The interaction between teachers' efficacy and students' attitudes toward effective learning in state universities and colleges of the Philippines

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ABSTRACT

The role of classroom teachers significantly influences student learning and is essential for the success or failure of an educational system. This study assessed how teacher characteristics, self-confidence in teaching, and student attitudes toward learning relate to each other in State Universities and Colleges (SUCs) in Region 02. Teacher effectiveness is seen as a crucial element in education that can positively affect student academic achievement. The research included 348 faculty members and 646 students from four universities, collecting data through a modified questionnaire via online and face-to-face surveys. It found notable differences in how faculty members viewed their own teaching confidence based on their characteristics, which included their abilities in teaching, motivation, managing the classroom, handling behavior, teaching methods, and motivational techniques. The study also noted significant variations in student attitudes towards learning, classified by their learning nature, openness, expectations, and anxiety about learning. It was observed that teaching methods that highlight understanding rather than memorization directly link to positive student attitudes toward learning, suggesting that learning is not just about innate ability. This indicates a need for teachers to enhance their teaching methods using various approaches and platforms.

1. Introduction

Education is a social institution where children learn basic academic knowledge, skills, and cultural norms. The education system continues to undergo reforms as the demand for increased accountability grows. To achieve this, improvements in leadership, teaching, culture, resources, teaching methods, and community involvement are necessary to enhance school practices and student outcomes.

The performance of teachers is the most crucial factor in student achievement. The role of classroom teachers greatly influences students' learning processes. Teachers are essential to the success of the education system because they implement educational policies. With the expansion of education globally, the need for effective teachers at all levels has increased. State Universities and Colleges (SUCs) in Region 02, as state-funded higher education institutions, aim to be recognized as centers of excellence and support research on institutional evaluation. The quality of teachers and their teaching directly influences the type of students a university produces.

The more proficient the teachers, the more effective the educational system. Effective teachers positively impact student performance. Teacher competency is linked to self-efficacy (belief in one's abilities), and a lack of self-efficacy can lead to psychological issues such as low confidence and self-esteem (Alfano and Guarino, 2023).

The effectiveness of teachers is defined as "the degree to which the teacher believes that he or she has the potential to influence student performance" (Luo and Li, 2024) or as "teachers' belief that they can impact how well students learn, especially those who may be difficult or unmotivated" (Sanusi et al., 2024). This compelling idea, that teachers' perceptions of their abilities matter, has consistently shown positive results in numerous studies. However, it has also faced challenges and complexities over time. Teacher efficacy remains a crucial aspect of overall teacher effectiveness (An and Tao, 2024). Kuhn (2024) noted that, over the past 25 years, persuasive data have accrued regarding the positive association teacher efficacy

has on students' motivation and achievement. Teacher efficacy is defined as "teachers' beliefs in their abilities to organize and execute courses of action necessary to bring about desired results" (Takunyaci and Takunyaci, 2014), and strong associations can be found between teacher efficacy, a deeper desire to teach, and a greater likelihood that teachers will not leave the profession.

A teacher's belief in their own efficacy is often specific to certain areas, with self-efficacy being the most crucial. Teacher effectiveness is one of the most important factors in education, significantly impacting student academic achievement. These beliefs influence how well knowledge and skills are taught and learned. Teacher self-efficacy is a core component of social cognitive theory, and several factors affect students' attitudes toward learning, including the teacher, teaching methods, educational environment, peer group, and parents (Soeharto et al., 2024). Teachers who maintain control over their emotions and do not show disappointment in front of students tend to achieve higher levels of success. Teachers with high self-efficacy are more open to new methods and techniques.

Student attitudes toward learning define their ability and willingness to learn, impacting various aspects of their lives, including education. Students with negative attitudes are unlikely to pursue education beyond what is required. Therefore, it is crucial to change these negative attitudes by identifying the factors that drive them and using this information to effect change. As educators, we are committed to understanding our students' attitudes toward learning. Whether positive or negative, these attitudes can influence their lifelong approach to learning. Negative attitudes can affect not only the amount of education students seek but also their desire for it. By understanding these negative attitudes, we can help foster a positive attitude, increasing their desire to learn, making them more receptive and participative in the learning process, and ultimately leading to greater satisfaction from learning.

The main goal of the Philippine education reform, under Republic Act 10533 or the Enhanced Basic Education Act of 2013, is to improve the educational qualifications of Philippine graduates by providing programs that meet international standards. This reform primarily focuses on basic education, especially by adding two more years of secondary education, but it also impacts higher education. Changes in higher education include updates in the accreditation process, new classifications, the adoption of outcome-based education (OBE), and the re-standardization of curricular programs.

This study examines the teaching-learning environment in anticipation of these changes, focusing on teachers' efficacy and students' attitudes toward learning, which contribute to student success. Current discussions on teacher efficacy and students' attitudes increasingly consider non-intellectual factors that affect performance. This study is a quantitative analysis of the interaction between teachers' self-efficacy and students' attitudes toward learning in State Universities and Colleges in the Philippines.

2. Methods

2.1. Research design

The study is a quantitative descriptive-correlational study. Its purpose was to determine the interaction of teacher profile, teacher self-efficacy, student attitude towards learning, and academic performance in State Universities and Colleges (SUCs) in Region 02.

2.2. Sampling and participants

The study was conducted in four State Universities and Colleges in Region 02: Cagayan State University (CSU), Isabela State University (ISU), Nueva Vizcaya State University (NVSU), and Quirino State University (QSU). The number of respondents was determined to be at a 99% confidence level and a 5% margin of error (Hernandez et al., 2019). The sample sizes were proportionally allocated among the universities. Social research often uses confidence levels of 95% or 99%, which provide a maximum error margin for interval estimation of a parameter.

