

RESEARCH ARTICLE: E-learning readiness and academic performance of senior high school learners

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ABSTRACT. The study was conducted to determine the e-learning readiness of Senior High School learners and its influence to their academic performance. It employed a descriptive–correlational research design. Based on the results of the study, it is concluded that the level of readiness of SHS learners on Technology Access revealed a slight e-learning readiness. In terms of the level of readiness of SHS learners on Technological Confidence and Training, a slight e-learning readiness was revealed in so far as their fundamental computer skills, internet/online abilities, and e-learning background is concerned and with moderate readiness in respect to the social support given by parents, teachers, and peers. With regards to the level of readiness of SHS learners as far as Attitudes towards Successful Online Learning is covered, results showed that learners moderately displayed study habits that are geared towards independent learning yet are vulnerable to distractions. Further, it was shown that there is no significant correlation between SHS learners' e-learning readiness and their academic performance nor is there a significant difference between SHS learners' readiness for e-learning and their track, gender, and age.

KEYWORDS: *e-learning readiness, academic performance, technological confidence and training, online learner attitudes*

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Introduction

The COVID-19 pandemic has necessitated a shift towards e-learning in many educational institutions. Following President Rodrigo Roa Duterte's declaration on March 16, 2020, to place the entirety of Luzon under an Enhanced Community Quarantine (ECQ), other major provinces and cities throughout the Philippines, through their respective Local Government Units (LGUs), implemented an array of measures in response to the escalating coronavirus disease 2019 pandemic. The LGU of Zamboanga City then, released Executive Order (EO) number BC 552-2020, “An Act Strengthening the Precautionary Measures to Prevent the Spread of COVID-19 in Zamboanga City” which directed the cancellation of all classes in both public and private educational institutions.

Ensuring that learning continues through curriculum adjustments for grades K–12, material alignment, the use of multiple learning delivery modalities, relevant training for educators and

administrators, and preparing parents and guardians for the so-called "New Normal" in the basic education delivery are the Department of Education's highlighted principles. It is foreseen that one of the key factors in realizing the goals of the Basic Education Learning Continuity Plan is the readiness of schools in the effective deployment of blended distance learning modalities, of which one of the identified options is the electronic learning or e-learning. The term "e-learning" refers to a kind of instruction that allows students to learn from anywhere at any time with the help of information and communication technologies (ICT). The use of technology to connect is what e-learning is all about. This method of learning is suited for teachers and students who are separated by physical distance (Nolasco, 2022).

To meet the educational demands of learners, the Department of Education (DepEd) has consistently implemented blended learning and distance learning approaches. Online classes, self-learning materials, lessons via television and social media platforms, and access to limited face-to-face classes are some examples (ChildHope Philippines, 2021). Although learners and teachers prefer in-person classes, an adjustment to electronic learning in online education as an alternate mode of instruction must be considered as these new learning tools then require internet access.

As the DepEd– Zamboanga City Division remains true to its commitment to deliver basic educational services to its learners amidst the country's health emergency due to COVID-19, an inevitable challenge arises on how to further increase students' academic performance and mitigate learning losses given a new set-up in the education process. The learners' academic performance in this very sense is one that refers to the measurement of learners' ability through their final grades across a range of subject areas. Teachers and school administrators frequently use summative exams, standardized test results, and classroom performance to evaluate student achievement. A recent study found that the implementation of modular distance learning resulted in a 2.25 percent decrease in learners' general weighted average, indicating a substantial difference in their academic performance (Dargo & Dimas, 2021).

With this, a study that seeks to investigate the e-learning readiness of senior high school learners at Sangali National High School, Zamboanga City, Philippines is conducted. E-learning readiness, encompassing factors like technology access, technological skills, and learner attitudes, has been shown to influence academic performance in previous studies. In a study conducted by Bazargan (2023), results show a significant correlation between students' performance in the classroom and their readiness for e-learning. Thus, ensuring learners readiness for e-learning is necessary to guarantee high student learning performance in e-learning courses. On the other hand, Torun (2020) stated that academic achievement is most strongly predicted by self-directed learning, with motivation for online/e-learning being another significant predictor.

