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Unveiling the Keys Factors Impacting Nursing Students' Success in Shanghai's Higher Vocational Schools

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Abstract

Purpose The study aimed to identify the primary factors affecting the academic performance of nursing students. **Research design, data, and methodology:** Focusing on the human capacity for self-directed learning and behavior, the research examined how school valuing, teaching and learning quality, interest in courses, and learning engagement influence academic achievement. The goals were to assess the current levels of these variables, design and implement Intervention Design Implementations (IDIs) to improve them, and measure the changes before and after the interventions. A sequential exploratory mixed-methods design was employed, integrating qualitative and quantitative approaches to develop a data collection instrument. The target population included nursing students from higher vocational education institutions in Shanghai, with a sample size of 378 students. **Results:** The results indicated that school valuing, teaching and learning, interest in courses, and learning engagement levels were generally low. Multiple regression analysis revealed that school valuing, teaching and learning, interest in courses, and learning engagement ($p<0.05$) were significant predictors of academic achievement. Based on these findings, a theoretical model was created and validated by experts, providing a basis for future interventions aimed at enhancing nursing students' self-regulated learning abilities. **Conclusions:** The results can inform the development of educational strategies and initiatives aimed at fostering these essential skills in students, thereby preparing them for future success in an increasingly competitive and innovative world.

Keywords: Academic Achievement, Nursing Student, Vocational College

JEL Classification Code: I23, J28, L2

1. Introduction

Since its rapid expansion in the late 1990s, higher vocational education has encountered significant employment challenges. Recent statistics reveal a troubling employment scenario for vocational graduates, with 5.16 million vocational college graduates in 2022—almost half of all college graduates—facing a job market crowded with junior college graduates (Liu et al., 2009). The primary factor influencing these graduates' employability is their core competitiveness, particularly their professional skills.

The focus on vocational students' core competitiveness suggests a potential problem: graduates may lack the strong professional skills that the current job market demands, exacerbating their employment difficulties. The swift development of higher vocational education has raised concerns about the quality of education and its ability to align with industry and economic needs.

The substantial number of vocational institutions (1,489 vocational colleges) and students places considerable pressure on the educational system to uphold standards, provide relevant training, and ensure that graduates are job-ready. The core competitiveness of vocational college students has been identified as a critical concern, implying that graduates may not possess the unique and marketable skills necessary to thrive in the job market, which affects their employability.

Addressing these employment challenges requires a thorough analysis of the factors influencing academic achievement among vocational students. Shanghai Urban

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Construction Vocational College (SUCC), recognized for its specialization in urban construction and management, offers a case study to explore these factors. This research will focus on nursing students at SUCC, utilizing survey data to identify the key determinants of academic performance within a vocational context. Understanding these determinants is essential for cultivating a workforce that meets societal and industrial demands and supports China's ongoing economic and social development.

2. Literature Review

2.1 Academic Achievement

Academic achievement refers to the level of competence a student attains in their academic pursuits, typically evaluated through assessments such as tests, final grades, cumulative GPA, and standardized test scores (Lindholm-Leary & Borsato, 2006). Broadly speaking, academic achievement encompasses the extent to which a student has reached their educational objectives, whether those goals involve acquiring knowledge, developing skills, or advancing to higher levels of education (Rivkin et al., 2005).

In formal educational settings, academic achievement is frequently gauged through structured assessments. For instance, Findley and Cooper (1983) described academic achievement as the score a student earns on an exam or standardized test that evaluates their knowledge or skills in a specific subject area.

Beyond traditional measures, academic achievement also includes the successful completion of courses, earning of credits, and obtaining degrees or certifications. Froiland et al. (2012) argued that academic achievement should not be limited to grades alone but should also encompass a student's comprehension and practical application of acquired knowledge. They highlighted the role of intrinsic motivation and active engagement in learning as key factors that can significantly enhance academic achievement (Steinmayr et al., 2014).

2.2 School Valuing

School valuing refers to the significance students place on education and their belief in the worth of school-related tasks and outcomes (Eccles & Wigfield, 2002). Among nursing and medical laboratory technology students at vocational colleges in Shanghai, school valuing significantly influences their academic success and dedication to their studies.

