop leadership skills among its students, personal factors such as motivational beliefs (goal orientation, task value, academic locus of control, and self-efficacy) and sense of well-being, and school factors such as teacher quality and school climate come into play, with school engagement mediating these relationships.
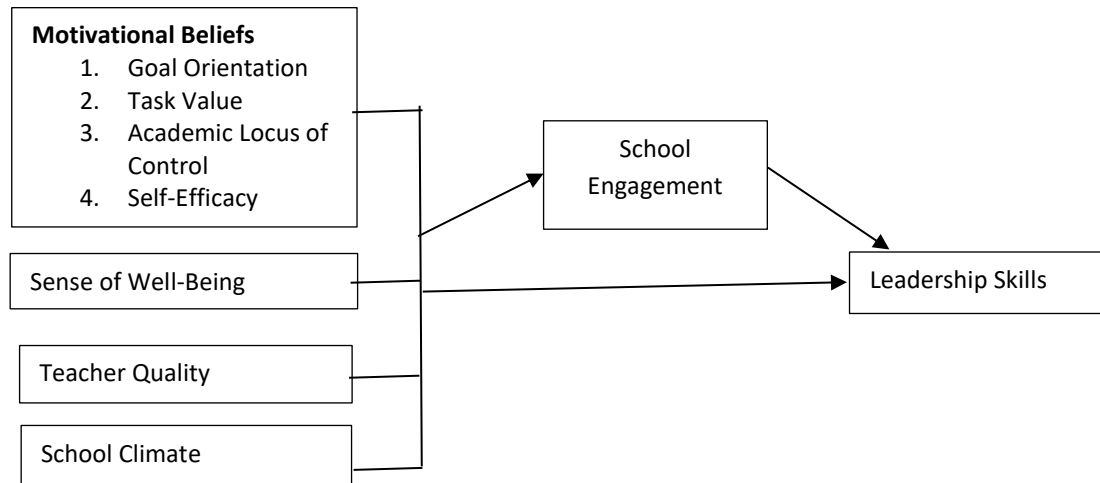
Figure 1. Hypothesized Model for Leadership

Methods

This study utilized a quantitative descriptive correlational design, and structural equation modeling. A total of 881 grade 9 and 10 students were chosen from selected schools in the Philippines, Indonesia, Pakistan, and Thailand; they were selected through convenience and cluster sampling techniques.

In gathering data, the researchers collaborated with teachers and research supervisors in the selected areas and countries. The teacher of the chosen section (cluster) administered the research instrument to his or her respective students under the supervision of another teacher (with a minimum of Master's degree), who was knowledgeable in the research process.

We adopted standardized questionnaires and constructed tests that were further validated through confirmatory factor analysis. These were as follows:

The *Motivational Beliefs in Learning Questionnaire (MBLQ)* is an 18-item questionnaire that measured the respondents' motivational beliefs in terms of goal orientation (5 items), task value (4 items), locus of control (4 items), and self-efficacy (5 items). This questionnaire was adopted – but significantly modified – from the widely used Motivated Learning Strategies Questionnaire by Pintrich, Smith, Garcia and McKeachie (1991).

The *Warwick Edinburgh Mental Well-being Scale (WEMWBS)* is a 14-item questionnaire that was used to measure the sense of well-being. Permission was sought and granted by NHS Health Scotland for the use of this questionnaire, and it was subjected to reliability analysis to ascertain that it was fit to be used with Asian populations.

The *Students' Evaluation of 21st Century Teaching (SECT)* is a researcher-constructed 11-item test which measured students' perception of their teachers' personal (6 items) and professional qualities (5 items).

The *School Climate Survey (SCS)* is 21-item researcher-constructed test designed to identify students' perceptions of their school experiences in terms of physical (10 items), and curricular (11 items) dimensions.

The *School Engagement Survey (SES)* is an 11-item measure of school engagement as a mediating variable. This was adopted – but significantly modified – from the School Engagement Scale by Fredricks, Blumenfeld, Friedel, and Paris (2005).

The *21st Century Leadership Skill* is a 9-item researcher-constructed test that was used to measure respondents' perception of the extent to which they exhibit leadership skill according to

Alimbekova, Asybekova, and Karimova's (2016) conceptualization of leadership potential as an aggregate of personal qualities and interpersonal and system skills.

Results and Discussion

Table 1 presents the level of students' motivational beliefs, sense of well-being, school engagement, and leadership skills, as well as the extent of perception of their teachers' qualities and school climate in terms of means and standard deviation.