Learner control and self-efficacy with the internet, online, and computers were not proven to be significant determinants of academic achievement. Therefore, e-learning readiness needs to be carefully considered within this new educational paradigm, as physical instruction is slowly transitioning to online learning, particularly with the global spread of COVID-19. Given the new normal in education, understanding the e-learning readiness of Sangali National High School-Senior High School (SNHS-SHS) learners is crucial to ensure their success in online learning environment.

Research Questions

Generally, this research study aimed to determine the e-learning readiness and its correlation to the academic performance of Sangali National High School - Senior High School learners of school year 2021-2022.

Specifically, the said study sought to answer the following research questions:

1. What is the level of e-learning readiness of Senior High School learners in terms of the following predetermined conditions?
 - 1.1. Technology Access
 - 1.2. Technological Confidence and Training
 - 1.3. Attitudes Towards a Successful Online Learner
2. What is the learner's academic performance in the following core subjects?
 - 2.1. Reading and Writing
 - 2.2. Statistics and Probability
 - 2.3. Pagbasa at Pagsusuri ng Iba't Ibang Teksto tungo sa Pananaliksik
 - 2.4. Physical Science
 - 2.5. Physical Education and Health
3. Is there a significant relationship between the level of e-learning readiness and academic performance of the Senior High School learners?
4. Is there a significant difference in the Senior High School learners' level of e-learning readiness based on the profile of the students?

Literature Review

E-learning -Background and Application

The globe has been drenched in communication technologies, which turned into a world of knowledge. In such circumstances, information and communication technology plays a huge role because it enhances efficiency and effectiveness, saves time, money, and effort, promotes knowledge sharing, provides a platform for cooperation, and expands service reach. E-learning is revolutionizing the education sector in a big way. The expansion of courses and changing trends in the education sector have given learners a greater number of options to choose from when it comes to determining their professional path based on their competencies and skills. E-learning can be beneficial to learners of all ages because it enables individuals to thrive in their chosen profession (Rawashdeh, 2021)

One of the most popular uses of information and communication technologies (ICT) in the current day is e-learning, which is a technique of learning that is made possible by these technologies. The educational system is one of the main benefactors of the use of ICT, particularly in open and distance education. E-learning establish ties between learners and teachers who are separated by time and place. As a result, the terms "e-learning" and "online education," "computer-based teaching," "technology-enhanced learning," and so on are used interchangeably. Numerous academic departments and learning institutes have made use of e-learning (Bilal, 2015). The ability of learners to adjust to a new teaching and learning environment is stressed by their readiness for e-learning, which makes it crucial in the context of education today.

The increased need for education in many developing nations is thought to be the reason behind the adoption of e-learning. The field of education has changed in the last century due to the quick development of internet technologies and the revolution in computer software (Tayebinik & Puteh, 2013). This has improved the way people learn and teach, especially in distant education. Comparative research between online and in-person learning settings, student learning outcomes, and e-strengths and weaknesses of learning have all been made feasible by the concepts around e-learning. At present, an increase in internet accessibility nationwide, including in rural areas, and better technological facilities are seen as benefits for e-learning in Open and Distance Learning (ODL).

E-learning Readiness in the Philippines

In light of the COVID-19 outbreak, the Department of Education in the Philippines has recommended the use of distance learning as a substitute for in-person instruction as part of the Learning Continuity Plan. This approach uses the ability of modern technologies to meet the educational needs of the students in spite of stringent limitations like social distancing protocols and community quarantines. The Department of Education created an online learning platform through e-learning to address the challenges that the current crisis brought to teachers as well as to learners in the educational process.

One of the numerous strategies to support distance learning is the integration of e-learning into the teaching and learning process, as well as the establishment of an e-learning environment within schools. In a study conducted Frank et al. (2003), they found that learning is even more challenging for high school students in a distant learning and computerized environment. Another study found that those with low technological efficacy are less likely to accept new technology. Consequently, entities may choose to create supplementary guidelines that have the potential to enhance the proportion of e-learning implementation (Sawang et al., 2013). During this new normal, the Philippines requires a clear set of regulations and directives based on an innovative educational system.