There were 348 respondents in total. The majority came from ISU-Echague Campus with 112 respondents (32.18%), followed by NVSU-Bayombong Campus with 94 respondents (27.01%). CSU-Andrews Campus had 88 respondents (25.29%), and QSU-Diffun Campus had 54 respondents (15.52%).

2.3. Research instrument and data gathering procedures

To achieve the objectives and address the research questions, the instrument included the following components:

- Teachers' profile: Information about age, gender, civil status, highest educational attainment, and years of service.
- Students' profile: Information about age, gender, number of siblings, language spoken at home, monthly family income, internet access, and availability of ICT tools at home (Hernandez, 2023).
- Teachers' sense of efficacy scale.
- Attitude towards learning scale.

2.3.1. Teachers' sense of efficacy scale

The researcher utilized the Teacher Sense of Efficacy Scale (TSES), revised by Zee et al. (2024), from the instrument by Raymond and Gabriel (2023). The revised scale showed good internal consistency reliability. Factor analysis indicated that

specific teacher efficacy beliefs could be combined into one general factor. The questionnaire had four scales:

- Teacher's self-efficacy with three subscales: efficacy for instruction, efficacy for motivation, and efficacy for classroom management, each with 4 items.
- Behavior management strategies with 7 items.
- Instructional strategies with 7 items.
- Motivational strategies with 4 items.

2.3.2. Attitude towards learning scale

This questionnaire was based on Kara's (2009) Likert scale for attitudes toward learning, containing 22 items divided into four sub-sections:

- Nature of learning: Items 1, 7, 4
- Openness to learning: Items 9, 15, 17, 19, 21, 22
- Expectations from learning: Items 3, 6, 10, 11, 12, 14, 16, 18
- Anxiety about learning: Items 2, 5, 8, 13, 20

The responses were recoded and interpreted using a 1 to 5 scale indicating different levels of teachers' efficacy and students' attitudes towards learning:

- 5 (4.49 – 5.00): Teachers feel effective 'Most of the time' and students 'Agree.'
- 4 (3.50 – 4.49): Teachers feel effective 'Often' and students 'Partly agree'.
- 3 (2.50 – 3.49): Teachers feel effective 'Sometimes,' and students have 'No opinion.'
- 2 (1.50 – 2.49): Teachers feel effective 'Seldom' and students 'Partly disagree.'
- 1 (1.00 – 1.49): Teachers 'Never' feel effective, and students 'Totally disagree.'

This scale helps understand the frequency of teachers' perceived efficacy and students' positive or negative attitudes towards learning.

2.3.3. Statistical treatment of data

The data collected were classified, tallied, tabulated, and analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics such as frequency, percentage, and mean were used to describe the data. The Mann-Whitney U Test and Kruskal-Wallis H-test were used to test differences, and Kendall's tau-b was used to analyze relationships among the study variables.

3. Results and discussions

3.1. Profile of respondents

Table 1 presents the profile of teachers in State Universities and Colleges (SUCs) in Region 02, detailing their age, gender, civil status, highest educational attainment, and years of service. Among the 348 sampled teachers, the largest group (102 teachers, or 29.30%) were aged 38 to 46 years. The next largest group consisted of 100 teachers (28.70%) aged 29 to 37 years, followed by 96 teachers (27.70%) aged 47 to 55 years.

Table 1: Profile of the teacher-respondents

Profile	Frequency (n=348)	Percent (%)
Age		
20-28	35	10.00
29-37	100	28.70
38-46	102	29.30
47-55	96	27.70
56-64	15	4.30
Gender		
Male	153	44.00
Female	195	56.00
Civil status		
Single	91	26.00
Married	245	70.50
Widow/er	6	1.70
Separated	6	1.70
Highest educational attainment		
BS degree	2	0.60
BS with masters units	9	2.60
Master's degree	55	15.70
Masters with doctorate units	128	36.80
Doctorate degree	154	44.30
Number of years in service		
1 – 10	163	46.80
11 – 20	104	29.90
21 – 30	71	20.40
31 – 40	10	2.90

There were 35 teachers (10.00%) aged 20 to 28 years and 15 teachers (4.30%) aged 56 to 64 years. The mean age was 40.85 years. The majority of the group, 195 teachers (56.00%), were female, while 153 teachers (44.00%) were male. Regarding civil status, most were married (245 teachers or 70.50%). Single teachers accounted for 91 (26.00%), and there were six teachers (1.70%) each for widowed and separated statuses. The highest educational attainment showed that 154 teachers (44.30%) had doctorate degrees. This was followed by 128 teachers (36.80%) with master's degrees with doctorate units, 55 teachers (15.70%) with master's degrees, nine teachers (2.60%) with bachelor's degrees with master's units, and two teachers (0.60%) with bachelor's degrees. The mean years of service was 13.33 years. The majority, 163 teachers (46.80%), had up to 10 years of service. This was followed by 104 teachers (29.90%) with 11 to 20 years of service, 71 teachers (20.40%) with 21 to 30 years, and 10 teachers (2.90%) with 31 to 40 years of service. Table 2 shows the profile of student respondents in State Universities and Colleges (SUCs) in Region 02. The mean age was 20.59 years. Most students, 536 (83.00%) out of 646, were aged 17 to 21 years. This was followed by 92 students (14.20%) aged 22 to 26 years, 14 students (2.20%) aged 27 to 31 years, and the smallest group, 4 students (0.60%), aged 32 to 36 years.

