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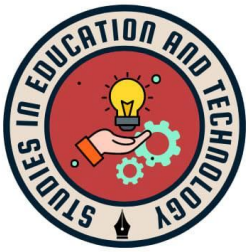

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Self-Efficacy of Pre-Service Teachers in Remote Learning: Its Relation to their Online Learning Performance

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Abstract

Philippines' tertiary education has been shaped by the pressing demand for adaptive educational processes from customary to flexible due to COVID-19. With the challenge of the pandemic to higher education, students' online learning performance has become the primary concern of all institutions. Considering the demands and pressures to succeed academically, there is a severe need for assurance that students can sustain confidence and self-esteem in a digital learning setting. Addressing this, the research utilized the quantitative method, specifically a descriptive-correlational research design. Relevant information was collected through the three-part questionnaire instruments: demographic profile of students, online learning self-efficacy scale, and online learning readiness scale with the prominent authors' consent. Findings revealed that motivation to learn directly and significantly influences the online learning success of aspiring teachers.

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INTRODUCTION

The temporary shutdown of educational institutions worldwide due to COVID-19 has resulted in critical adjustments in the education sector. UNESCO sees its outbreak as a severe global health crisis. Philippines' tertiary education has been shaped by the pressing demand for adaptive educational processes from the customary to flexible instruction methodologies that could reach out to young individuals even in the distance (Hamora et al., 2022). The existing learning mechanism has identified two themes as opportunities to learn: self-contained training and optimism in one's strengths while navigating electronically. New to the platform, a recent study has been conducted by Talosa et al. (2021) purported to record and characterize the educational opportunities and elements that contribute to students' potency in a flexible schooling setup. The main subjects that have become significant influencing factors in online education include personal, technical, information exchange, family structure, and instructor-related concerns.

Educators had various issues implementing online distance learning (ODL), including narrow evaluation methods to gauge educational objectives, minimal expertise in creating e-content, and inadequate exposure to application setup. Students' access to online learning has also grown, becoming a huge factor. Before designing ODL exercises, teachers must consider how internet access and computer proficiency affect students' anxiety, particularly those who reside in far-flung places, students' ability to finish independently the tasks listed in ODL activities without the presence of their classmates and teachers in face-to-face discussion, and their determination to finish their work despite interferences and challenges at home (Hamora et al., 2022). Potential factors substantially impact students' academic performance and preparation for new normal learning (Bacomo et al., 2022; Caasi & Pentang, 2022; Mariano-Dolesh et al., 2022). With these cues, there is a severe need for assurance that learners can uphold self-efficacy in a virtual learning setting considering the demands and pressures to succeed in their academic performance.

Previous research has cautioned that online courses can seriously impair students' academic performance, particularly those experiencing difficulties. The focus of online education has transitioned from being instructor-centered to being more learner-centered, emphasizing learners' responsibility to handle and track their development. Recognizing the pre-service teachers' readiness for remote learning is also critical because it may affect their attitudes and behavior regarding emergency distance learning. Researchers have also emphasized that promoting student achievements in learning remains a fundamental principle of education, regardless of the delivery format (Liu, 2019).

With the challenge that the pandemic has brought to educational institutions, students' online learning performance becomes a primary concern, thus, prompting the researchers to highlight the relationship between pre-service teachers' online learning self-efficacy and readiness to that for their online learning performance. Modifying instruction methodologies, including switching from conventional face-to-face learning to e-learning, may impact the learner's self-efficacy. Although ability and motivation are not the same as self-efficacy, they are closely related. Unique to those environments, self-efficacy in online learning has been ascertained to be a massive foreteller of academic success for online students.

According to the social cognitive theory, self-efficacy is one's evaluation of his or her aptitude to coordinate thoughts, feelings, and actions to achieve a desired result. It is not exactly what people can do but what they believe they can do (Dua et al., 2022; Santos et al., 2022). Self-efficacy and students' academic achievement have been linked and have a significant association (Dua et al., 2022). This constancy ushered the researchers to prove whether the Cagayan State University - Aparri pre-service teachers have positive self-efficacy and readiness levels in remote learning.

