



ISSN: 2617-6548

URL: www.ijirss.com



Attitudinal model predictor of academic performance of pre-service teachers

 Czar Justine D. Navalta

Nueva Vizcaya State University, Philippines.

(Email: czadnavalta@nvsu.edu.ph)

Abstract

The purpose of the study is to create a model of academic performance in Professional Education subjects as influenced by the students' learning attitude-related variables. By utilizing a descriptive-correlational research design, this study determined the significant relationship between attitude and academic performance of the students, which were utilized in creating a mathematical model. With 154 respondents, it was found that the respondents had a positive attitude towards learning Professional Education Subjects and performed very satisfactorily, and their degree courses had an influence on their level of commitment and knowledge of the subject matter towards learning Professional Education Subjects. However, the model's predictability is relatively low. It can be concluded that while students are committed, knowledgeable, learn independently, and have a keen sense of management in learning Professional Education Subjects, the learning attitude variables have a low predictive power on their academic performance. The implications of the study recommend exploring other factors that could affect their academic performance to achieve better predictability models. Teachers must encourage students to perform better in their Professional Education Subjects by reinforcing a positive attitude towards learning.

Keywords: Academic performance, Attitude, Commitment, Knowledge, Teacher education, SDG 4.

DOI: 10.53894/ijirss.v8i3.7117

Funding: This study received no specific financial support.

History: Received: 21 March 2025 / Revised: 24 April 2025 / Accepted: 29 April 2025 / Published: 16 May 2025

Copyright: © 2025 by the author. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Competing Interests: The author declares that there are no conflicts of interests regarding the publication of this paper.

Transparency: The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

Publisher: Innovative Research Publishing

1. Introduction

Sustainable Development Goal 4 ensures a more inclusive and equitable quality education and promotes lifelong learning opportunities for all. One of the targets of this goal is to increase the supply of qualified teachers in developing countries [1]. Hence, Teacher Education Institutions (TEIs) continuously deliver quality education and training to their pre-service teachers to meet the professional standards set and established by their ministry of education, as preparing them requires specialist knowledge and skills that target the value of learner-centeredness, teacher identity, and service to the profession and community [2].

However, realizing the mission, vision, and goals of TEIs involves the attitude and behavior of pre-service teachers toward their profession since it can affect their performance and commitment to their work [3]. Attitude, as defined by

psychologists, is a learned tendency to evaluate things in a certain way that includes evaluations of people, issues, objects, or events that are often positive, negative, or may be uncertain at times. Attitude can also be explicit, where people are consciously aware of it and that influences one's behaviors and beliefs, and implicit, where people are not aware but still have an effect on their behaviors and beliefs [4]. A teacher, who serves as a second parent to the students, becomes a role model, nurtures the students, adds knowledge, and molds the minds and hearts of the students, has a significant role in transcending desirable attitudes in the students while learning, as it affects their job satisfaction as well as their teaching attitude Linn and Tint [5]. Mehdipour and Balaramulu [6] and Toker Gökçe [7] note that one of the biggest roles of education is to develop a desired attitude in learners, as this will translate into their future endeavors, building and strengthening relationships inside and outside the institution. As Andronache et al. [8] pointed out, if future teachers have a positive attitude towards their profession, they might more easily develop their future students' intrinsic motivation for learning, establish more efficient communication with them, and become more involved in the diversification and personalization of learning situations. Thus, Maliki [9] as cited by Ikitde and Ado [10] noted that individuals' attitudes toward their profession affect their performance and competence, as well as their achievement. Thus, this may lead to the assumption that how one perceives the subjects he is learning may have an effect on his performance academically and personally.

In this study, the researcher determined the attitude of the College of Teacher Education students at Nueva Vizcaya State University, Bayombong campus, to create an attitudinal model that could predict their academic performance through their profile variables and attitudes in learning Professional Education subjects. Students who were pursuing teaching as their degree were obliged to enroll in Professional Education subjects that were intended and specialized only for teacher education students. According to the policies, standards, and guidelines for Bachelor of Secondary Education (BSEd) stated in Commission on Higher Education Memorandum Order (CMO) No. 75 series of 2017, a Secondary Education student should credit 42 units of Professional Education Subjects that are divided into three (3) categories: (a) Foundation/Theories and Concepts that focus on the development of the child and the adolescent; it includes professional ethics, core values, awareness of professional rights, and the role of teachers in society as agents of change, (b) Pedagogical Content Knowledge that emphasizes the fundamental principles, development, processes, and practices in teaching, and (c) Experiential Learning, which allows an education student to apply the theories, concepts, and principles they have learned in an authentic and experiential way.