The majority of the students were female, with 411 students (63.60%). There were 211 male students (32.70%) and 24 students (3.70%) who identified as LGBTQ+. Regarding the number of

siblings, most students (379 or 58.70%) had 4 to 6 siblings. This was followed by 186 students (28.70%) with 7 to 9 siblings, 47 students (7.30%) with 10 to 12 siblings, and 34 students (5.30%) with 1 to 3 siblings. The mean number of siblings was 3. In terms of the main language spoken at home, the majority of students (316 or 48.90%) spoke Ilocano. This was followed by 217 students (33.60%) who spoke Tagalog, 49 students (7.60%) who spoke Ibanag, 56 students (8.70%) who spoke Ifugao, and 8 students (1.20%) who spoke Bisaya. Regarding monthly family income, most students (569 or 88.10%) reported an income of Php 10,000 to Php 20,000. Fifty students (7.70%) had a monthly income of Php 20,001 to Php 30,000, twelve students (1.90%) reported Php 30,001 to Php 40,000, and six students (0.90%) each reported incomes of Php 40,001 to Php 50,000 and Php 60,001 to Php 70,000. Only three students (0.50%) had a monthly family income of Php 50,001 to Php 60,000. Regarding internet access, 312 students (48.40%) had internet at home. Those without home internet used other means: 291 students (45.00%) used free mobile data, 30 students (4.60%) went to a relative's house, 8 students (1.20%) accessed the internet from a friend's home, and 5 students (0.80%) used computer shops. In terms of ICT tools available at home for studying, the majority (570 or 88.20%) had tablet computers/iPads, 169 students (26.20%) had portable computers (laptops/notebooks/netbooks), 30 students (4.60%) had desktop computers, and 11 students (1.70%) had smartphones. Additionally, 74 students (11.50%) had other tools like USBs and printers.

3.2. Perceived extent of teachers' self-efficacy

Table 3 shows the extent of teachers' self-efficacy in the SUCs in Region 02. Sense of Efficacy. In Table 3, the mean ratings of 4.43, 4.47, and 4.35 or "Often" revealed a significant level of teachers' self-efficacy for instruction. They frequently responded to difficult questions from students, provided appropriate challenges for very capable students, and regularly implemented alternative strategies in the classroom. Oftentimes, they provided an alternative explanation when students were confused, as revealed by the mean rating of 3.43 or "Sometimes." Studies have highlighted the role of differentiation in the instructional practices of teachers in their classroom contexts. Particularly, Conner et al. (2024) reported ten principles for effective instructional practices based on the tenets of differentiated instruction that they believe need to direct the teachers in their instructional practices. In addition to emphasizing the principles, the amount of time that is actually devoted to differentiation is also crucial to note (Siming and Abraha, 2023). There is evidence that teachers who use differentiated instruction based on their learners' needs enable their learners to attain educational gains (Brocca, 2024; Hessamy and Ghaderi, 2014;

Esperat and Stickley, 2024; Markauskaite et al., 2022).

Table 2: Profile of the student-respondents

Profile	Frequency (n=646)	Percent (%)
Age		
17-21	536	83.00
22-26	92	14.20
27-31	14	2.20
32-36	4	0.60
Gender		
Male	211	32.70
Female	411	63.60
LGBTQ+	24	3.70
Number of siblings		
1-3	34	5.30
4-6	379	58.70
7-9	186	28.70
10-12	47	7.30
Language used at home		
Tagalog	217	33.60
Ilocano	316	48.90
Ibanag	49	7.60
Ifugao	56	8.70
Bisaya	8	1.20
Monthly family income (Php)		
10,000-20,000	569	88.10
20,001-30,000	50	7.70
30,001-40,000	12	1.90
40,001-50,000	6	0.90
50,001-60,000	3	0.50
60,001-70,000	6	0.90
Internet access		
At home	312	48.40
Friend's home	8	1.20
Relative's house	30	4.60
Computer shop	5	0.80
Free mobile data	291	45.00
Availability of ICT tools at home		
Desktop computers	30	4.60
Portable computer	169	26.20
Smartphone	11	1.70
Tablet computer/Ipad	570	88.20
Others	74	11.50

In addition, in terms of their efficacy for motivation, mean ratings from 4.32 to 4.42 or "Often" also indicated they repeatedly helped their students value learning a lot, motivated students who show low interest in schoolwork, improved the understanding of their students who were failing and sometimes let them get through to the most difficult students very well.

According to Wang and Klassen (2023), the relationship between openness to change, self-transcendence values, and self-efficacy varies based on teachers' motivations for teaching. Specifically, the relationship between openness to change and self-efficacy is positive when teachers have low controlled motivations but negative when they have high controlled motivations. This means that teachers who value novelty, freedom, and setting their own goals feel more efficient in their teaching when they feel independent from external pressures. Regarding classroom management, teachers' efficacy was also high, with mean ratings ranging from 4.25 to 4.42, corresponding to "Often." This indicates that teachers often made their expectations about student behavior clear, effectively controlled disruptive behavior, ensured students followed

classroom rules and successfully prevented a few problem students from disrupting entire lessons.

Table 3: Perceived extent of teachers' self-efficacy

Sense of efficacy scale	Mean	Description
Efficacy for instruction		
Respond to difficult questions from students	4.43	Often
Provide appropriate challenges for very capable students	4.37	Often
Implement alternative strategies in the classroom	4.35	Often
Provide an alternative explanation, for example, when students are confused	3.43	Often
Efficacy for motivation		
Help students value learning	4.38	Often
Motivate students who show low interest in schoolwork	4.32	Often
Improve understanding of a student who is failing	4.37	Often
Get through to the most difficult students	4.42	Often
Efficacy for classroom management		
Make expectations clear about student behavior	4.25	Often
Get students to follow classroom rule	4.26	Often
Control disruptive behavior in the classroom	4.32	Often
Keep a few problem students from ruining an entire lesson	4.42	Often
Behavior management strategies		
Establish specific rules and consequences for student misbehavior	4.75	Most of the time
Monitor the entire classroom	4.70	Most of the time
Correct misbehavior immediately	4.75	Most of the time
Reward (e.g., praise) good behavior	4.80	Most of the time
Use consistent disciplinary practices	4.72	Most of the time
Discourage misbehavior	4.85	Most of the time
Discuss behavioral problems with students to get their perspectives	4.75	Most of the time
Instructional strategies		
Present new material in small steps	4.74	Most of the time
Explain difficult ideas in a simple way	4.79	Most of the time
Rephrase when the student does not understand the question	4.82	Most of the time
Check that the students understand the lesson	4.80	Most of the time
Well prepared before going to class	4.77	Most of the time
Systematically review previously taught materials	4.76	Most of the time
Give the students feedback on their exams or tests	4.75	Most of the time
Motivational strategies		
Make a special effort to give students work that is creative and imaginative	4.79	Most of the time
Make a special effort to give students work that has meaning in their everyday lives	4.82	Most of the time
Make the subject really interesting to the students	4.80	Most of the time
Stress to students the need to understand the work rather than just memorize it	4.84	Most of the time