School valuing can be divided into two main aspects: intrinsic valuing and extrinsic valuing (Eccles & Wigfield, 2002). Intrinsic valuing reflects the internal appreciation students have for their education, driven by their interest, curiosity, or the satisfaction gained from the learning process itself (Deci & Ryan, 1985). This form of valuing is often associated with a deeper understanding, meaningful learning, and long-term retention of knowledge (Harackiewicz & Hulleman, 2009). Extrinsic valuing, in contrast, is motivated by external rewards associated with education, such as career opportunities, financial benefits, or societal recognition (Deci & Ryan, 2000). While extrinsic valuing can drive students in specific contexts, it may not always promote deep learning and can occasionally undermine intrinsic motivation (Lepper et al., 2005).

The importance students place on their education, known as school valuing, has been identified as a crucial factor influencing academic achievement (Korn et al., 2001). Wang and Eccles (2012) highlighted the critical role of school valuing in education, finding that students who highly value education are more likely to engage in their studies, leading to improved academic performance. This finding supports Eccles and Wigfield (2002) expectancy-value theory, which posits that the value students assign to a task plays a significant role in their motivation and engagement.

H1: School Valuing has a significant impact on academic achievement.

2.3 Teaching and Learning

Teaching and learning are core elements of the educational process, and understanding their definitions is essential when studying academic achievement.

Teaching, in its broadest context, is a process that facilitates learning by guiding, motivating, and empowering learners to acquire knowledge, skills, values, and attitudes. Effective teaching goes beyond the mere transmission of information; it involves creating an environment that promotes active student engagement in the learning process (Hattie, 2009).

Conversely, learning is the process through which individuals acquire or modify their existing knowledge, behaviors, skills, values, or preferences (Illeris, 2009). It encompasses the transformation of experiences into knowledge, skills, attitudes, values, emotions, beliefs, and perceptions (Skaalvik, 1983).

In the context of nursing education, the definitions of teaching and learning carry specific significance. Teaching in nursing focuses on creating an environment that fosters critical thinking, decision-making, and the application of theoretical knowledge to practical situations (Gaberson & Oermann, 2010). Learning in nursing education, on the other hand, involves the acquisition and application of knowledge and skills pertinent to nursing practice, including problem-solving, critical thinking, and the ability to provide patient care across diverse healthcare settings.

H2: Teaching and learning have a significant impact on academic achievement.

2.4 Interest in Course

Interest in a course is a crucial component of student engagement and academic success. It is typically defined as a psychological state of engagement or the level of attention that students devote to a specific course or subject (Schiefele, 1991).

Interest can be categorized into two types: individual and situational. Individual interest is a relatively stable trait that influences a student's long-term inclination towards a particular subject, while situational interest is a temporary, task-specific engagement that can be shaped by the learning environment (Koller et al., 2001).

In the context of nursing education, interest in a course refers to the extent to which students find their nursing courses engaging, stimulating, and aligned with their career aspirations. This interest encompasses not only the course content but also the teaching methods, the relevance of the learning materials, and the practical applicability of the knowledge and skills being acquired (Gaberson & Oermann, 2010).

H3: Interest in course has a significant impact on academic achievement.

2.5 Learning Engagement

Learning engagement is a complex concept that has been extensively studied in education due to its significant influence on student learning and academic achievement. It is generally defined as the extent to which students are actively involved, participating, and invested in their learning process (Northey et al., 2018).

Engagement is typically viewed as comprising three interconnected dimensions: behavioral, emotional, and cognitive. Behavioral engagement involves students' participation in learning activities, such as attending classes, completing assignments, and contributing to discussions. Emotional engagement relates to the feelings and attitudes students have toward their learning, including their interest, enjoyment, and sense of belonging in the educational environment. Cognitive engagement refers to the mental effort students invest in understanding and mastering educational content, which includes employing strategies for deep learning, self-regulation, and critical thinking (Estévez et al., 2021).

In the context of nursing education, learning engagement encompasses nursing students' active involvement in both theoretical coursework and clinical training, their emotional commitment to the learning process, and their cognitive dedication to mastering the knowledge and skills essential for nursing practice (Li et al., 2022)

H4: Learning engagement has a significant impact on academic achievement.