This led to the fact that these Professional Education Subjects were solely for education students and were reflected in the Philippine Professional Standards for Teachers (PPST), which developed a teacher into a holistic individual. The problem was how education students felt about Professional Education Subjects and how they perceived Professional Education as a subject. Is this subject embraceable and learnable on their part, or does it become a burden and not a learnable subject based on the way the teacher teaches?

2. Literature Review

2.1. Attitude and Learning

Attitude is an organization of beliefs, feelings, and behaviors that influence a person's point of view positively or negatively [11]. In line with education, attitude towards learning is recognized as a factor in academic achievement and performance. Hence, developing a positive attitude in a student helps him or her achieve his or her goals in life, making attitude formation one of the essential factors in the teaching and learning process [12, 13].

Students' perceptions and beliefs in learning a specific subject influence their attitude towards the subject. If a student perceives the subject positively and finds it applicable and useful, it enhances his or her achievement and academic performance [13, 14]. On the other hand, a negative perception of students toward learning a subject leads to a loss of interest in learning, not realizing the usefulness of a subject in their future lives [15, 16]. The profile characteristics such as sex, age, and skills are also relevant in demonstrating the attitude of learners towards learning a specific subject [17]. On the other hand, social factors, such as peers and parents, also influence the attitude of learners, while educational context factors such as teachers, learning situations – classrooms, and learning environments also affect their attitude towards learning the subject [18, 19].

2.2. Attitudinal Model

Attitudes have three interrelated qualities or components that vary in direction and degree or strength, which include: (a) emotional components, (b) cognitive components, and (c) behavioral components. These three interrelated qualities or components, which vary in direction and degree or strength, are similar to the ABC model of attitude, which suggests that attitude has three elements, namely (a) affect, which denotes the individual's feelings about an attitude object, (b) behavior, which denotes the individual's intention towards an attitude object, and (c) cognition, which denotes the beliefs an individual has about an attitude object [20]. There is also a model that Schiffman and Kanuk [21] as cited by Jain [22], which they called the Cognitive-Affective-Conative Model (CAC Model), which explains that attitude is constructed around beliefs, feelings, and behaviors. According to Wahyuni [23], the cognitive component refers to the thoughts and beliefs of an individual, which comprise intelligence quotient, skills, reasoning, knowledge, experience, and education, while the affective component is the emotional response of an individual, which comprises desires, motivations, attitudes, preferences, emotions, and values. The conative component focuses on how one acts on his thoughts and feelings, which comprises drive, necessity, innate force, instinct, mental energy, and talents.

2.3. *Teacher Education Students attitude towards Learning how to Teach*

The abilities and beliefs of pre-service teachers affect their attitude towards learning how they will teach a specific subject. These beliefs may or may not strengthen their pedagogical foundation as they translate the theories learned in their professional education subjects into practice [24]. Therefore, both intrinsic and extrinsic motivation in developing the attitude of pre-service teachers towards learning their professional education subjects is crucial in helping them build learning opportunities and a teaching career as they serve their community [25]. A study conducted Ikitde and Ado [10], Pancholi and Bharwad [26] and Ajayi [27] found that pre-service teachers exhibit a negative attitude towards teaching practice exercises when there is a lack of model teaching practice laboratories in institutions, and the motivation to teach, hence recommending a thorough review of teaching preparations, strategies, approaches, and techniques. Therefore, this suggests that if teachers use different motivational techniques, listen to students, and guide them during their spare time, it gives a positive attitude towards the pre-service teachers' experiences that they may carry into their future careers as educators [6, 28, 29].

2.4. *Attitude and Academic Performance*

Otegunrin [30] found out that attitude has a relationship with students' academic performance. Factors related to attitude that influence students' academic performance may include self-concept, motivation, readiness, emotion, and interest, which greatly affect student performance academically [31-33]. In addition, teachers' attitudes also affect students' academic performance according to Blazar and Kraft [34]. This suggests that teachers may have a positive or negative impact on the academic life of students [35-37].