Research Questions

This study aimed to actuate the self-efficacy level of the pre-service teachers in remote learning about their online learning performance for the SY 2021-2022. It aimed primarily to respond to the succeeding research queries:

1. What is the profile of the pre-service teachers in terms of:
    a. sex
    b. age
    c. course
    e. parent's monthly income
    f. available technology at home
2. What is the level of readiness of the pre-service teachers?
    a. Computer/internet self-efficacy
    b. Self-directed learning
    c. Learner control
    d. Motivation for Learning
3. What is the pre-service teachers' self-efficacy level regarding the following dimensions?
    a. Learning in the online environment
    b. Time management
    c. Online communication self-efficacy
4. What is the online course performance of the pre-service teachers?
5. Is there a noteworthy distinction in the online course performance of the students when they are segmented into
    a. Readiness level
    b. Self-efficacy level
    c. Profile Variable
6. Is there a noteworthy association between the pre-service teachers' readiness, self-efficacy, and online learning performance?

METHODOLOGY

The research utilized a quantitative method, specifically descriptive-correlational. The participant profile, self-efficacy, and teacher-practicum readiness were all assessed using the descriptive design. Further, correlational design was used for the inferential questions gathered and analyzed. The study utilized a standard survey questionnaire. There are three parts to the questionnaire. The first part constitutes the pre-service teachers' demographic profile, sex, age, course, general weighted average, parents' monthly income, and available devices at home. The second part is the Online Learning Self-Efficacy Scale (OLSES), the adaptation, validity, and reliability analyses of which are carried out within the scope of this study. Zimmerman and Kulikowich (2016) created the OLSES scale, which has 22 items and three sub-dimensions (learning in the online environment, time management, and technology use).

The last section uses the Online Learning Readiness Scale (OLRS), developed by Hung et al. (2010). There are 18 questions on it, distributed over five dimensions: computer/internet self-efficacy (3 questions), self-directed learning (5 questions), learner control (3 questions), motivation for learning (4 questions), and online communication self-efficacy (3 items). The study participants are the 4th year Pre-service Teachers in elementary and secondary education programs majoring in English, Science, and Math. Lynch's Formula was utilized to get the number of sampling participants for the study from BEED, BSE English, BSE Science, and BSE Math. The study was carried out at Cagayan State University Aparri Campus, particularly in the College of Teacher Education, one of the seven undergraduate colleges on the campus that offers programs for bachelor's degrees in elementary education and secondary education (English, Mathematics, and Science) with a total of 135 fourth-year college students.

RESULTS AND DISCUSSION

Sex

Of the 65 respondents (Table 1), 24.62% are men, while 75.38% are women. The results unequivocally demonstrate that teaching is a profession that favors women. This result is coherent with what Talosa et al. (2021) discovered, where males are outnumbered in the College of Teacher Education.

Table 1. Frequency and percentage distribution of the respondents of their sex

Sex	Frequency (n=65)	Percentage
Male	16	24.6
Female	49	75.38

Age

Table 2 revealed that 32.31% of them are 21 years old, while 49.23% of them are 22 years old. Meanwhile, 18.47% are older than 23. The results show that most pre-service teachers are aged 21-22, which is the appropriate age for graduating students. Few researchers investigated the demographic profile of students who take online learning. As per studies, older students are more remarkable in the number who take online courses than students who take a mix of online and in-person courses.

Table 2. Frequency and percentage distribution of the respondents in terms of their age

Age	Frequency (n=65)	Percentage
21	21	32.31
22	32	49.23
23 above	12	18.46

Course

Table 3 reveals that 23.08% are under the Bachelor of Elementary Education program while 36.92% are in Bachelor of Secondary Education Major in English, 16.92% are majoring in Science, and 23.08% belong to Major in Math. It could be noted from the figures that the highest frequency comes from the English program as the major usually takes the highest population, as college records show.