3. Research Methods and Materials

3.1 Research Framework

The researcher utilized three theoretical models: the Surbhi Godsay Lipkin-Moore (2020) model, the Thomas Anthony Costello (2011) model, and the Li et al. (2022) model. These frameworks collectively informed and supported the development of the conceptual framework illustrated in Figure 1.

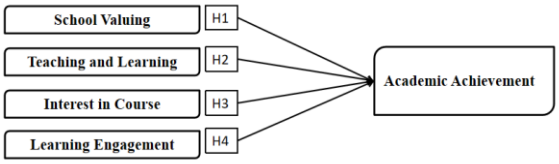

Figure 1: Conceptual Framework

H1: School valuing has a significant impact on academic achievement.

H2: Teaching and learning have a significant impact on academic achievement.

H3: Interest in course has a significant impact on academic achievement.

H4: Learning engagement has a significant impact on academic achievement.

3.2 Research Methodology

The researcher acts as an objective outsider, similar to an Organizational Development practitioner, ensuring that the research process and evaluation remain impartial, as recommended by Mertler and Charles.

For data analysis, the study employs the Statistical Package for the Social Sciences (SPSS), along with SPSS Amos for more advanced statistical needs.

Two scales are developed for measurement, with their content validity assessed by experts who rate each item on a scale from -1 to +1. A rating above 0.67 is deemed acceptable, while items rated below this threshold require re-evaluation. Items achieving a rating of 0.67 or higher are retained for the study, in accordance with the guidelines set by Carlson and da Silva. These scales are then distributed to

students online via Wenjuanxing, allowing them to complete the assessments in a distraction-free environment.

To ensure data reliability, Cronbach's alpha coefficient is calculated for the survey factors, aiming for a value greater than 0.70, which is the standard for acceptable reliability according to Nunnally and Bernstein. Additionally, Multiple Linear Regression is used to analyze the significance of the relationship between independent and dependent variables. Finally, a Paired t-test is conducted to compare the dependent variables before and after the intervention, assessing the effectiveness of the IDI.

3.3 Research Population, Sample Size, and Sampling Procedures

3.3.1 Research Population

The study population for this thesis comprises three-year nursing students, with a total of 550 students enrolled across 8 classes in the program. The researcher includes all 550 nursing students as the study sample, encompassing first-year, second-year, and third-year students. This selection guarantees the comprehensiveness and representativeness of the sample, providing a solid data foundation for the research.

3.3.2 Sample size

Hair et al. (2010) indicates that a sample size between 30 and 500 is generally sufficient for most research studies. During the preliminary diagnosis stage, a sample of 30 participants was utilized for the reliability test. According to Krejcie and Morgan's (1970) table, the minimum sample size required for this study was established at 365 nursing students. To meet this minimum requirement and enhance the sample's representativeness, the researchers implemented a two-stage sampling method. Initially, stratified random sampling was used to select eligible students from the three nursing program grades. Following this, random sampling was employed to distribute 550 questionnaires to the selected eligible students. In total, 378 responses were collected, resulting in a response rate of 68.7%.

For the Pre-Intervention Design Intervention (Pre-IDI) stage, 30 students were chosen as participants for the intervention implementation. These same 30 students will also act as respondents for the Post-Intervention Design Intervention (Post-IDI) stage, during which the same research methods used in the Pre-IDI stage will be applied.

3.3.3 Sampling Procedures

The researcher invited various participant groups through distinct sampling procedures, as detailed below:

Sampling 1: Pilot Survey and Pilot Test

An invitation was sent to 30 randomly selected students to participate in the pilot survey and pilot test. These students were asked to complete the survey questionnaire and provide valuable feedback on their experience.

Sampling 2: Pre-survey

A total of 550 students from different academic years were invited to participate in the pre-survey. The researcher distributed printed survey questionnaires and solicited their participation. Following careful evaluation, 378 valid responses were received.

Sampling 3: Sampling for IDI

The researcher randomly selected and invited 30 students to participate in the IDI phase of the study.

3.4 Research Instruments

3.4.1 Design of Questionnaire

Step 1: Identify questionnaire sources from three openly published articles (Alalwan et al., 2017; Raza et al., 2020).

Step 2: Adjust and present the survey questionnaires in the context of Chinese university students.

Step 3: Implement the Item-Objective Congruence (IOC) method.