E-learning and Academic Performance

In higher education, e-learning is quickly gaining popularity and effectiveness due to the extensive use of web-based learning resources. A research study conducted by Mothibi (2015) laid its goal on figuring out how e-learning affects students' academic performance in higher education. The calculated results demonstrate that information and communication technology (ICT) significantly improves e-learning students' academic performance. Additionally, it demonstrates that ICT significantly improves students' overall academic performance. This finding is corroborated by another study, which asserts that e-learning students at higher academic institutions do better than conventional in-person learning, according to research (Rohayani et al., 2015). Holley (2002) stated that students who engage in online learning attain higher grades compared to those who study through conventional means.

Given the effectiveness of e-learning in enhancing students' academic performance depends on the quality of ICT, the impact of e-learning on student academic achievement cannot be regarded separately from the nature of ICT infrastructure. The use and application of information and communication technology in teaching and learning has led to notable improvements in student academic performance across a wide range of academic disciplines and faculties in today's highly globalized society. Modern multimedia information and communication technologies are increasingly being used in the teaching and learning processes, which shows the effectiveness of ICT in these systems (Fayomi et al., 2015). Students' enthusiasm for learning new things while applying what they have learnt to deal with social issues in the real world is increased when interactive ICT-based approaches is utilized.

Methodology

1. Research Design

This study utilized a descriptive-correlational research methodology in its view of determining the level of e-learning readiness of Grade 11 Senior High School learners of Sangali National High School according to technology access and other predetermined conditions. In

addition, this research also used a correlational research study as it aimed to determine the significant relationship between e-learning readiness and the academic performance of learners.

2. Research Participants

The 202 Sangali National High School Grade 11 learners who were formally enrolled in the second semester of school year 2021-2022 were the respondents and were selected at random to participate in the research study. Among the respondents, 148 were enrolled in the TVL – Home Economics and Aquaculture Track. The remaining 54 were enrolled in Academic Track. Seventy-seven (77) among the respondents were Male and one hundred twenty-five (125) were Female. As for the Age, 77 learners belong to 15-17 years old category; 101 respondents belong to the category that is 18-20 years old; and 24 respondents aged 21 years old and above.

The number of respondents was identified through the use of Slovin's Equation. A probability sampling technique, specifically an electronic simple random sampling, was employed to select respondents from two tracks of specialization that is being offered by the school, which are Academic – HUMSS and TVL-Home Economics and Aquaculture. The said grade level was identified since the study targeted to highlight the academic performance of the learners in the five core subjects that are as follows: Reading and Writing, Statistics and Probability, Pagbasa at Pagsusuri ng Iba't Ibang Teksto tungo sa Pananaliksik, Physical Science, and Physical Education and Health.

3. Research Instruments

This research study used a survey questionnaire that was adopted from Doculan (2016) study on e-Learning Readiness Assessment Tool for Philippine Higher Education Institutions which was validated by the Planning and Research Team of the Department of Education-Zamboanga City Division in terms of its content and construct. To test the reliability of the instrument, a test-retest reliability at two different times was conducted among separate group of Grade 11 learners. Then, the correlation coefficient between the scores of the two assessments was calculated and interpreted using Cronbach's alpha.

In addition, each questionnaire comprises three sections. The first part includes five (5) statements on Technology Access which consists of five (5) statements with a 5-point Likert Scale response where it means, 1 = No Technology Accessibility, 2 = Rarely Accessible, 3 = Sometimes Accessible, 4 = Frequently Accessible, and 5 = Always Accessible.

Sixteen (16) statements that measure technological confidence, support, and training are included in the second part. Each of the four sub-parts—Basic Computer Skills, Internet/Online Skills, Training, and Social Support—has four (4) statements. In this section of the survey, each statement is followed by a 5-point Likert scale response: 1 for Not Ready, 2 for Less Ready, 3 for Somewhat Ready, 4 for Ready, and 5 for Very Ready.