Table 1. Descriptive Statistics of Students' Personal and School Factors, School Engagement, and Leadership Skills

Variables	M	SD	Verbal Interpretation
Goal Orientation	1.99	0.60	Low
Task Value	3.95	0.95	High
Locus of Control	3.45	0.50	Moderate Internal Control
Self-Efficacy	3.54	0.61	High
Sense of Well-Being	3.66	0.52	High
Teacher Quality	3.95	0.71	Very Good
Physical Climate	3.56	0.70	Positive
Curricular Climate	4.05	0.60	Positive
School Engagement	3.71	0.87	Engaged
Leadership Skill	3.39	0.75	Moderate

As shown in the Table, study respondents generally had high levels of task value, self-efficacy, and sense of well-being. A low level of goal orientation in this case implies that students tended to study to get high grades, but not to achieve mastery of their learning. In terms of locus of control, a moderate level indicates that – in some cases – students attributed their school experiences not to their ability, but to fate or luck. Generally, students also perceived that their teachers had very good personal and professional qualities, and their schools had a positive physical and curricular climate. The results on school engagement showed that students considered themselves as 'engaged' (but not highly engaged) in class work and school activities, which means that there could be instances when students did not seem participative. Students' perception of their leadership skills was moderate.

Table 2 presents the correlations among variables; it shows that variables were related as specified by theory and in the predicted direction. Moreover, all personal and school factors investigated and school engagement were all found to be positively and significantly related to leadership skills. Higher levels of motivational beliefs, sense of well-being, teacher quality, school climate, and school engagement were related to higher levels of leadership skill. Since correlation of variables under study had been established, the strength of the relationships and the effects of a mediator variable, which is school engagement, were further analyzed using a SEM technique.

Table 2. Zero-order Correlations of Variables

	1	2	3	4	5	6	7	8	9	10
1. Goal Orientation	1									
2. Task Value	0.25**	1								
3. Locus of Control	0.17**	0.14**	1							
4. Self-Efficacy	0.34**	0.02	0.15**	1						
5. Sense of Well-Being	0.29**	0.14**	0.13**	0.40**	1					
6. Teacher Quality	0.27**	0.31**	0.09**	0.24**	0.39**	1				
7. Physical Climate	0.25**	0.19**	0.05	0.18**	0.28**	0.37**	1			
8. Curricular Climate	0.32**	0.33**	0.20**	0.27**	0.36**	0.46**	0.53**	1		
9. School Engagement	0.33**	0.40**	0.14**	0.34**	0.46**	0.46**	0.33**	0.50**	1	
10. Leadership Skill	0.22**	0.04	0.11**	0.38**	0.42**	0.27**	0.31**	0.44**	0.31**	1

** Correlation significant at 0.01 level (2-tailed)

Figure 2 presents the SEM output for leadership skill that generated the best fitting model achieved by modifications, which include transforming unidirectional to bidirectional paths and removing non-significant paths. In this case, the other motivational beliefs such as goal orientation, task value, and locus of control had been taken out of the model.
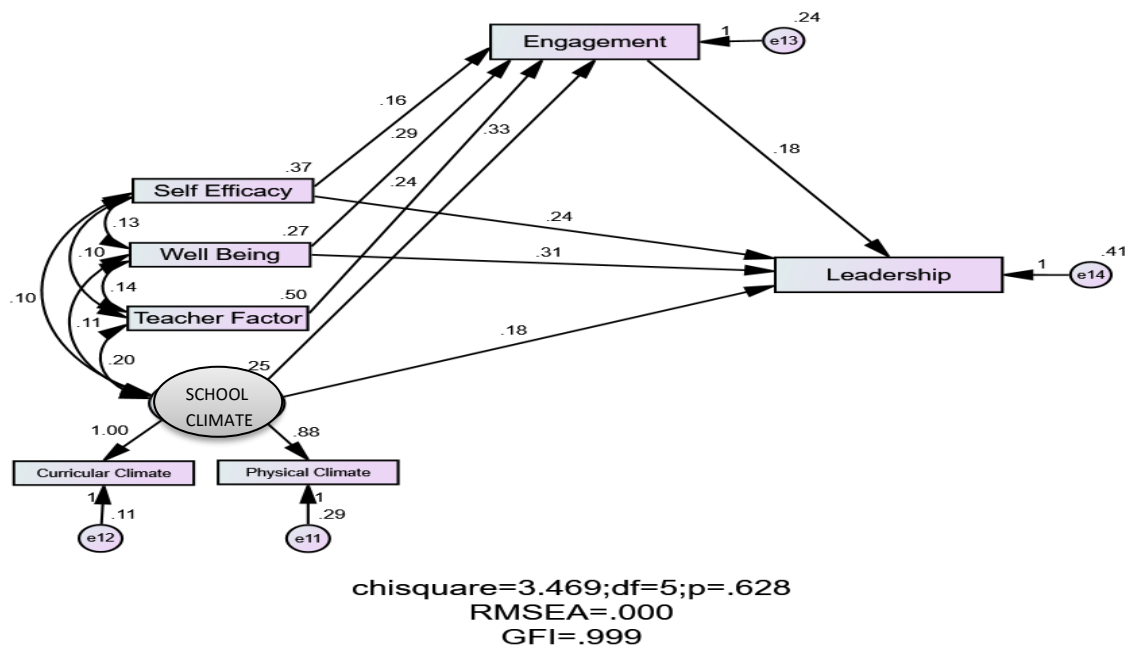
Figure 2. Mediational Model for Leadership