2.5. *Research Questions*

This research sought to create a mathematical model based on the attitudes of the respondents that could predict their academic performance in learning Professional Education subjects.

Specifically, this study answered the following:

1. What is the demographic profile of the respondents in terms of:
 - a.) sex;
 - b.) age;
 - c.) degree courses?
2. What is the level of academic performance of the College of Teacher Education students in their Professional Education subjects?
3. What is the level of learning attitude-related variables of the College of Teacher Education students in terms of commitment, knowledge of the subject matter, independent learning, and management of learning?
4. Is there a significant difference in the level of academic performance when grouped according to the demographic profile?
5. Is there a significant difference in the level of learning attitude-related variables when grouped according to demographic profile?
6. Are there variables that predict the academic performance of students in the College of Teacher Education?

2.6. *Participants*

This research was conducted at the Nueva Vizcaya State University, Bayombong Campus to 4th year students of the College of Teacher Education since they already finished taking all their Professional Education subjects. In determining the sample size, Slovin's Formula was used where $n = \frac{N}{1+Ne^2}$ where n is the sample size, N is the population size and e is margin of error (5 %). Therefore, out of 256 4th year students, 154 respondents were considered in the study.

3. **Methodology**

3.1. *Research Design*

This study utilized a quantitative research method. Moreover, this study employed a descriptive-correlational research design. Descriptive research was used to determine the level of attitude and academic performance of the respondents in their Professional Education subjects, while correlational research was used to determine if there is a significant difference and relationship between the attitude and academic performance of the students, which is utilized to create a mathematical model.

3.2. *Instrument*

The questionnaire used in identifying the students' attitudes towards learning Professional Education subjects was based on the faculty evaluation form from the Philippine Association of State Colleges and Universities (PASUC) and used by the Nueva Vizcaya State University, Bayombong Campus, which was also the evaluation indicator given by the Accrediting Agency of Chartered Colleges and Universities of the Philippines (AACUP). The indicators found in the instrument would suffice for the expected attitudes of the students in learning.

3.3. *Data Collection*

In assessing the academic performance of the respondents, the researcher sought the permission of the 4th year students, along with the dean and their class advisers, to obtain their grades in their Professional Education subjects, which were verified in the Student Information and Accounting System (SIAS). Regarding the level of attitude towards learning the Professional Education subjects, the researcher distributed the survey questionnaire to the respondents.

3.4. Data Analysis

Descriptive statistics such as frequency, percentage distributions, and mean were computed to determine the demographic profile of the respondents, attitude, and academic performance in Professional Education subjects. Extent was used to measure the extent of the respondents' attitude. t-test and f-test using multiple comparisons were employed to determine existing significant differences among the respondents' attitudes when grouped according to degree courses. A multiple regression analysis was also conducted to determine if any of the variables predict the academic performance of the respondents based on their attitude towards learning Professional Education subjects. Furthermore, follow-up interviews with the respondents were conducted in order to triangulate the results regarding the level of their attitude in learning the Professional Education subjects.

4. Findings and Discussion

4.1. Demographic Profile of the Respondents

Table 1.
Frequency and percentage distribution of the demographic profile of the respondents.

Demographic Variables		Frequency	Percentage
Age (years)	19-21	123	79.87%
	22-24	23	14.94%
	25-27	3	1.95%
	28 and above	5	3.25%
Sex	Female	123	79.87%
	Male	31	20.13%
Degree Course	BSED	85	55.19%
	BEED	52	33.77%
	BPE	3	1.95%
	BTVTED	14	9.09%

Table 1 shows that more than three-fourths (79.87%) of the respondents belong to the 19-21 years age bracket. This implies that Teacher Education students are in their late adolescence. There were 123 respondents in this age bracket. The remaining one-fourth of the respondents were 22 years old and above. There were significantly more females (92 or 59.74%) than males, which implies that the Teaching Profession is female-dominated. Lastly, in terms of degree course, more than half (55.19%) of the respondents are taking up a Bachelor in Secondary Education. The least number of respondents based on degree course is 3 (1.95%). This is the number of respondents taking up a Bachelor in Physical Education.

4.2. Academic Performance of the Respondents

Table 2.
Academic performance of the respondents.