Researchers have found that effective classroom management practices positively impact student behavior and increase opportunities for students to engage during instruction (Sparapani et al., 2023; Tengberg et al., 2024). Good classroom management

significantly enhances student learning and development (Vromans et al., 2023). Tai (2024) noted that the techniques teachers use to prevent misbehavior are not innate and must be highlighted in teacher education programs; otherwise, they may be undervalued and underused. Classroom management is often seen as a method for disciplining bad behavior rather than a strategy for encouraging positive behavior.

Behavior management strategies: The teachers excelled in behavior management, as shown by their mean ratings ranging from 4.70 to 4.85, which correspond to "Most of the time." They typically established clear rules and consequences for misbehavior, monitored the entire classroom, and addressed misbehavior immediately. Additionally, they often rewarded good behavior with praise, consistently applied disciplinary practices, and discouraged misbehavior. They also frequently discussed behavioral problems with students to understand their perspectives.

In the study of Woodcock et al. (2022), it is found that teachers with high self-efficacy are associated with teacher perseverance in challenging tasks, such as management issues and positive classroom management. Therefore, it is important to identify not only what teachers report is being used but also how confident and successful teachers are in various classroom management practices.

Instructional strategies: The mean ratings of 4.74 to 4.82, or "Most of the time," indicate that teachers were very effective in their use of instructional strategies. They consistently presented new material in small steps and explained difficult concepts in simple terms. They frequently rephrased questions when students did not understand and ensured that students comprehended the lesson well. They systematically reviewed previously taught material, were well-prepared before class, and regularly provided feedback on students' exams or tests.

A teacher's belief in their ability to improve students' academic success and prevent unwanted behaviors by addressing their needs reflects their individual instructional competence. Their belief that school education is more effective than other external factors on student achievement is known as general teaching efficacy (Dai, 2024).

Motivational strategies: Table 4 shows mean ratings from 4.79 to 4.84, or "Most of the time," indicating that teachers had exceptional motivational strategies. They consistently put special effort into giving students creative, imaginative, and meaningful work. They also made the subject interesting and emphasized understanding the material rather than just memorizing it. According to Vermunt et al. (2023), teachers' personal values were significantly correlated with each other, except for self-transcendence and self-enhancement values. Openness to change, self-transcendence, and self-enhancement were positively associated with teachers' autonomous motivations for teaching.

Table 4: Relationship between the perceived extent of teachers' self-efficacy and their profile

Sense of efficacy scale	Age		Gender		Civil Status		Highest educational attainment		Years in the service	
	A	B	A	B	A	B	A	B	A	B
Efficacy for instruction										
Respond to difficult questions from students	0.04	0.41	0.01	0.91	0.04	0.46	0.04	0.45	0.09	0.07
Provide appropriate challenges for very capable students	0.05	0.30	0.02	0.64	0.06	0.27	0.07	0.16	**0.10**	0.03
Implement alternative strategies in the classroom	**0.11**	0.02	-0.08	0.12	**0.10**	0.05	0.07	0.17	0.09	0.06
Provide an alternative explanation, for example, when students are confused	0.05	0.30	0.00	0.98	0.05	0.37	0.05	0.31	0.05	0.3
Efficacy for motivation										
Help students value learning	0.02	0.62	0.00	0.98	0.05	0.3	0.01	0.77	0.04	0.45
Motivate students who show low interest in schoolwork	0.08	0.09	0.03	0.55	0.05	0.33	0.02	0.74	**0.13**	0.01
Improve understanding of a student who is failing	0.03	0.46	-0.03	0.57	0.04	0.49	0.02	0.67	0.05	0.28
Get through to the most difficult students	0.01	0.76	0.01	0.91	0.06	0.21	0.07	0.15	0.04	0.45
Efficacy for classroom management										
Make expectations clear about student behavior	0.06	0.20	0.04	0.41	0.02	0.64	0.06	0.22	**0.10**	0.04
Get students to follow classroom rules	0.01	0.84	-0.04	0.44	0.01	0.86	-0.05	0.31	0.01	0.85
Control disruptive behavior in the classroom	0.05	0.28	-0.02	0.72	-0.00	0.97	0.01	0.89	0.03	0.49
Keep a few problem students from ruining an entire lesson	-0.02	0.75	-0.07	0.15	0.02	0.66	-0.00	0.99	-0.03	0.55

A: Correlation coefficient; B: Significance level; Bold: Significant at 0.05 level

Table 4 shows the relationship between teachers' self-efficacy in instruction, motivation, and classroom management and their profiles in State Universities and Colleges (SUCs) in Region 02.

Efficacy for Instruction: Table 4 indicates that teachers' age was significantly related to their ability to implement alternative strategies in the classroom. Correlation values of 0.11 and 0.10, with significance levels of 0.02 and 0.05, respectively, led to the rejection of the null hypothesis, which stated there is no significant relationship between teachers' self-efficacy and their profile. This suggests that older teachers are more competent in using alternative strategies in the classroom. Similarly, civil status showed a significant relationship, with a correlation value of 0.10 and a significance level of 0.05, also leading to the rejection of the null hypothesis. This implies that single teachers may be less efficient in implementing alternative strategies compared to their married counterparts. On the other hand, correlation values of 0.04 and 0.05 with significance levels greater than 0.05 led to the acceptance of the null hypothesis regarding teachers' ability to respond to difficult questions, provide challenges for capable students, and offer alternative explanations when students are confused. Therefore, age and civil status did not significantly affect these aspects of instructional efficacy.