Table 3. Frequency and percentage distribution of the respondents in terms of their specialization

Course	Frequency (n=65)	Percentage
BEED	15	23.08
BSE ENGLISH	24	36.92
BSE SCIENCE	11	16.92
BSE MATH	15	23.08

Parent's Monthly Income

Table 4 discloses that 89.23% of pre-service teachers come from families with a monthly salary of 10,000 or less, while 9.23% come from families with a monthly salary of 11,000–20,000. Furthermore, only one has parents with a monthly salary of 21,000-30,000.

Table 4. Frequency and percentage distribution of the respondents in terms of their parent's monthly income

Parent's Monthly Income	Frequency (n=65)	Percentage
10,000 below	58	89.23
11,000-20,000	6	9.23
21,000-30,000	1	1.54

Available Technology at Home

Table 5 exposes the respondents' frequency and percentage dispersion regarding technology resources they can access at home. The table reveals that an Android phone ranked one. Mobile phones are probably the most popular gadget for academic purposes. The expansion of smartphones makes this type of mobile technology widely and broadly available for education, even though its features and functions are more constrained than those of more sophisticated mobile devices, such as laptops and personal computers.

Table 5. Frequency and percentage distribution of the respondents in terms of their available technology at home

Available Technology at Home	Frequency (n=65)	Rank
Android Phone	61	1
Laptop	42	2
Prepaid Wifi	16	3
Postpaid Wifi	11	4.5
Tablet	11	4.5
Desktop	2	5

Pre-service teachers Online Learning Self-Efficacy

Table 6 shows the summary of the digital learning self-efficacy of students. The data revealed that only technology used has the highest mean. The categories 'learning in an online environment' (3.86) and 'time management' (3.56) have a descriptive value of 'neutral'. This finding means the pre-service teachers highly perceived their online learning self-efficacy in using technology. In a study by Zimmerman and Kulikowich (2016), ratings for the self-efficacy and value subscales were compared between students who predominantly took in-person courses and those who attended online courses more frequently. Students who primarily took classes online scored significantly higher on items measuring self-efficacy for online learning and on the use of devices in a virtual classroom. Prior personal experiences are part of the ultimate references of self-efficacy (Dua et al., 2022; Santos et al., 2022). Regular online students have presumably had more success personally learning digitally while utilizing online resources. This encounter might have improved their scores on these self-efficacy subscales. Additionally, individuals who feel more empowered and comfortable learning online might decide to register as 24/7 Internet students.

Table 6. Summary table on the online learning self-efficacy of the students

Category	Mean	Descriptive Value
Learning in the Online Environment	3.86	Neutral
Time Management	3.56	Neutral
Technology Use	4.00	High

Pre-service Teachers Online Learning Readiness

Table 7 shows the summary table on the pre-service teachers' online learning readiness. From the data, the online learning readiness scale mean is 3.87 with a descriptive value of neutral (neither high nor low), which signifies the pre-service teachers' readiness to navigate distance learning. The

conclusion is the same as the results of the study of Dorsah (2021) using OLRS that pre-service teachers are prepared for e-learning.

The dimensions with the highest means are "motivation for learning" (4.32), "computer/internet self-efficacy" (4.07), and "self-directed learning" (4.01). It could be noted that pre-service teachers are motivated, and they are confident and well-engaged with Internet and computer systems operations. Peechapol et al. (2018) mentioned that the ultimate factors contributing to the self-efficacy of online learners are their motivation and attitude. Motivation, the degree of consistent efforts toward reaching a purpose, can result from the conglomeration of internal and external factors, including environmental and situational variables. Wang et al. (2013) claimed that motivation directly impacts one's self-efficacy concerning technology. Optimism and driving forces have a complex relationship. Each almost certainly affects or helps the other.

However, the dimensions "learner control" (3.79) and "online communication self-efficacy" (3.14) were recorded with low means. This demonstrates that pre-service teachers found challenges in digital interaction and lacked regulation over their learning. Consistent results can be found in the study of Chung et al. (2020) that although the respondents generally indicated confidence in their ability to utilize the Internet to search for information, they broadly expressed disagreement with the notion that extra internet activities do not sidetrack them.