3.4.2 Components of Questionnaire

The survey questionnaire items consisted of two parts:

Part 1: Basic Information Questions

This section included questions designed to gather basic information about the research population, such as gender, age, and other demographic details.

Part 2: Main Questionnaire

This part contained a total of 42 questions, divided into four dimensions: school valuing (4 questions), teaching and learning (4 questions), interest in course (17 questions), learning engagement (6 questions), and academic achievement (8 questions).

3.4.3 IOC Results

The researcher recruited five independent experts, including scholars and doctors, to perform the Index of Item-Objective Congruence (IOC) assessment. All five experts were Chinese professors. During the IOC evaluation, the experts employed a scoring system in which they assigned +1 for "Congruent," 0 for "Questionable," and -1 for "Incongruent" for each questionnaire item. In this study, all questionnaire items received scores above 0.67, indicating an acceptable level of congruence. Consequently, the researcher chose to retain all the questionnaire items for further analysis.

3.4.4 Pilot survey and Pilot test results

The researcher conducted a pilot survey with 30 randomly selected students, asking them to complete the survey questionnaire and provide feedback. Following this, the researcher implemented Cronbach’s Alpha to test

internal consistency reliability, with values required to be equal to or greater than 0.7 (Nunnally & Bernstein, 1994). The table below presents the confirmed results, demonstrating high reliability for each construct.

Table 1: Pilot Test Result

Variables	No. of Items	Sources	Cronbach 's Alpha	Strength of Association
School valuing (SV)	4	Lipkin-Moore (2020)	0.896	Good
Teaching and learning (TL)	4	Lipkin-Moore (2020)	0.964	Excellent
Interest in course (IC)	17	Costello (2011)	0.843	Good
Learning engagement (LE)	6	Konold et al. (2018)	0.904	Excellent
Academic achievement (AA)	8	Hong and Cho (2011)	0.955	Excellent

4. Results and Discussion

4.1 Results

4.1.1 Demographic Profile

The researcher presented the demographic profile of the entire research population (n=378), followed by the selected group of students (n=30) who participated in the IDI, as shown in Table 2.

Table 2: Demographic Profile

Entire Research Population (n=378)		Frequency	Percent
Gender	Male	84	22.22%
	Female	294	77.78%
Year	First Year	128	33.86%
	Second Year	185	48.94%
	Third Year	65	17.19%
Age	18-19	164	43.39%
	20-21	195	51.59%
	22-23	18	4.76%
	24 years and above	1	0.26%
Total		**378**	**100%**
IDI Participants (n=30)		**Frequency**	**Percent**
Gender	Male	6	20%
	Female	24	80%
	First Year	2	6.67%
Year	Second Year	19	63.33%
	Third Year	9	30%
Age	18-19	7	23.33%
	20-21	21	70%
	22-23	2	6.67%
	24 years and above	0	0%
Total		**30**	**100%**

4.1.2 Results of multiple linear regression

The researcher conducted a Multiple Linear Regression (MLR) analysis on the data from 378 survey questionnaires to assess support for each of the four research hypotheses, all of which pertained to the dependent variable of students' academic achievement.

To assess multicollinearity, a variance inflation factor (VIF) analysis was performed, revealing that multicollinearity was not a concern, as the VIF values remained below 5, an acceptable threshold (Hair et al., 1995).

The R-squared (R^2) value for the multiple linear regression model, which incorporated four independent variables, was found to be 0.833. This indicates that the model explains 83.3% of the variability in students' academic achievement, showcasing its capability to account for variance in this outcome.

Table 3: The multiple linear regression of five independent variables on academic achievement

Variables	Standardized Coefficients Beta value	t-value	p-value	VIF	R^2
School valuing (SV)	0.026	0.576	0.000**	4.504	.694
Teaching and learning (TL)	0.103	2.065	0.040*	3.520	
Interest in course (IC)	0.147	3.525	0.000**	3.902	
Learning engagement (LE)	0.679	16.248	0.000**	3.900	

Note: p-value <0.05*, p-value <0.001**

In summary, the results of the multiple linear regression analysis provided support for hypotheses H1, H2, H3, and H4. Based on these findings, the following hypotheses were formulated for the subsequent IDI phase:

H5: There is a significant mean difference in School Valuing between the Pre-IDI and Post-IDI stages.