Attitudes Toward a Successful Online Learner are measured in the third part of the survey questionnaire. It consists of sixteen (16) statements altogether, four (4) of which are included in each of the following sub-sections: Study Habits, Abilities, Motivation, and Usefulness. A 4-point Likert scale is also used for the response, with 1 denoting Never, 2 Sometimes, 3 Often, and 4 Very Often.

Meanwhile, the respondents' midterm grades in the second semester's core subjects, as shown on their report cards, served as a basis for the senior high school learners' academic performance. The numerical value that resulted from summing together the scores of the learners' performance on various assessment levels was used to determine the learner's level of proficiency. These

numerical scores indicated that: 74% and below = Did not meet expectations, 75 - 79% = Fairly Satisfactory, 80 - 84% = Satisfactory, 85 - 89% = Very Satisfactory, and 90% and above = Outstanding (DepEd Order No 8, s. 2015).

4. Data Gathering Procedure

To obtain permission to carry out the research study, the researcher sent a letter to the school head's office. Upon approval by the school head, a communication letter was sent to the office of the School Parent-Teacher Association (SPTA) to request the participation of Grade 11 learners as respondents of the study. The SPTA functions as the key stakeholders that are in place to protect the rights and welfare of learners regardless of gender, race, and cultural background, as well as their awareness of the community values.

Meanwhile, an informed consent was also given to the parents/guardians of the respondents with the permission of the SPTA for them to be aware that there are no known risks in their son/daughter/ward's participation in the research study. Through a letter of invitation, the respondents' parents/guardians were invited to attend a brief orientation on the process data collection.

The Grade 11 learners completed the survey by responding online to a Google Form which the researcher had provided. The survey was developed utilizing an e-Learning Readiness Assessment Tool for Philippine Higher Education Institutions, which was authored by Jo Ann D. Doculan from Ifugao State University's College of Computer Science.

The said survey instrument was sent to the respective group chats of the respondents with the aid of the Messenger Application as the online platform. As stated in the first part of the Google Form, the respondents were requested to read each statement carefully and tick a response that best applies to them. All the 202 randomly selected Grade 11 learners filled out the online survey.

The respondents were requested to complete the online survey within two days after the survey was sent. Subsequently, the Statistical Package for Social Science software (SPSS) was used to retrieve, tabulate, encode, and compute data to streamline the analysis and interpretation of the findings with respect to the study's research problem.

5. Data Analysis

The results were carefully tabulated, classified, and analyzed using specific statistical measures. The level of e-learning readiness of SHS students was determined utilizing descriptive statistics (mean and standard deviation) under three preset conditions: technological access, technological confidence and training, and attitudes toward being a successful online learner. Additionally, the academic performance of SHS learners in the following core subjects—Reading and Writing, Statistics and Probability, Pagbasa at Pagsusuri ng Iba't Ibang Teksto tungo sa Pananaliksik, Physical Science, and Physical Education and Health—was analyzed using descriptive statistics.

Meanwhile, the correlation between the Senior High School learners' academic performance and their readiness for e-learning was determined using the Pearson Product Moment Correlation analysis. To ascertain whether there is a significant difference in the SHS learners' level of e-learning readiness when data are grouped into Track and Gender, the t-test for independent samples was utilized while one-way analysis of variance (ANOVA) was used to determine if there is a significant difference between the age and level of e-learning readiness of SHS learners.

Results and Discussion

Question 1. What is the level of e-learning readiness of Senior High School learners in terms of the following predetermined conditions?

Technology Access

Table 1. E-learning Readiness of SHS Learners in terms of Technology Access

Statements	Mean	Verbal Description
I...		
1. own access to a functional computer (pc, laptop) or smartphone	3.46	Ready
2. have ready access to a dependable computer in school.	1.90	Slightly Ready
3. have access to a computer and internet connection at home.	2.65	Moderately Ready
4. have access to a computer in campus with internet connection.	1.83	Slightly Ready
5. have access to a computer installed with search engines (ex. Google, Ask) and internet browsers (ex. IE, Firefox, Google Chrome)	3.08	Moderately Ready
Composite Mean	2.58	Slightly Ready