Regarding the teachers' number of years in service, a correlation value of 0.10 with a significance level of 0.03 led to the rejection of the null hypothesis. This indicates that teachers with more years of service are more likely to provide better and more appropriate challenges for very capable students. However, correlation values ranging from 0.05 to 0.09, with significance levels greater than 0.05, led to the acceptance of the null hypothesis. This means that the number of years in service does not significantly impact teachers' efficacy in responding to difficult questions from students, implementing alternative strategies in the classroom, or providing alternative explanations when students are confused. This contradicts Biebricher's (2023) findings, which suggest that

years of teaching experience do not determine teaching effectiveness, as no significant differences were found between teachers with different years of experience (below 10 years, 10 to 20 years, and above 20 years) across primary, high, and higher secondary schools. Baboolal and Singaram (2023) also found that even teachers with many years of experience, such as twenty-five years, still faced classroom management problems.

Table 4 shows that teachers' gender and highest educational attainment were not significantly related to their efficacy for instruction. Correlation values from 0.02 to 0.08 with significance levels greater than 0.05 led to the acceptance of the null hypothesis. Therefore, these teacher profiles cannot be used to predict their efficiency in responding to difficult questions, providing appropriate challenges, implementing alternative strategies, or offering alternative explanations when students are confused.

Efficacy for motivation: According to Table 4, teachers' age, gender, civil status, and highest educational attainment were not significantly related to their ability to help students value learning, motivate students with low interest, improve understanding for failing students, or reach the most difficult students. Correlation values from 0.00 to 0.08 led to the acceptance of the null hypothesis.

However, for years of service, a chi-square value of 0.13 with a 0.01 significance level for one item led to the rejection of the null hypothesis. This suggests that with more years of service, teachers become more effective in motivating students who show low interest in schoolwork. Nevertheless, the number of years served did not significantly affect teachers' ability to help students value learning, improve understanding for failing students, or reach the most difficult students, as shown by correlation values of 0.04 and 0.05 with significance levels greater than 0.05, leading to the acceptance of the null hypothesis.

Kuhn (2024) stated that "motivation serves as the initial engine to generate learning and later functions as an ongoing driving force that helps to sustain the long and usually laborious journey of

acquiring a foreign language." Motivational strategies may carry cultural characteristics, meaning these practices include important beliefs affecting their use in teaching. They maintain ongoing motivated behavior, protect it from distractions, increase student involvement, and help sustain action when progress slows or backslides (Thelen et al., 2022).

Efficacy for classroom management: Table 4 shows that teachers' years of service significantly affected one item, leading to the rejection of the null hypothesis. This implies that with more years of service, teachers are more likely to set clear expectations for student behavior. However, correlation values of 0.01, 0.03, and -0.03 with significance levels greater than 0.05 led to the acceptance of the null hypothesis, indicating that years of service did not significantly affect teachers' ability to get students to follow rules, control

disruptive behavior, or prevent a few problem students from disrupting the entire lesson.

Other aspects of teachers' profiles, such as age, gender, highest educational attainment, and civil status, were not indicators of their efficiency in classroom management. Correlation values from -0.02 to 0.06 with significance levels greater than 0.05 led to the acceptance of the null hypothesis.

3.3. Perceived attitude of the students towards learning

As seen in Table 5, as to the nature of learning, students rated themselves with 3.83, 3.92, and 4.46 or "Partly agree: Which indicated they sometimes felt that the clever ones learn more easily and sometimes believed that intelligence is vital for learning and learning goes on life-long.

Table 5: Perceived attitude of the students towards learning

Attitude scale	Mean	Description
Nature of learning		
The clever ones learn more easily	3.83	Partly agree
Intelligence is vital for learning	3.92	Partly agree
Learning goes on life-long	4.46	Partly agree
Openness to learning		
I enjoy learning difficult subjects	4.27	Partly agree
Learning has always interested me	4.67	Agree
I still have a lot to learn	4.23	Partly agree
I know how to make use of my experiences	4.23	Partly agree
I enjoy learning new subjects	3.90	Partly agree
I am always ready to learn new things	4.36	Partly agree
Expectations from learning		
Learning new things changes my thoughts	4.26	Partly agree
What I learn changes my opinion of life	4.23	Partly agree
I have to go on learning in order to make sound decisions about the problems encountered in daily life	4.25	Partly agree
I want to develop my communication with people through learning new things	4.58	Agree
Learning new things makes me successful in what I do	4.41	Partly agree
The more I learn the fewer wrong decisions I make	3.64	Partly agree
Learning new things motivates me more about my career	4.47	Partly agree
The more I learn, the larger the aims I pursue	4.44	Partly agree
Anxiety about learning		
Forgetting what I learn in a short time makes me anxious	3.93	Partly agree
Learning is a difficult job; I experience difficulties while I learn	3.80	Partly agree
Losing too much time while learning disheartens me	3.39	No opinion
I am bored while listening to new subjects	2.78	No opinion
I feel anxious when I start a new subject	3.59	Partly agree

Under openness to learning, students moderately enjoyed learning difficult subjects and slightly believed they still had a lot to learn. They sometimes knew how to use their experiences, enjoyed learning new subjects, and were occasionally ready to learn new things. This is reflected in the mean ratings from 4.23 to 4.36, indicating "Partly agree." However, a mean rating of 4.67, or "Agree," revealed that learning always interested them.