H6: There is a significant mean difference in Teaching and Learning between the Pre-IDI and Post-IDI stages.

H7: There is a significant mean difference in Interest in Course between the Pre-IDI and Post-IDI stages.

H8: There is a significant mean difference in Learning Engagement between the Pre-IDI and Post-IDI stages.

H9: There is a significant mean difference in academic achievement between the Pre-IDI and Post-IDI stages.

4.2 IDI Intervention Stage

The IDI intervention plan, lasting 14 weeks, was created to enhance students' academic achievement. This plan was based on a mix of quantitative and qualitative data collected prior to the IDI implementation (pre-IDI stage). The researcher outlined the chronological sequence of the intervention activities, illustrated in Figure 2 of the study.

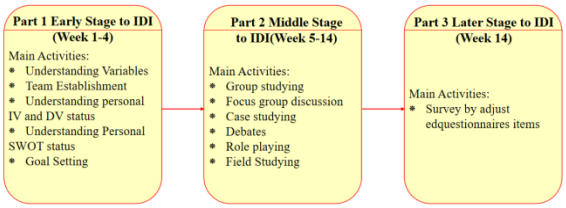

Figure 2: IDI Design Process

4.3 Results Comparison between Pre-IDI and Post-IDI

The researcher conducted a paired-sample t-test analysis on all four variables to determine whether there were any differences in students' academic achievement between the pre-IDI and post-IDI phases. The following tables illustrate the results of the paired-sample t-test analysis for the four variables:

Table 4: Paired-Sample T-Test Results

Variables	Mean	SD	SE	p-value
School valuing				
Pre-IDI	4.325	0.763	0.139	p<0.001
Post-IDI	4.550	0.551	0.101	
Teaching and learning				
Pre-IDI	4.308	0.646	0.188	p<0.001
Post-IDI	4.467	0.639	0.117	
Interest in course				
Pre-IDI	4.033	0.630	0.115	p<0.001
Post-IDI	4.149	0.570	0.104	
Learning engagement				
Pre-IDI	4.256	0.617	0.113	p<0.001
Post-IDI	4.444	0.612	0.112	
Academic achievement				
Pre-IDI	4.279	0.688	0.126	p<0.001
Post-IDI	4.513	0.620	0.113	

Table 4 presents the results of the paired-sample t-test analysis comparing the pre-IDI and post-IDI stages as follows:

School Valuing: There was a significant increase in school valuing between the post-IDI stage (M=4.550, SD=0.551, SE=0.101) and the pre-IDI stage (M=4.325, SD=0.763, SE=0.139), with $p<0.001$ and a mean difference of 0.225. Therefore, H5 states that there is a significant difference in School Valuing between the Pre-IDI and Post-IDI stages.

Teaching and Learning: A significant increase was observed in teaching and learning from the post-IDI stage (M=4.467, SD=0.639, SE=0.117) to the pre-IDI stage (M=4.308, SD=0.646, SE=0.188), with $p<0.001$ and a mean difference of 0.161. Thus, H6 posits that there is a significant difference in Teaching and Learning between the Pre-IDI and Post-IDI stages.

Interest in Course: The interest in course also showed a significant increase from the post-IDI stage (M=4.149, SD=0.570, SE=0.104) to the pre-IDI stage (M=4.033, SD=0.630, SE=0.115), with $p<0.001$ and a mean difference of 0.116. Consequently, H7 indicates that there is a significant difference in Interest in Course between the Pre-IDI and Post-IDI stages.

Learning Engagement: There was a significant increase in learning engagement between the post-IDI stage (M=4.444, SD=0.612, SE=0.112) and the pre-IDI stage (M=4.256, SD=0.617, SE=0.113), with $p<0.001$ and a mean difference of 0.178. Therefore, H8 suggests that there is a significant difference in Learning Engagement between the Pre-IDI and Post-IDI stages.

Based on the paired-sample t-test results presented above, the researcher reached the following conclusions: First, all four variables exhibited significant mean differences between the post-IDI and pre-IDI stages. Second, there was a significant increase in students' academic achievement between the pre-IDI and post-IDI phases.