As shown in Figure 2, the final model fitted the indices of X^2/df = 7; p = 0.694; *RMSEA* = 0.000; and *GFI* = 0.999, which are all interpreted as representing a good fit. All shown paths are significant at $p < 0.0001$. The path from self-efficacy, sense of well-being, teacher quality, and school climate to school engagement (Path A) yielded values of β = 0.16, 0.29, 0.24, and 0.33, respectively. The path from school engagement to leadership (Path B) was β = 0.18. Since the indirect effect is the product of Paths *A* and *B*, the indirect effects of self-efficacy, sense of well-being, teacher quality, and school climate are 0.029, 0.052, 0.043, and 0.059 respectively. Among these variables, only self-efficacy, sense of well-being, and school climate had direct effects on leadership, with β = 0.24, 0.31, and 0.18 respectively. This indicated a partial mediation to school engagement yielding a total effect of 0.269 for self-efficacy, 0.362 for sense of well-being, and 0.239 for school climate. Only teacher quality had no direct effect on leadership.

Well-being as the Strongest Predictor

A sense of well-being had the largest direct and total effects on leadership skills, which means that it is the strongest predictor. This implies that for students to develop leadership skills, schools must ensure that students acquire experiences that would make them feel positively about life and be able to function effectively as an individual.

The close relationship of well-being and leadership skill is supported by Luthans and Avolio (2003). The model developed explains that well-being plays a very important role in self-development – particularly in enhancing a more solid self-identity – that in turn provides the mechanism for the development of leadership skill. Roth, Suldo, and Ferron (2017) agreed with this claim, stating that among adolescents, high levels of well-being are associated with superior outcomes, including leadership skill. Further, Roche, Haar, and Luthans (2014) pointed out that in adults, high levels of mindfulness, hope, optimism, and resilience predict lower levels of burn-out among supervisors and managers, which leads to better leadership performance. On the mediating role of engagement, the results of this study paralleled those of Adil and Kamal's (2016) work on adults in an organization. Their study concluded that engaged employees are more likely to be intrinsically motivated, thereby leading to higher levels of satisfaction and performance.

When well-being is promoted in schools, students will be happy and satisfied with their lives in general, thereby making valued contributions to others and to society. To be able to achieve this, it is imperative that school administrators, counselors/psychologists, and teachers work together to embed in the curriculum (general, instructional, guidance, etc.) certain values, programs, and activities that encourage students to experience more positive emotions, meaning in life, autonomy, competence, and relatedness.

What a Positive School Climate Can Do

The model also showed that school climate yielded the highest indirect effect ($\beta = 0.059$). This implies that a positive curricular and physical climate that encourages student engagement fosters the development of student leadership skills.

In the literature, it has long been recognized that school climate enhances student achievement and reduces problem behavior and drop-out rates (Wang & Degol, 2015). The result of our study, then, adds to the wealth of literature that highlights the importance of positive school climate – not only to students' academic achievement – but also to a host of other school outcomes, including leadership skill. However, here it is emphasized that the kind of climate schools must pursue is one that also encourages engagement. According to Thapa, Cohen, and Guffey (2013), a positive school climate that is characterized by having different activities, like community service-learning and student council programs, provides more opportunity for student engagement and enhances their learning environment. When such activities are presented in a supportive and collaborative learning environment, they encourage students to build upon one another's ideas in productive and engaging ways that ultimately promote leadership skills.