Regarding expectations from learning, one statement was rated 4.58, indicating "Agree." This shows that students always wanted to develop their communication skills by learning new things. Most other statements had mean ratings from 3.64 to 4.47, indicating "Partly agree." This suggests that sometimes learning new things changed their thoughts, influenced their opinions of life, and occasionally made them feel they needed to keep learning to make good decisions. They also felt that

learning new things sometimes made them successful and reduced wrong decisions. Occasionally, they believed that more learning led to bigger goals and more motivation for their careers.

In terms of anxiety about learning, three out of five statements were rated 3.93, 3.80, and 3.59, indicating "Partly agree." This suggests that students sometimes felt anxious about forgetting what they learned quickly, found learning difficult, and experienced difficulties while learning. They also sometimes felt anxious when starting a new subject. Two statements were rated 3.39 and 2.78, indicating "No opinion." This means they were unsure whether losing too much time while learning discouraged them or whether they were bored when listening to new subjects.

The effort of students to show expected behaviors regarding teaching objectives, whether as a positive or negative attitude toward learning, is

considered a predictor of their academic success (Cao et al., 2024; Weerarathna et al., 2023). Students express their feelings and thoughts about the learning environment and processes through appropriate or inappropriate behaviors, reflecting the expectations of the environment. They tend to explain themselves with positive or negative attitudes. Table 6 shows the relationship between students' perceived attitudes towards learning and their age, gender, number of siblings, main language at home, and monthly family income.

Nature of learning: Table 6 shows that students' age was significantly associated with their belief that clever students learn more easily. A correlation value of 0.07 with a significance level of 0.03 led to the rejection of the null hypothesis, indicating a significant relationship between students' attitudes towards learning and their profile. This implies that older students are more likely to believe that clever

students learn more easily. However, correlation values of 0.05 with significance levels of 0.13 and 0.18 led to the acceptance of the null hypothesis, indicating that age has no bearing on their views that intelligence is crucial for learning and that learning is lifelong.

A correlation value of -0.13 with a significance level of 0.00 led to the rejection of the null hypothesis, showing that gender is related to the belief that learning is lifelong. This suggests that male students are more likely to believe that learning continues throughout life. However, correlation values of -0.02 and 0.01 with significance levels of 0.60 and 0.73 led to the acceptance of the null hypothesis, indicating that gender does not significantly affect their beliefs about the importance of intelligence for learning and the ease of learning for clever students.

Table 6: Relationship between the perceived attitude of the students towards and their age, gender, number of siblings in the family, main language at home and monthly family income

Attitude scale	Age		Gender		Number of siblings		Main language at home		Monthly family income	
	A	B	A	B	A	B	A	B	A	B
Nature of learning										
The clever ones learn more easily	**-0.07**	0.03	0.00	0.60	-0.02	0.45	-0.03	0.39	0.00	0.91
Intelligence is vital for learning	-0.05	0.13	0.01	0.73	-0.02	0.57	**-0.09**	0.01	0.03	0.39
Learning goes on life-long	-0.05	0.18	**-0.13**	0.00	-0.02	0.56	**-0.09**	0.01	-0.05	0.14
Openness to learning										
I enjoy learning difficult subjects										
Learning has always interested me	-0.04	0.26	-0.01	0.84	-0.01	0.79	**-0.08**	0.02	0.02	0.61
I still have a lot to learn	-0.00	0.95	-0.05	0.16	0.06	0.07	-0.05	0.15	-0.02	0.59
I know how to make use of my experiences	-0.04	0.20	-0.01	0.83	0.01	0.74	-0.05	0.19	-0.01	0.75
I enjoy learning new subjects	**-0.11**	0.00	-0.02	0.62	0.01	0.79	-0.00	0.89	-0.01	0.82
I am always ready to learn new things	-0.04	0.23	0.02	0.58	0.04	0.26	-0.03	0.32	0.02	0.58
Expectations from learning										
Learning new things changes my thoughts	-0.03	0.40	**-0.11**	0.00	-0.0	0.64	-0.02	0.54	-0.05	0.19
What I learn changes my opinion of life	-0.05	0.10	-0.06	0.09	0.02	0.46	**-0.10**	0.00	0.01	0.74
I have to go on learning in order to make sound decisions about the problems encountered in daily life	-0.01	0.77	**-0.08**	0.03	0.01	0.78	-0.05	0.14	-0.02	0.55
I want to develop my communication with people through learning new things	0.02	0.52	-0.06	0.09	0.04	0.27	-0.02	0.56	-0.04	0.33
Learning new things makes me successful in what I do	-0.02	0.49	**-0.10**	0.00	0.05	0.16	-0.00	0.89	**-0.08**	0.04
The more I learn the fewer wrong decisions I make	-0.05	0.11	-0.00	0.90	-0.00	0.95	-0.03	0.40	0.05	0.17
Learning new things motivates me more about my career	0.01	0.79	-0.05	0.21	-0.01	0.86	**-0.08**	0.03	0.01	0.86
The more I learn, the larger the aims I pursue	0.04	0.19	**-0.07**	0.05	0.01	0.70	-0.05	0.12	-0.01	0.76
Anxiety about learning										
Forgetting what I learn in a short time makes me anxious	**0.10**	0.00	**-0.11**	0.00	0.05	0.09	-0.03	0.37	-0.05	0.20
Learning is a difficult job; I experience difficulties while I learn	0.02	0.6	0.01	0.74	-0.01	0.68	**-0.11**	0.00	-0.02	0.58
Losing too much time while learning disheartens me	0.02	0.52	-0.03	0.46	-0.02	0.59	-0.06	0.08	0.06	0.08
I am bored while listening to new subjects	0.01	0.69	**0.15**	0.00	0.01	0.64	0.01	0.79	**0.09**	0.01
I feel anxious when I start a new subject	0.05	0.10	0.01	0.87	0.02	0.44	-0.04	0.30	**0.07**	0.05

A: Correlation coefficient; B: Significance level; Bold: Significant at 0.05 level

The students' age and number of siblings were not linked to their attitudes toward the nature of learning, as shown by correlation values from -0.05 to 0.03 with significance levels greater than 0.05. This led to the acceptance of the null hypothesis, indicating that these factors do not influence beliefs about whether clever students learn more easily, intelligence is vital for learning, and learning continues lifelong.