Table 7. Summary table on the pre-service teachers' online learning readiness

Dimension	Mean	Descriptive Value
Computer/Internet Self-Efficacy	4.07	Highly Agree
Self-Directed Learning	4.01	Highly Agree
Learners Control	3.79	Neutral
Motivation For Learning	4.32	Highly Agree
Online Communication Self-Efficacy	3.14	Neutral
Online Learning Readiness Scale	3.87	Neutral

Online Learning Performance

Table 8 shows that the general weighted average with the highest frequency ranges from 88-90 with a corresponding percentage of 47.69%. Meanwhile, 47.69% of them have a general weighted average of 85-87, 23.08% belong to the 91-93 average range, and only 1.54% have a general average of 94 and above.

Table 8. Online course performance of the students

General Weighted Average	Frequency (n=65)	Percentage
85-87	18	27.69
88-90	31	47.69
91-93	15	23.08
94 and above	1	1.54

Correlation between the Pre-Service Teachers' Online Learning Performance and Profile Variables

Students' pre-service teachers' online learning performance was significantly correlated with available technology at home. This finding implies that the more pre-service teachers access technology at home, the better they perform online. This finding implies that technologies at home improve online performance. This finding is consistent with the findings of Talosa et al. (2021), who discovered that with distance learning quickly becoming the most viable solution for the current standard academic platform, technology literacy is critical, and digital literacy is expected to be higher among pre-service teachers who have access to available technologies at their homes.

Table 9. Correlation between the pre-service teachers' online learning performance and profile variables

Variables	r-value	probability	Statistical Inference
Sex	0.092	0.468	Not Significant
Age	0.120	0.343	Not Significant
Course	0.05	0.648	Not Significant
Parents Monthly Income	0.131	0.299	Not Significant
Available Technology at Home	0.302	0.010	Significant

Correlation between the Pre-Service Teachers' Online Learning Performance and Online Learning Self-Efficacy

Learning in the digital world, time management, and technology use did not statistically correspond to the pre-service teachers' online learning performance. The table illustrates that time management, online environment, and technology use have no direct bearing on students' performance. The research by Liu (2019) showed how orientation programs affect students pursuing online coursework. It has been confirmed that personal competency, study strategy, technical, and information-sharing components must all be incorporated into the design of online orientation. It is these dimensions that correlate to students' general performance.

Table 10. Correlation between the pre-service teachers' online learning performance and self-efficacy

	r-value	probability	Statistical Inference
Learning in the Online Environment	0.142	0.256	Not Significant
Time Management	-0.013	0.919	Not Significant
Technology Use	0.120	0.343	Not Significant

Correlation between the Pre-Service Teacher's Online Learning Performance and Readiness

The table revealed that motivation for learning significantly relates to pre-service teachers' performance. This signifies that a student's performance improves as his or her motivation escalates. The finding has the same conclusion as the study of that the crucial element that encourages students to persist in their academic assignments is their intrinsic motivation. As a result, their enthusiasm to carry out a task significantly impacts how well they do.

Table 11. Correlation between the pre-service teachers' online learning performance and readiness

	r-value	probability	Statistical Inference
Computer/Internet Self-Efficacy	0.191	0.127	Not Significant
Self-Directed Learning	0.070	0.540	Not Significant
Learners Control	0.010	0.880	Not Significant
Motivation For Learning	0.260	0.030	Significant
Online Communication Self-Efficacy	-0.223	0.070	Not Significant
Online Learning Readiness Scale	0.077	0.543	Not Significant

CONCLUSION AND RECOMMENDATION

The pre-service teachers used technology extensively but had neutral online learning self-efficacy in both time management and learning in an online environment. They also have average academic achievement and a generally neutral internet readiness. Students are responsible for their progress in online learning. To succeed in their online learning performance, they must improve their readiness for using computers and the Internet, become self-directed learners, be in charge of their learning, engage in online communication, and reevaluate their learning motivations.

To succeed in the current learning modality, the institution, administrators, and teachers should devise strategies to strengthen students' intrinsic, integrative, and external motivation to learn. Future researchers should conduct studies on online motivation and look for ways to improve students' performance in remote learning through various research methods and designs. Another study should look into other factors that may interfere with or influence students' performance in online learning.

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