Academic Performance	BSED	QD	BEED	QD	BPE	QD	BTVTED	QD
Overall Mean	1.787	VS	1.958	VS	1.929	VS	2.011	VS

Note: Legend: 1.000 – 1.375 Excellent. 1.376 – 2.125 Very Satisfactory. 2.126 – 2.875 Satisfactory. 2.876 – 3.000 Fair

It can be seen from Table 2 that the respondents performed *very satisfactory* in their studies. All of the respondents from different fields of specialization have *very satisfactory* academic performance with BSED respondents having the highest academic performance ($\bar{x} = 1.787$) followed by the BPE students ($\bar{x} = 1.929$), then the BEED students ($\bar{x} = 1.958$), and the BTTE students ($\bar{x} = 2.011$).

4.3. Attitude of Respondents towards learning Professional Education Subjects

Table 3.
Level of attitude of the respondents towards learning Professional Education subjects.

Learning Attitude-related variables	Mean	Qualitative Description
Commitment	4.16	To a great extent
Knowledge of the Subject	4.03	To a great extent
Independent Learning	3.82	To a great extent
Management of Learning	3.92	To a great extent

Note: Legend: 4.20 – 5.00 To a very great extent. 3.40 – 4.19 To a great extent. 2.60 – 3.39 To a moderate extent. 1.80 – 2.59 To some extent. 1.00 – 1.79 To a little extent.

Based on the respondents' perceptions of taking Professional Education courses ($\bar{x}=4.16$), they were motivated to commit themselves to learning the subject due to its relevance in their future teaching. This can be seen in the response of Jev, a 21-year-old Bachelor of Secondary Education student, "Yes, because these are the subjects that serve as a guide to me as a teacher on things I need to do, what should be done in situations inside and outside of the teaching and learning environment, and it molds me to be a better version of my teachers." According to Schnitzler, et al. [38], when students are excellently

committed to learning, they actively participate in the lesson and are fully engaged at all times, resulting in good performance in school. Also, the respondents generally acquired knowledge in the professional subjects and applied it in their lives to a “great extent” ($x=4.03$). They believe that the knowledge they have learned from the Professional Education Subjects is substantive in their development as future teachers. This can be seen in the response of Quesy, a 21-year-old student taking Bachelor of Elementary Education, “Yes, because it really provides very important information and it will truly train a student to be a great teacher someday.” According to Diaz [39], students attend schools with their own prior knowledge, conceptual understanding, skills, and beliefs. When the teacher presents them with problems or new information, their prior knowledge and experiences influence and enhance their thinking that they may apply in the future. The respondents possess discipline in studying and understanding their lessons in their Professional Education Subjects ($x=3.82$). However, some of them pointed out the importance of having a teacher to teach them rather than being given modules and studying on their own. On the other hand, many were eager to study even without a teacher since they believed that this value of independence would hone them to be better teachers in the future. This can be seen in the response of Joy, a 23-year-old Bachelor of Elementary Education student, “No, it is more engaging if there is involvement from the teacher; there may be details and information that we don’t know, so there must be a teacher who acts as a medium of teaching and learning.” This is in line with the study of Schnitzler et al. [38] about independent learning and the benefits for students, which increased the motivation and confidence of the students and improved their academic performance, but they still needed the supervision of the teacher. In terms of management of learning attitude, the respondents were observed to have a keen sense of management in learning their subjects ($x=3.92$). Some of them resort to using sticky notes to remind them of what to do. Others have mental organizers to govern their tasks for the day. The respondents pointed out that time management was important, as can be seen in the response of Great, a 26-year-old Bachelor of Secondary Education student, “I always use reminders (sticky notes) and I have a list of my plans for doing my activities, reviewing, and making projects.” This is also echoed by Harry, a 22-year-old Bachelor of Elementary Education student, “through multi-tasking and time management.” This is in line with Wolters and Brady [40] study about the impact of time management on students’ academic achievements, which shows that good time management greatly contributes to achieving high performance as well as in learning. In addition, Castro-Alonso et al. [41] found that using instructional materials improved retention and influenced academic achievements as well as enhancing good understanding of the subject matter.

4.4. Comparison on the Level of Academic Performance of the Respondents When Grouped According to Demographic Profile

Table 4.

Difference on the level of academic performance of the respondents when grouped according to their demographic variables.