Legend : 1.0-1.79 = Not Ready, 1.80–2.59 = Slightly Ready, 2.60–3.41 = Moderately Ready, 3.42–4.22 = Ready, 4.23–5.0 = Highly Ready

Table 1 shows that SHS learners have ready access to a functional computer or smartphone having a mean score of 3.46 which connotes for a ready accessibility to technology. The second statement shows that SHS learners have slight readiness in terms of using technology in school. For the third statement, a mean score of 2.65 signifies that SHS learners have moderately ready access to technology at home. **Table 1** also demonstrates that, with a mean score of 1.83, or "slightly ready," SHS students had somewhat ready access to a computer with online connection in the classroom. The fifth statement, which indicates that SHS students have moderate ready access to a computer loaded with search engines, has a mean score of 3.08.

The overall mean score of SHS learners in terms of Technology Access is 2.58 which relays that the learners have slight readiness towards technology. It cannot be discounted the fact that computers are increasingly being seen as useful teaching tools in schools. However, results show that SHS learners with slight ready access to technology are not being provided with opportunities and experiences to high-quality computers at home and in school which they need to have appropriate knowledge and improve their academic performance.

Furthermore, results on technology access reveals that many students still lack adequate access to computers and the internet at home and at school while technology has been recognized as a key to improve the learner's academic performance and provide school flexibility. This observation lend support to Lenhart and Madden (2005) as they claimed that many schools are still trapped in the digital era. Schools continue to have limited resources and internet connection capabilities as chip technology evolves at an exponential rate. Whereas the school is wired and has internet access does not imply that students have frequent access to modern technology, nor that all students have equitable access to contemporary technology.

Technological Confidence and Training

Table 2. Level of e-Learning Readiness of Senior High School Learners in terms of Technological Confidence and Training

Statements	Mean	Verbal Description
<i>Basic Computer Skills</i>		
I...		
1. know the basic functions of computer hardware components (CPU and monitor), including its peripherals like the printer, speaker, mouse etc.	2.57	Slightly Ready

2. know how to save / open documents to/ from a hard disk or other removable storage device.	2.67	Moderately Ready
3. comfortable with things like installing software and changing configuration settings on my computer.	2.27	Slightly Ready
4. know how to resolve common hardware or software problems or I can access technical support in case I encounter a problem.	2.11	Slightly Ready
Composite Mean	2.41	Slightly Ready
<i>Internet/Online Skills</i>		
I...		
1. can send an email with file attachments.	2.28	Slightly Ready
2. know how to surf the Internet and navigate the web.	2.38	Slightly Ready
3. know how to resolve common errors while surfing the Internet, such as “page not found” or “connection timed out”.	2.25	Slightly Ready
4. comfortable with things like doing searches, setting bookmarks, and downloading files	2.91	Moderately Ready
Composite Mean	2.46	Slightly Ready
<i>E-Learning Training Background</i>		
I...		
1. have prior training on electronic learning resources.	1.88	Slightly Ready
2. have attended online classes before.	2.60	Moderately Ready
3. have the skills to modify and add content and assessment using an online learning system	2.65	Moderately Ready
4. have attended seminars/workshops related to online learning activities	1.84	Slightly Ready
Composite Mean	2.24	Slightly Ready
<i>Social Support</i>		
I...		
1. My parents encourage me to use the internet for learning purposes.	2.81	Moderately Ready
2. My parents encourage me to use electronic devices for learning purposes.	2.52	Moderately Ready
3. My teachers encourage me to use the internet for learning purposes.	3.84	Ready
4. My friends encourage me to learn with the use of the internet and electronic materials.	2.69	Moderately Ready
Composite Mean	2.97	Moderately Ready
Overall Mean	2.52	Slightly Ready
Legend: 1.0-1.79 = Not Ready, 1.80–2.59 = Slightly Ready, 2.60–3.41 = Moderately Ready, 3.42–4.22 = Ready, 4.23–5.0 = Highly Ready		

Results in **Table 2** reveals Senior High School learners in SNHS are slightly ready to open and save documents to and from a hard drive or other portable storage devices and do fundamental computer hardware component operations. The learners are also slightly ready in terms of knowing how to fix common hardware or software issues and contact technical assistance when issues happen as well as install software and change configuration settings. Results also reveals that the total mean score for Basic Computer Skills of the respondents was 2.41 which manifest slight readiness on basic computer skills.