5. Conclusions, Recommendations and Limitations

5.1 Conclusions & Discussions

The study examined the impact of four independent variables—school valuing, teaching and learning, interest in course, and learning engagement—on the dependent variable of academic achievement. A comprehensive research design, data collection, and methodology were employed to draw meaningful conclusions.

The research design utilized the Index of Item-Objective Congruence (IOC) for validity and Cronbach's Alpha in a pilot test to ensure the reliability of the measurement

instruments. This rigorous approach enhanced the credibility of the research. Data were gathered from 378 valid responses from students in higher vocational education in Shanghai and analyzed using multiple linear regression to verify the significant relationships between the independent and dependent variables. Additionally, a 14-week Intervention Design Implementation (IDI) was conducted with a selected group of 30 students. Post-IDI data were collected and compared with pre-IDI data using a paired-sample t-test.

The results indicated that specific factors significantly influenced students' academic achievement. Notably, school valuing, teaching and learning, interest in course, and learning engagement were found to have a significant effect on academic performance. This suggests that enhancing school valuing, teaching quality, course interest, and learning engagement can improve academic achievement among students.

The paired-sample t-test results revealed a significant difference in students' academic achievement between the post-IDI and pre-IDI stages, indicating that the 14-week IDI had a positive impact on academic performance.

This study makes a significant contribution by demonstrating how to enhance academic achievement among nursing students by promoting the value they place on education, the quality of teaching and learning, their interest in courses, and their commitment to learning within the context of higher vocational education in Shanghai, China. With robust research methods, detailed analysis, and actionable findings, the study provides valuable insights into improving nursing students' academic success. The results can inform the development of educational strategies and initiatives aimed at fostering these essential skills in students, thereby preparing them for future success in an increasingly competitive and innovative world.

5.2 Recommendations

The curriculum should be regularly reviewed and updated to ensure it remains engaging and relevant to students' future nursing careers. Incorporating real-world applications and case studies can enhance interest and engagement.

Active learning strategies, such as problem-based learning, simulations, and clinical practice, should be integrated into the curriculum to foster student engagement and practical understanding.

Professional development programs for educators should focus on creating engaging course content and delivering interactive lectures and activities. Faculty members should be trained to identify students' interests and motivations to customize the learning experience to meet individual needs whenever possible.

Academic support services, such as tutoring and mentoring programs, should be established or strengthened to promote engagement and address areas where students may face challenges. Workshops on study skills and time management should be offered to help students engage more effectively with their coursework.

Additionally, encouraging the formation of nursing clubs or interest groups will allow students to explore and engage with nursing topics beyond the formal curriculum. Opportunities for students to participate in nursing conferences, seminars, and workshops should also be facilitated.

5.3 Limitations for Future Research

This study concentrated on a specific population within higher vocational education in Shanghai, which may restrict the generalizability of the findings to other regions or types of nursing education. Future research should aim for a more diverse sample that encompasses various educational institutions, cultural backgrounds, and educational systems.

Experimental or quasi-experimental designs could be employed to evaluate the effectiveness of interventions aimed at enhancing interest in courses and learning engagement, thereby providing stronger evidence for causality. Additionally, the measures used to assess the constructs in this study should be re-evaluated for their validity and reliability within the context of higher vocational nursing education in Shanghai.

By addressing these limitations in future research, a more nuanced and comprehensive understanding of the factors influencing nursing students' academic achievement in higher vocational education can be developed, ultimately leading to more effective educational strategies and improved student outcomes.

References

Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2017). Factors Influencing Adoption of Mobile Banking by Jordanian Bank Customers: Extending UTAUT2 with Trust. *International Journal of Information Management, 37,* 99-110.

Costello, T. A. (2011). *Achievement goals, interest, study strategies, and academic achievement* (1st ed.). *ETD Collection for Fordham*.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior* (1st ed.). Plenum.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227-268.

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology, 53*(1), 109-132.

Estévez, I., Rodríguez-Llorente, C., Piñeiro, I., González-Suárez, R., & Valle, A. (2021). School engagement, academic achievement, and self-regulated learning. *Sustainability, 13*(6), 3011.

Findley, M. J., & Cooper, H. M. (1983). Locus of control and academic achievement: a literature review. *Journal of personality and social psychology, 44*(2), 419.