Demographic Profile Variables	Level of Academic Performance	
	F	Significance
Age	0.562	0.843
Sex	1.047	0.297
Degree Courses	6.961**	0.000

Note: ** Significant at 0.01 level of significance.

It can be seen that there is no significant difference in the level of academic performance of the respondents when grouped according to their age and sex. This indicates that regardless of age and sex, the respondents are likely to have equal academic performances. On the other hand, there is a significant difference in the level of academic performance of the respondents when grouped according to degree courses; this implies that students in each degree course perform better academically than the others. Furthermore, a post-hoc test revealed that BSED respondents academically performed better compared to the BEED and BTTE respondents, but there is no significant difference between the BSED and BEED respondents. It can be deduced that the BSED respondents were better academically than the other respondents, which may be due to their commitment to learning the Professional Education Subjects.

4.5. Comparison on the Level of Attitude in Learning Professional Education when grouped according to Demographic Profile

Table 5.

Difference on the level of attitude in learning professional education when grouped according to demographic variables.

Attitude	Demographic Profile Variables					
	Age		Sex		Degree Course	
	F	Sig	t	Sig	F	Sig
Commitment	1.018	0.431	0.576	0.566	7.712**	0.000
Knowledge of Subject	1.774	0.070	0.934	0.352	3.093*	0.029
Independent Learning	1.355	0.207	1.094	0.276	1.379	0.251
Management of Learning	0.552	0.851	0.213	0.832	1.276	0.285

Note: *Significant at 0.05 level of significance

** Significant at 0.01 level of significance.

Table 5 shows that there is no significant difference in the level of attitude of the respondents in learning professional education subjects when grouped according to age and sex. This indicates that regardless of the age and sex of the respondents, their level of attitude towards learning professional education subjects is most likely to be equal. However, there is an assumed effect on their attitude when they are grouped according to degree courses, particularly regarding their commitment and knowledge of the subject. A multiple comparison of the degree courses of the respondents under commitment and knowledge of the subject revealed that when they are grouped according to their degree courses, particularly regarding their commitment and knowledge of the subject, BSED respondents and BEED respondents are significantly more committed to learning their Professional Education Subjects compared to the BTTE respondents, while there is no significant relationship between BPE respondents when compared to BTTE respondents. On the other hand, the BEED respondents are significantly more knowledgeable about the Professional Education Subjects than the BTTE respondents, which infers that most BEED students pass the licensure examination for teachers. According to Filgona et al. [42], being committed to learning is an important factor that motivates a student and also influences the learning process of the student. Also, according to Peerzada and Jabeen [43], having great knowledge in a subject matter affects students' understanding as well as improves students' learning outcomes.

4.6. Predictors of the Student's Academic Performance

Table 6. Model of Academic Performance.

Model	Coefficients				
	Unstandardized Coefficients		Standard Coefficients	T	Sig
	B	Std. Error	Beta		
(Constant)	1.771	0.310		5.717*	0.000
Age	-0.002	0.11	-0.012	-0.149	0.882
Sex	-0.028	0.052	-0.044	-0.548	0.584
Degree Course	0.090	0.024	0.312	3.762*	0.000
Commitment	-0.001	0.045	-0.002	-0.022	0.982
Knowledge of the Subject	0.016	0.061	0.032	0.264	0.792
Independent Learning	-0.030	0.056	-0.071	-0.544	0.587
Management of Learning	0.022	0.045	0.056	0.503	0.616

Note: a. Dependent Variable: Academic Performance
 b. R = 0.055
 c. R square = 0.098

Table 6 displays the model that could possibly predict the academic performance of the respondents, along with their attitudes towards learning their professional education subjects and demographic variables as predictors, is as follows:

$$y = 1.771 - 0.028x_1 - 0.002x_2 + 0.090x_3 - 0.001x_4 + 0.016x_5 - 0.030x_6 + 0.022x_7$$

where x_1 = sex

x_2 = age

x_3 = degree course

x_4 = commitment

x_5 = knowledge about the subject

x_6 = independent learning

x_7 = management of learning

This model has R = 0.055. This means that the model could only predict up to 5.50% accuracy in the academic performance of the respondents. Moreover, there is only a 0.98% chance that the attitude and demographic profile variables could actually predict the actual academic performance of a student based on the computed R square. In addition, only the degree course of the respondents could significantly predict the academic performance of the respondents.