Table 2 also shows that SHS learners are moderately ready in doing searches, downloading of files, and sending emails with file attachments. While the remaining statements in online/internet reveals the slight readiness of learners in terms of knowledge in resolving common issues encountered when using the internet and navigating it. The overall mean of 2.46 shows the SHS learners’ slightly ready description in regard to their online/internet skills.

In terms of training experience related to e-learning, **Table 2** also shows that the SHS learners from SNHS are moderately ready in terms of having knowledge and skills in modifying

content using an online learning management as well as attendance to training on e-learning systems. Meanwhile, SHS learners have moderate readiness to attending workshops on e-learning and prior training on electronic learning resources. The overall mean score of 2.24 for e-learning training in this study manifest that SHS learners are slightly ready in engaging themselves to training related to e-learning.

In terms of social support under Technological Confidence and Training, **Table 2** shows that SHS learners readily see encouragement from teachers to use the internet for learning purposes to a great extent. The SHS learners' parents and friends are moderately ready to give social support as the learners engaged in e-learning activities. The overall mean score of 2.97 for e-learning training implies that parents, teachers, and peers are moderately ready to give social support to SHS learners.

Given the results of the study on the level of e-learning readiness of Senior High School students in terms of technological confidence and training, result shows that learners have a moderate level of readiness when it comes to the social support provided by peers, teachers, and parents, and a slight level of readiness when it comes to their basic computer skills, internet/online skills, and e-learning training background. This finding is connected to a study that Frank, et al. (2003), emphasizing that learning in a computerized and remote learning setting is even more challenging for high school students. This would be a foreseen challenge not only to SNHS but also to other schools in the country whose learners have the very least extent of technological confidence and training.

Furthermore, a study by Sawang, Newton, & Jamieson (2013) shows that those who are not highly acquainted with technology have a tendency not to engage with new technologies. Organizations may opt to implement supportive policies that could increase the rate at which e-learning is adopted. Meanwhile, according to Berteau (2009), missing basic abilities (computer and internet skills) needed by the learner in an e-learning set-up, diminishes learning efficiency. The Department of Education, therefore, must seriously consider these cited challenges to ensure the smooth and successful deployment of varied learning modalities for the succeeding school year.

Attitudes Towards a Successful Online Learner

Table 3. Level of e-Learning Readiness of SHS Learners in terms of Attitudes Towards a Successful Online Learner

Statements	Mean	Verbal Description
<i>Study Habits</i>		
I...		
1. When I have an important assignment, I get it done ahead of time	2.63	Moderately Ready
2. able to refrain from distractions and stay on task while studying	2.45	Slightly Ready
3. As a learner, I am highly independent	2.64	Moderately Ready
4. determined to stick to studies despite challenging situations	2.85	Moderately Ready
Composite Mean	2.64	Moderately Ready
<i>Ability in Engaging with e-learning Activities</i>		
I...		
1. able to express my thoughts and ideas in writing.	2.74	Moderately Ready
2. able to communicate effectively with others using online technologies.	2.71	Moderately Ready
3. take responsibility for my own learning.	3.03	Moderately Ready
4. take responsibility for staying in contact with my instructor would be easy for me.	2.45	Slightly Ready
Composite Mean	2.73	Moderately Ready
<i>Motivation</i>		

I...			
1. consider flexibility in time as an important motivating factor in taking an online class	2.24	Slightly Ready	
2. am highly motivated and enthusiastic to take an online course	2.18	Slightly Ready	
3. enjoy learning that is both interesting and challenging, and I am motivated in such situations to go beyond the minimum requirements.	2.66	Moderately Ready	
4. would be able to complete my work even when there are online distractions (e.g., friends sending emails or Websites to surf).	2.62	Moderately Ready	
Composite Mean	2.43	Slightly Ready	
<i>Social Support</i>			
I...			
1. Learning would be more effective with the use of online learning materials.	2.59	Moderately Ready	
2. E-learning would improve my learning process.	2.72	Moderately Ready	
3. Learning online saves, me money I spend on printed learning materials and transportation cost.	2.44	Slightly Ready	
4. Learning online reduces the time I spend on unproductive activities.	2.43	Slightly Ready	
Composite Mean	2.55	Moderately Ready	
Overall Mean	2.59	Moderately Ready	