The Role of Teachers

The only factor in the model that achieved full mediation was teacher quality. This suggests that teachers alone, whilst considering their personal and professional qualities, do not have a direct effect on the development of student leadership skill. Engagement is the key. This emphasizes that ideally the primary goal of the teacher is more than just imparting knowledge of the "3 Rs". More importantly, it involves modelling behavior, creating activities, and developing learning environments that will promote student engagement.

In the literature, van de Grift, Chun, Maulana, & Helms-Lorenz's (2016) analysis showed that fostering student engagement is established through developing a safe and stimulating climate, organizing classroom management, differentiating instruction, and promoting active learning.

Our results add to the growing evidence that teacher quality, including the quality of student-teacher relationship, matters for students' social and academic performance in school

(Portilla, Ballard, Adler, Boyce, & Obradović, 2014). Wentzel (1999) reported strong evidence that students were more likely to engage in school work if they felt valued and supported by their teachers. When students sense that their teachers are caring, fair, and committed, they are influenced to actively participate in the classroom and internalize learning.

Conclusions and Recommendations

This study concludes, based on the SEM analysis, that to develop leadership skill among high school students, certain personal and school factors interrelate as indicated in the social cognitive view. In this case, personal factors such as self-efficacy and well-being – as well as school factors such as teacher quality and school climate – contribute to developing leadership skill, with school engagement mediating in the relationships.

Specifically, both personal factors had direct and indirect effects on leadership skill, indicating a partial mediation with school engagement. Well-being appeared to be the strongest predictor of leadership skill, which suggests that if schools focus on making students happier and having more meaningful lives, they are more likely to develop as leaders as well. In the school context, school climate had the largest indirect effect. Therefore, designing and implementing a physical and curricular climate that fosters engagement greatly enhances student leadership. Among factors included in the model, only teacher quality yielded full mediation. This implies that there is no way teachers can help students become leaders unless they endeavor to encourage students become highly engaged in school and in the learning process.

The results of this study, and its corresponding implications, point to the need for educational reform. To prepare students for their future careers and leadership roles, schools must shift their student training targets to incorporate individual and contextual issues. The school curriculum must be student-centered, enhancing positive values and emotional skills, while at the same time fostering engagement through active and meaningful learning activities. These salient points tend to be congruent with the tenets of positive education. According to Oades, Robinson, Green, and Spence (2011), positive education is "the development of educational environments that enable the learner to engage in established curricula in addition to knowledge and skills to develop their own and others' wellbeing." Thus, with this result, it is recommended that schools adopt, or modify their curriculums to embrace the main elements of positive education. Several studies carried out in the United States already have indicated the effectiveness of such a curriculum in preventing depression, increasing life satisfaction, encouraging social responsibility, and enhancing academic achievement (Waters & White, 2015). It is therefore relevant that the adoption of such a curriculum be tried and tested in Asian schools.

References

A Crosswalk of 21st Century Skills. (2011). Hanover research. Retrieved from http://www.montgomeryschoolsmd. org/uploadedFiles/about/strategicplan/21stCenturySkills.pdf

Adil, A., & Kamal, A. (2016). Impact of psychological capital and authentic leadership on work engagement and job related affective well-being. *Pakistan Journal of Psychological Research, 31*(1), 1–21.

Alimbekova, A., Asylbekova, M., & Karimova, R. (2016). Development of leadership potential in students within an education space of a pedagogical university. *International Journal of Environmental and Science Education*, *11*(11), 4610–4616.

Bennett, R. (2002). Employers' demands for personal transferable skills in graduates: A content analysis of 1000 job advertisements and an associated empirical study. *Journal of Vocational Education and Training*, *54*(4), 457–476. doi: 10.1080/13636820200200209

Fredricks, J., Blumenfeld, P., Friedel, J., & Paris, A. (2005). School engagement. In K. Moore & L. Lippman (Eds.), *The Search Institute series on developmentally attentive community and society. What do children need to flourish: Conceptualizing and measuring indicators of positive development* (pp. 305–321). New York, NY, US: Springer Science + Business Media. Retrieved from http://dx.doi.org/10.1007/0-387-23823-9_19

Grady, M. (2018). Community college students: Social capital and the soft skills of leadership. *Journal of Academic Administration in Higher Education*, *14*(1), 11–14.

Goldsmith, M., Morgan, H., & Ogg, A. (Eds.). (2004). *Leading organizational learning: Harnessing the power of knowledge* (Vol. 298). San Francisco, CA: John Wiley & Sons.