5. Implications

This study sought to create an attitudinal mathematical model that could predict pre-service teachers' academic performance in their professional education subjects. The respondents have a very satisfactory academic performance in their professional education subjects, and they exhibit a great level of engagement in learning the subjects. Moreover, there is a significant difference in the attitudes of the respondents based on their degree courses, as well as their commitment and knowledge in learning the Professional Education subjects. These findings may imply that the nature of the respondents' degree courses influences their commitment and knowledge to understand and learn the subjects, depending on the underlying factors that affect how they learn the Professional Education subjects. Hence, instructors and professors of teacher education institutions must continue to deliver quality education while maintaining a positive attitude in teaching the subjects, as they prepare these pre-service teachers to become successful and committed educators in their future school work.

Moreover, the model that could possibly predict the academic performance of the respondents with their attitudes towards learning their professional education subjects and demographic variables could only predict up to 5.50% accuracy in the academic performance of the respondents. Therefore, this implies that attitude alone cannot predict the academic performance

of Teacher Education students; thus, it needs to include other variables to accurately predict a student's academic performance.

6. Conclusion

Based on the findings, it can be concluded that the respondents were greatly committed, knowledgeable, learned independently, and had a keen sense of management in learning Professional Education Subjects; therefore, they maintained a very satisfactory academic performance. The degree course of the respondents has an effect on their academic performance and attitude towards learning Professional Education subjects. Additionally, the model of the academic performance of the respondents based on their attitude towards learning is relatively low in its predictability. Therefore, future researchers must include other factors that could actually affect academic performance in professional education subjects to achieve better predictability models. One may include time management, as this was pointed out by the respondents, as well as the effect of self-learning through modules only. Teachers must encourage the BPE and BTTE students to perform better in their Professional Education Subjects by enforcing a positive attitude towards learning.