Froiland, J. M., Oros, E., Smith, L., & Hirchert, T. (2012). Intrinsic motivation to learn: The nexus between psychological health and academic success. *Contemporary School Psychology, 16*(1), 91-100.

Gaberson, K. B., & Oermann, M. H. (2010). *Clinical teaching strategies in nursing* (1st ed.). Springer Publishing Company.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate Data Analysis* (3rd ed.). Macmillan.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Pearson.

Harackiewicz, J., & Hulleman, C. (2009). The Importance of Interest: The Role of Achievement Goals and Task Values in Promoting the Development of Interest. *Social and Personality Psychology Compass, 4*(1), 42 - 52.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement* (1st ed.). Routledge.

Hong, I. B., & Cho, H. (2011). The Impact of Consumer Trust on Attitudinal Loyalty and Purchase Intentions in B2C e-Marketplaces: Intermediary Trust vs. Seller Trust. I*nternational Journal of Information Management, 31,* 469-479. http://dx.doi.org/10.1016/j.ijinfomgt.2011.02.001

Illeris, K. (2009). *A comprehensive understanding of human learning*. Routledge.

Koller, O., Baumert, J., & Schnabel, K. (2001). Does interest matter? The relationship between academic interest and achievement in mathematics. *Journal for Research in Mathematics Education, 32*(5), 448.

Konold, T., Cornell, D., Jia, Y., & Malone, M. (2018). School Climate, Student Engagement, and Academic Achievement: A Latent Variable, Multilevel Multi-Informant Examination. *AERA Open, 4*(4), 233285841881566.

Korn, S. L., Stagnaro-Green, A. L. E. X., & Rose, S. (2001). The dean's letter summary statement: valuing scholarship, leadership, and academic achievement. *Academic Medicine, 76*(10), S30-S32.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607-610.

Lepper, M. R., Corpus, J. H., & Iyengar, S. S. (2005). Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates. *Journal of Educational Psychology, 97*(2), 184.

Li, G., Li, Z., Wu, X., & Zhen, R. (2022). Relations between class competition and primary school students' academic achievement: Learning anxiety and learning engagement as mediators. *Frontiers in Psychology, 13*, 775213.

Lindholm-Leary, K., & Borsato, G. (2006). Academic achievement. *Educating English language learners: A synthesis of research evidence,* 176-222.

Lipkin-Moore, S. G. (2020). *The relationship between school climate, school valuing, and academic achievement among middle school students* [Doctoral dissertation]. University of Maryland, Baltimore County.

Liu, Q., Liu, Z., Zhang, X., Yang, L., Zhang, N., Pan, G., & Wei, J. (2009). Polymer photovoltaic cells based on solution-processable graphene and P3HT. *Advanced Functional Materials, 19*(6), 894-904.

Northey, G., Govind, R., Bucic, T., Chylinski, M., Dolan, R., & van Esch, P. (2018). The effect of "here and now" learning on student engagement and academic achievement. *British Journal of Educational Technology, 49*(2), 321-333.

Nunnally, J. C., & Bernstein, I. H. (1994). The Assessment of Reliability. *Psychometric Theory, 3,* 248-292.

Raza, S. A., Qamar, S., Rafi, S., & Javaid, S. T. (2020). Impact of Smart-phone Addiction on Students' Academic Achievement in Higher Education Institute of Pakistan. *Journal of Education & Social Sciences, 8*(1), 1-14.

Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement. *Econometrica, 73*(2), 417-458.

Schiefele, U. (1991). Interest, learning, and motivation. Educational psychologist, Brookhart, S. M. (1993). Teachers' grading practices: Meaning and values. *Journal of Educational Measurement, 30*(2), 123-142.

Skaalvik, E. M. (1983). Academic achievement, self-esteem and valuing of the school—some sex differences. *British Journal of Educational Psychology, 53*(3), 299-306.

Steinmayr, R., Meiner, A., Weideinger, A. F., & Wirthwein, L. (2014). *Academic achievement.* Oxford University Press.

Wang, M.-T., & Eccles, J. S. (2012). Adolescent behavioral, emotional, and cognitive engagement trajectories in school and their differential relations to educational success. *Journal of Research on Adolescence, 22*(1), 31-39. https://doi.org/10.1111/j.1532-7795.2011.00753.x