For the main dialects spoken at home, correlation values of -0.09 with a significance level of 0.01 led to the rejection of the null hypothesis. This suggests

that students who speak Tagalog are more likely to believe that intelligence is crucial for learning and that learning is a lifelong process. However, a correlation value of -0.03 with a significance level of 0.39 led to the acceptance of the null hypothesis, indicating that the main dialect at home does not influence the belief that clever students learn more easily.

Openness to learning: As seen in Table 6, only age and main language spoken at home significantly impacted students' openness to learning. A correlation value of -0.11 with a significance level of

0.00 led to the rejection of the null hypothesis, suggesting that older students might enjoy learning new subjects less. Similarly, a correlation value of -0.08 with a significance level of 0.02 indicated that students who mainly speak Tagalog might be less interested in learning difficult subjects.

For other aspects of openness to learning, the correlation values from -0.04 to 0.00 with significance levels greater than 0.05 led to the acceptance of the null hypothesis. This means that age does not affect students' interest in learning, enjoyment of difficult subjects, ability to use their experiences, belief that they have much to learn, or readiness to learn new things. Similarly, the main dialect at home does not significantly influence these aspects.

Table 6 also shows that students' gender, number of siblings, and monthly family income have no significant impact on their openness to learning, as indicated by correlation values from -0.06 to 0.06 with significance levels greater than 0.05.

Expectations from learning: Regarding gender, correlation values from -0.11 to -0.07 with significance levels less than 0.05 led to the rejection of the null hypothesis. This implies that male students tend to have a higher drive to learn to make sound decisions, believe that learning new things makes them successful, and feel that more learning leads to larger goals. However, gender does not significantly influence their desire to develop communication skills, the impact of learning on their thoughts and career motivation, or their belief that learning reduces wrong decisions.

Correlation values from -0.05 to 0.05 with significance levels greater than 0.05 led to the acceptance of the null hypothesis for age and number of siblings, indicating that these factors do not affect students' expectations of learning.

For main dialects spoken at home, correlation values of -0.10 and -0.08 with significance levels of 0.00 and 0.03 led to the rejection of the null hypothesis. This suggests that students who speak Tagalog are more likely to believe that learning changes their opinions and motivates their careers. However, other correlation values from -0.05 to 0.00 with significance levels greater than 0.05 indicate that the main dialect does not affect their thoughts about learning, success, decision-making, or communication skills.

For monthly family income, a correlation value of -0.08 with a significance level of 0.04 led to the rejection of the null hypothesis, suggesting that higher family income might make students less likely to believe that learning changes their opinions. However, other correlation values from -0.04 to 0.05 with significance levels greater than 0.05 indicate that family income does not affect their thoughts on learning, career motivation, success, decision-making, or communication skills.

Anxiety about learning: Regarding age, a correlation value of 0.10 with a significance level of 0.00 led to the rejection of the null hypothesis, suggesting that older students may become more anxious about forgetting what they learn quickly. However, correlation values from -0.01 to 0.05 with significance levels greater than 0.05 led to the acceptance of the null hypothesis, indicating that age does not affect anxiety about starting new subjects, finding learning difficult, or feeling discouraged by spending too much time learning.

For gender, correlation values of -0.11 and 0.15 with significance levels of 0.00 led to the rejection of the null hypothesis, suggesting that male students may feel more anxious about forgetting what they learn but less bored with new subjects. However, other correlation values from -0.01 to 0.05 with significance levels greater than 0.05 indicate that gender does not affect feelings of learning difficulty, discouragement from spending too much time learning, or anxiety about starting new subjects.

Table 6 also shows that the number of siblings has no significant impact on anxiety about learning, as indicated by correlation values from -0.02 to 0.05 with significance levels greater than 0.05.

For main dialects spoken at home, a correlation value of -0.11 with a significance level of 0.00 led to the rejection of the null hypothesis, suggesting that students who speak Tagalog may find learning more difficult and experience more difficulties. However, other correlation values from -0.06 to 0.01 with significance levels greater than 0.05 indicate that the main dialect does not affect anxiety about forgetting what they learn, starting new subjects, boredom with new subjects, or discouragement from spending too much time learning.

Lastly, for monthly family income, correlation values of 0.09 and 0.07 with significance levels of 0.01 and 0.05 led to the rejection of the null hypothesis, suggesting that higher family income may increase boredom with new subjects and anxiety about starting new subjects. However, other correlation values from -0.05 to 0.06 with significance levels greater than 0.05 indicate that family income does not affect anxiety about forgetting what they learn, discouragement from spending too much time learning, or feelings of learning difficulty.

3.4. Relationship between the perceived extent of teachers' self-efficacy and the students' attitude

Table 7 shows the relationship between teachers' self-efficacy (instruction, motivation, and classroom management) and behavior management strategies, and students' attitudes towards learning, specifically their beliefs that clever students learn more easily, intelligence is vital for learning, and learning is lifelong. For efficacy in instruction, Table 7 shows that correlation values ranged from -0.07 to 0.03 with significance levels greater than 0.05. This led to the acceptance of the null hypothesis, indicating no significant relationship between teachers' self-efficacy and students' attitudes toward learning. This result implies that teachers' abilities to respond to difficult questions, provide appropriate challenges for capable students, implement alternative

classroom strategies, and offer alternative explanations do not affect students' beliefs about the ease of learning for clever students, the importance

of intelligence for learning, and the lifelong nature of learning.