References

- [1] THE 17 GOALS, "Sustainable development," Retrieved: <https://sdgs.un.org/goals>, n.d.
- [2] L. K. Ming and T. E. Guan, "Preparing teachers for the 21st century," *AsTEN Journal of Teacher Education*, vol. 1, no. 1, 2016. <https://doi.org/10.56278/asten.v1i1.146>
- [3] W. W. W. Tun and N. N. Nyunt, "Impact of teacher training programs on prospective teachers' professional attitude," *AsTEN Journal of Teacher Education*, vol. 1, no. 2, 2016. <https://doi.org/10.56278/asten.v1i2.298>
- [4] K. C. MSED, "The components of attitude," verywell Mind," Retrieved: <https://www.verywellmind.com/attitudes-how-they-form-change-shape-behavior-2795897>, 2024.
- [5] M. W. Linn and N. M. Tint, "The relationship between secondary school teachers' job satisfaction and their attitude towards teaching profession," *AsTEN Journal of Teacher Education*, vol. 5, no. 1, 2021. <https://doi.org/10.56278/asten.v5i1.1768>
- [6] Y. Mehdipour and D. Balaramulu, "The influence of teacher's behavior on the student's self-regulation," *dalam IOSR Journal of Research & Method in Education*, vol. 1, no. 6, pp. 65-71, 2013.
- [7] A. Toker Gökçe, "Core values in education from the perspective of future educators," *SAGE Open*, vol. 11, no. 2, p. 21582440211014485, 2021. <https://doi.org/10.1177/21582440211014485>
- [8] D. Andronache, M. Bocoş, V. Bocoş, and C. Macri, "Attitude towards teaching profession," *Procedia-Social and Behavioral Sciences*, vol. 142, pp. 628-632, 2014. <https://doi.org/10.1016/j.sbspro.2014.07.677>
- [9] A. E. Maliki, "Attitude of teachers in Yona local government area bayelsa state nigerian, towards the teaching profession: Counseling implications," *International Journal of Research in Social Science*, 2013.
- [10] G. A. Ikitde and I. B. Ado, "Attitude of students towards teaching practice exercise in Nigerian University: A case study of University of Uyo, Uyo," *Journal of Education and Practice*, pp. 69-74, 2015.
- [11] R. O. Mensah, A. Kwegyiriba, and A. Frimpong, "Teachers' attitudes towards the teaching of social studies in prestea huni-valley municipality: taking stance from the structural functionalist theory of education," *Technium Soc. Sci. J*, vol. 31, p. 714, 2022. <https://doi.org/10.47577/tssj.v31i1.6419>
- [12] S. K. Das, U. K. Hadler, B. Mishra, and D. Debnath, " Study on relationship between attitude towards education and academic achievement in secondary level minority students," *Indian Streams Research Journal*, vol. 4, no. 10, 2014.
- [13] A. C. Langat, "Student's attitudes and their effects on learning and achievements in mathematics: a case study of public secondary schools in Kiambu country in Kenya," Retrieved: <https://ir-library.ku.ac.ke/>, 2014.
- [14] M. D. Mato and E. De La Torre, "Assessment of attitudes toward mathematics and academic achievement," *PNA*, vol. 5, no. 1, pp. 25-36, 2010. <https://doi.org/10.30827/pna.v5i1.6160>
- [15] J. Musengimana, E. Kampire, and P. Ntawiha, "Factors affecting secondary schools students' attitudes toward learning chemistry: A review of literature," *EURASIA Journal of Mathematics, Science and Technology Education*, vol. 17, no. 1, 2021. <https://doi.org/10.29333/ejmste/9379>
- [16] M. Nicolaidou and G. Philippou, "Attitudes towards mathematics, self-efficacy and achievement in problem solving, Researchgate," Retrieved: <https://www.researchgate.net/publication/238015318>, 2004.
- [17] R. Peytcheva-Forsyth, B. Yovkova, and L. Aleksieva, "Factors affecting students' attitudes towards online learning - The case of Sofia University," in *AIP Conference Proceedings*, vol. 2048, p. 020025, Jan. 2018. <https://doi.org/10.1063/1.5082043>, 2018.
- [18] A. S. Getie, "Factors affecting the attitudes of students towards learning English as a foreign language," *Cogent Education*, vol. 7, no. 1, p. 1738184, 2020. <https://doi.org/10.1080/2331186x.2020.1738184>
- [19] G. Mathur, N. Nathani, A. S. Chauhan, S. V. Kushwah, and M. A. Quttainah, "Students' satisfaction and learning: Assessment of teaching-learning process in knowledge organization," *Indian Journal of Information Sources and Services*, vol. 14, no. 1, pp. 1-8, 2024. <https://doi.org/10.51983/ijiss-2024.14.1.3798>
- [20] G. Maio and G. Haddock, "The psychology of attitudes and attitude change," 2010. <https://doi.org/10.4135/9781446214299>
- [21] L. G. Schiffman and L. L. Kanuk, *Consumer behavior*. Pearson Prentice Hall. https://books.google.com.ph/books/about/Consumer_Behavior.html?id=vTRPngEACAAJ&redir_esc=y, 2007.
- [22] V. Jain, "3D model of attitude," *International journal of advanced research in management and social sciences*, vol. 3, no. 3, pp. 1-12, 2014.
- [23] S. Wahyuni, "CAC model to evaluate teachers' attitudes towards technology use in their EFL classrooms," *Language Circle: Journal of Language and Literature*, vol. 13, no. 1, 2018. <https://doi.org/10.15294/lc.v13i1.16659>
- [24] P. Scherer and J. Bertram, "Professionalisation for inclusive mathematics—teacher education programs and changes in pre-service teachers' beliefs and self-efficacy," *ZDM—Mathematics Education*, vol. 56, no. 3, pp. 447-459, 2024. <https://doi.org/10.1007/s11858-024-01580-0>
- [25] F. B. Pekmezci and B. D. Ertaş, "Pre-service teachers in Türkiye in the framework of attitude towards the teaching profession, school belonging, and motivation," *Teaching and Teacher Education*, vol. 142, p. 104514, 2024. <https://doi.org/10.1016/j.tate.2024.104514>