Haley, K., Urquhart, C., Jones, N., Silverman, J., & Hunzicker, J. (2018). Teacher leader reflections: Teacher leadership and student learning. In Jana Hunzicker (Ed.), *Teacher leadership in professional development schools* (pp. 99–106). Bingley, UK: Emerald Publishing Limited.

Heinecke, W., Cole, R., Han, I., & Mthethwa, N. (2016). Student activism as civic engagement: Challenging institutional conditions for civic leadership at University of Virginia. In M. Krista, D. Tania & D. Mitchell (Eds.), *Civic engagement and community service at research universities* (pp. 219–239). London: Palgrave Macmillan.

Karagianni, D., & Montgomery, A. (2018). Developing leadership skills among adolescents and young adults: A review of leadership programmes. *International Journal of Adolescence and Youth, 23*(1), 86–98.

Kivunja, C. (2015). Teaching students to learn and to work well with 21st century skills: Unpacking the career and life skills domain of the new learning paradigm. *International Journal of Higher Education*, *4*(1), 1–11.

Kolditz, T. (2010). *In extremis leadership: Leading as if your life depended on it* (Vol. 107). San Francisco, CA: John Wiley & Sons, Inc.

Kumar, V. (2018). Importance of leadership skills for students. Retrieved from http://www.klientsolutech.com/importance-of-leadership-skills-for-students

Ledward, B., & Hirata, D. (2011). *An overview of 21st century skills. Summary of 21st century skills for students and teachers.* Honolulu: Kamehameha Schools–Research & Evaluation. Retrieved from http://www.ksbe.edu/ assets/spi/pdfs/21st_Century_Skills_Brief.pdf

Luthans, F., & Avolio, B. Authentic leadership development. In K. Cameron, J. Dutton & R. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 241–258). San Francisco, CA: Berrett-Koehler Publishers, Inc.

Oades, L., Robinson, P., Green, S., & Spence, G. (2011). Towards a positive university. *The Journal of Positive Psychology, 6*(6), 432–439. dx.doi.org/10.1080/17439760.2011.634828

Pintrich, P., Smith, D., Garcia, T., & McKeachie, W. (1991). *A manual for the use of motivated strategies for learning questionnaire (MLSQ)* (No. 91-B, p. 004). Technical Report.

Portilla, X., Ballard, P., Adler, N., Boyce, W., & Obradović, J. (2014). An integrative view of school functioning: Transactions between self-regulation, school engagement, and teacher–child relationship quality. *Child Development, 85*(5), 1915–1931.

Roche, M., Haar, J., & Luthans, F. (2014). The role of mindfulness and psychological capital on the well-being of leaders. *Journal of Occupational Health Psychology, 19*(4), 476.

Roth, R., Suldo, S., & Ferron, J. (2017). Improving middle school students' subjective well-being: Efficacy of a multicomponent positive psychology intervention targeting small groups of youth. *School Psychology Review 46*(1), 21–41. dx.doi.org/10.17105/10.17105/SPR46-1.21-41

Rubie-Davies, C. (2010). Teacher expectations and perceptions of student attributes: Is there a relationship? *British Journal of Educational Psychology, 80*(1), 121–135.

Schunk, D., Meece, J., & Pintrich, P. (2014). *Motivation in education: Theory, research and applications* (4th ed.). Boston, MA: Pearson.

Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of educational research, 83*(3), 357–385.

van de Grift, W., Chun, S., Maulana, R., Lee, O., & Helms-Lorenz, M. (2017). Measuring teaching quality and student engagement in South Korea and The Netherlands. *School Effectiveness and School Improvement, 28*(3), 337-349.

Wang, M., & Degol, J. (2016). School climate: A review of the construct, measurement, and impact on student outcomes. *Educational Psychology Review, 28*(2), 315-352.

Waters, L., & White, M. (2015). Case study of a school wellbeing initiative: Using appreciative inquiry to support positive change. *International Journal of Wellbeing, 5*(1), 19-32. Retrieved from https://www.International journalofwellbeing.org/index.php/ijow/article/view/328/441

Wenzel, K. R. (1999). Social-motivational processes and interpersonal relationships: Implications for understanding motivation at school. *Journal of Educational Psychology*, *91*(1), 76-97.

Zorina, A., Yarullina, A., Akhmetova, L., Shaimardanova, M., Nikishina, S., & Garipova, A. (2018). Leadership in the university student environment: How to become a person-oriented leader. *International Journal of Instruction*, *11*(4), 271-286.