Table 7: Relationship between the perceived extent of teachers' self-efficacy and the students' attitude towards learning in terms of nature of learning

Sense of efficacy scale	The clever ones learn more easily		Intelligence is vital for learning		Learning goes on life-long	
	A	B	A	B	A	B
Efficacy for instruction						
Respond to difficult questions from students	-0.07	0.17	0.00	0.94	-0.01	0.83
Provide appropriate challenges for very capable students	0.03	0.60	0.02	0.75	-0.04	0.40
Implement alternative strategies in the classroom	-0.04	0.38	-0.02	0.64	-0.04	0.37
Provide an alternative explanation or example when students are confused	-0.05	0.30	-0.06	0.20	-0.07	0.14
Efficacy for motivation						
Help students value learning	-0.08	0.12	-0.09	0.07	0.03	0.52
Motivate students who show low interest in schoolwork	-0.06	0.25	-0.02	0.62	0.02	0.69
Improve understanding of a student who is failing	-0.01	0.88	-0.05	0.26	0.05	0.36
Get through to the most difficult students	**-0.11**	0.03	0.00	0.34	-0.01	0.85
Efficacy for classroom management						
Make expectations clear about student behavior	-0.04	0.41	-0.06	0.24	-0.03	0.54
Get students to follow classroom rules	-0.05	0.27	-0.00	0.92	-0.02	0.70
Control disruptive behavior in the classroom	-0.04	0.41	-0.05	0.25	-0.00	0.93
Keep a few problem students from ruining an entire lesson	0.01	0.86	-0.02	0.71	0.03	0.51
Behavior management strategies						
Establish specific rules and consequences for student misbehavior	**-0.10**	0.05	-0.05	0.34	-0.04	0.40
Monitor the entire classroom	-0.09	0.08	0.02	0.68	0.06	0.27
Correct misbehavior immediately	-0.08	0.12	-0.01	0.85	-0.01	0.80
Reward (e.g., praise) good behavior	-0.08	0.11	-0.03	0.51	0.04	0.45
Use consistent disciplinary practices	-0.05	0.31	-0.01	0.91	-0.04	0.41
Discourage misbehavior	0.05	0.31	0.04	0.42	0.05	0.32
Discuss behavioral problems with students to get their perspectives	**-0.12**	0.01	-0.07	0.14	0.02	0.71

A: Correlation coefficient; B: Significance level; Bold: Significant at 0.05 level

Efficacy for motivation: One statement showed a correlation value of -0.11 with a significance level of 0.03, leading to the rejection of the null hypothesis. This suggests that when teachers are effective at reaching difficult students, those students tend to believe less that clever students learn more easily. However, correlation values of -0.08, -0.06, and -0.01 with significance levels greater than 0.05 led to the acceptance of the null hypothesis, indicating that teachers' effectiveness in reaching difficult students does not influence students' beliefs that intelligence is vital for learning and that learning continues throughout life. Table 7 also shows correlation values from 0.05 to -0.09 with significance levels greater than 0.05, leading to the acceptance of the null hypothesis. This means that teachers' ability to help students value learning, motivate those with low interest, improve understanding in failing students, and reach difficult students does not determine students' beliefs that clever students learn more easily, intelligence is vital for learning, and learning is lifelong.

Efficacy for classroom management: Correlation values from -0.06 to 0.01 with significance levels greater than 0.05 led to the acceptance of the null hypothesis. This indicates that teachers' abilities to clarify expectations about behavior, enforce classroom rules, control disruptive behavior, and prevent a few problem students from disrupting the entire class are not significantly associated with students' beliefs about the nature of learning, particularly that clever students learn more easily, intelligence is vital for learning, and learning is lifelong. Behavior management strategies: Establishing specific rules and consequences for

student misbehavior and monitoring the entire classroom were significantly associated with students' beliefs that clever students learn more easily. Correlation values of -0.10 and -0.12, with significance levels of 0.05 and 0.01, respectively, led to the rejection of the null hypothesis. This suggests that the more effective teachers are at setting rules and monitoring behavior, the less likely students are to believe that clever students learn more easily. However, correlation values from -0.09 to 0.05 with significance levels greater than 0.05 led to the acceptance of the null hypothesis, indicating that teachers' effectiveness in correcting misbehavior, rewarding good behavior, using consistent disciplinary practices, discouraging misbehavior, and discussing behavioral problems with students does not influence students' beliefs that clever students learn more easily.

Additionally, correlation values from -0.07 to 0.06 with significance levels greater than 0.05 indicated that students' beliefs that intelligence is vital for learning and that learning is lifelong cannot be measured by teachers' effectiveness in behavior management strategies.

4. Conclusion

The study aims to examine the correlation between teachers' self-efficacy and students' attitudes toward learning in four State Universities and Colleges (SUCs) in Region 02. A total of 348 teacher respondents and 646 student respondents participated in the study, and data were collected using an adapted questionnaire through online and face-to-face administration. The study found that

teachers' self-efficacy was high in all areas of teaching, and their age, years of service, and educational attainment had a significant impact on their efficacy in instructional and behavioral management strategies. Students' attitudes towards learning were mostly positive, but some aspects of their attitudes differed based on their age, gender, dialect spoken at home, and internet access. The age of the students had a significant association with their beliefs about learning, while male students had higher expectations from learning.

The recommendations for research beneficiaries are as follows: Educational leaders or managers should create policies for the professional development of new teachers, institutions should provide learning materials for students without ICT tools, teachers should enhance their skills through various approaches and platforms, future researchers should conduct studies on students' attitudes towards online learning, and they may replicate the study by expanding the scope or adding variables such as academic performance and peer-evaluated efficacy of teachers.

Compliance with ethical standards

Ethical considerations

The study was conducted in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. Ethical approval for the study was obtained from the Institutional Review Board (IRB) of Isabela State University, Echague Campus. Informed consent was obtained from all individual participants included in the study. Participation was voluntary, and participants were informed about their right to withdraw from the study at any time without any consequences. The confidentiality and anonymity of the participants were ensured throughout the research process.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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