- [26] A. Pancholi and A. B. J. Bharwad, "Student-teachers' attitude towards teaching profession," *International Journal of Research in Humanities and Social Sciences*, vol. 3, no. 8, pp. 40-43, 2015.
- [27] L. Ajayi, "Preservice teachers' knowledge, attitudes, and perception of their preparation to teach multiliteracies/multimodality," *The Teacher Educator*, vol. 46, no. 1, pp. 6-31, 2010. <https://doi.org/10.1080/08878730.2010.488279>
- [28] H. Kahveci, "The positive and negative effects of teacher attitudes and behaviors on student progress," *Journal of Pedagogical Research*, vol. 7, no. 1, pp. 290-306, 2023. <https://doi.org/10.33902/jpr.202319128>
- [29] T. G. Roberts, J. F. Harlin, and G. E. Briers, "Peer modeling and teaching efficacy: The influence of two student teachers at the same time," *Journal of Agricultural Education*, vol. 49, no. 2, pp. 13-26, 2008. <https://doi.org/10.5032/jae.2008.02013>
- [30] O. A. Otegunrin, "Students' attitude and academic performance in agricultural Science: a case study of public secondary schools in Ibadan North Local Government area of Oyo State.," Researchgate," Retrieved: https://www.researchgate.net/publication/318418827_Students%27, 2014.
- [31] C. N. Calabar, "Socio-cultural factors affecting the teaching and learning of social studies in Nigeria," *Journal of Education and practice*, vol. 5, no. 24, pp. 153-158, 2014.
- [32] Y. Wei, Y. Shi, J. MacLeod, and H. H. Yang, "Exploring the factors that influence college students' academic self-efficacy in blended learning: A study from the personal, interpersonal, and environmental perspectives," *Sage Open*, vol. 12, no. 2, p. 21582440221104815, 2022. <https://doi.org/10.1177/21582440221104815>
- [33] T. Honicke and J. Broadbent, "The influence of academic self-efficacy on academic performance: A systematic review," *Educational research review*, vol. 17, pp. 63-84, 2016. <https://doi.org/10.1016/j.edurev.2015.11.002>
- [34] D. Blazar and M. A. Kraft, "Teacher and teaching effects on students' attitudes and behaviors," *Educational evaluation and policy analysis*, vol. 39, no. 1, pp. 146-170, 2017. <https://doi.org/10.3102/0162373716670260>
- [35] E. N. Veety, J. E. Lamberth, and E. L. Baldwin, "Impact of authentic, mentored research experiences for teachers on pedagogy (fundamental)," in *2019 ASEE Annual Conference & Exposition*. <https://doi.org/10.18260/1-2--32923>, 2019.
- [36] O. M. Ventista and C. Brown, "Teachers' professional learning and its impact on students' learning outcomes: Findings from a systematic review," *Social Sciences & Humanities Open*, vol. 8, no. 1, p. 100565, 2023. <https://doi.org/10.1016/j.ssaho.2023.100565>
- [37] P. Hudson, M. Usak, J. Fančovičová, M. Erdoğan, and P. Prokop, "Preservice teachers' memories of their secondary science education experiences," *Journal of Science Education and Technology*, vol. 19, pp. 546-552, 2010. <https://doi.org/10.1007/s10956-010-9221-z>
- [38] K. Schnitzler, D. Holzberger, and T. Seidel, "All better than being disengaged: Student engagement patterns and their relations to academic self-concept and achievement," *European Journal of Psychology of Education*, vol. 36, no. 3, pp. 627-652, 2021. <https://doi.org/10.1007/s10212-020-00500-6>
- [39] K. Diaz, "Prior knowledge: Its role in learning," *University of the Philippines Los Baños. DOI*, vol. 10, 2017. <https://doi.org/10.13140/RG.2.2.26816.69125>
- [40] C. A. Wolters and A. C. Brady, "College students' time management: A self-regulated learning perspective," *Educational Psychology Review*, vol. 33, no. 4, pp. 1319-1351, 2021. <https://doi.org/10.1007/s10648-020-09519-z>
- [41] J. C. Castro-Alonso, B. B. de Koning, L. Fiorella, and F. Paas, "Five strategies for optimizing instructional materials: Instructor- and learner-managed cognitive load," *Educational Psychology Review*, vol. 33, no. 4, pp. 1379-1407, 2021. <https://doi.org/10.1007/s10648-021-09606-9>
- [42] J. Filgona, J. Sakiyo, D. Gwany, and A. Okoronka, "Motivation in learning," *Asian Journal of Education and social studies*, vol. 10, no. 4, pp. 16-37, 2020. <https://doi.org/10.9734/ajess/2020/v10i430273>
- [43] S. M. Peerzada and M. Jabeen, "Impact of teachers' subject matter knowledge and behaviour on students' performance," *Journal of Education & Social Sciences*, vol. 2, no. 2, pp. 154-162, 2014.