Legend: 1.0-1.79 = Not Ready, 1.80-2.59 = Slightly Ready, 2.60-3.41 = Moderately Ready, 3.42-4.22 = Ready, 4.23-5.0 = Highly Ready

Table 3 reveals that under Attitudes toward a Successful online learner, SHS learners are moderately ready to practice good study habits despite the challenges encountered in the teaching and learning during the pandemic having an overall mean score of 2.64 under Study Habits. In spite of challenging circumstances, the learners often remain determined on continuing their education. They are moderately independent and have important assignment done ahead of time. Results also revealed that they are slightly distracted to stay on task while studying. Demonstrating these attitudes is an important advantage for students due to the element of flexibility, which implies that the learners can see opportunities to learn regardless of location and time (Berteau, 2009).

In terms of ability to engage in e-learning activities, respondents of this study manifest a moderate readiness in terms of displaying good abilities while engaging in e-learning activities with an overall mean score of 2.73. SHS learners are capable of writing down their ideas and thoughts, utilizing online tools to effectively connect with others, and are moderately ready to assume responsibility for their education. They are moderately ready to take responsibility in maintaining contact with their teachers. These qualities will aid SNHS-SHS learners in organizing their thoughts and activities and will encourage them in taking full responsibility in assessing the knowledge and abilities required from them (Berteau, 2009).

In terms of motivation, **Table 3** also shows that SHS learners of SNHS are slightly ready to observe an engaging and challenging instruction, and under these circumstances, are driven to surpass the minimal standards. The results also show that, despite online distractions, the respondents are moderately ready to finish their work. The SHS learners are slightly ready to attend online courses and are slightly ready to consider time flexibility as an important motivating factor in taking online courses. According to Berteau (2009), learners who are easily distracted are the ones who are not capable of adapting to e-learning. Distractions are prevalent with e-learning modality because learners are not limited by a teacher's physical presence. The overall mean score under level of motivation of SHS learners of SNHS is 2.43. This implies that the

learners have slight readiness to maintain their motivation when participating in e-learning tasks activities.

Likewise, results also reveal that SHS learners of SNHS observed moderate readiness to adopt e-learning as a valuable learning method, especially during this time of the pandemic where 100% face-to-face interaction is not yet feasible. SHS learners are moderately ready to accept e-learning as an effective learning opportunity to improve their learning process with the use of online learning materials. Results also reveals that respondents moderately agree that e-learning is an alternative to printed learning that enables them to save money and reduces time spent on unproductive activities.

From the above results, it implies that SHS learners' manifest moderate positive attitudes toward e-learning. This relates to a study stating that learners' perceived satisfaction is greatly influenced by their attitude (Sun et al., 2008). The ADKAR's model, which is one of the Change Models in organizational development explicitly provides the five building blocks for successful positive change which may be used in addressing this concern. DepEd along with its delivering schools must recognize the need in creating awareness among the learners to engage in e-learning activities at this time of the pandemic. Cultivation of the desire to engage, knowledge, ability, and reinforcement follows.

Question 2: What is the learner's academic performance in the following core subjects?

Table 4. SHS Learners' Academic Performance in Core Subjects

Core Subjects	Mean	St. Dev.	Verbal Description
Reading and Writing	82.85	3.1546	Satisfactory
Statistics and Probability	79.38	2.8816	Fairly Satisfactory
Pagbasa at Pagsusuri ng Iba't-Ibang Teksto Tungo sa Pananaliksik	81.94	4.0088	Satisfactory
Physical Science	81.82	4.6671	Satisfactory
Physical Education and Health	84.97	5.4975	Very Satisfactory
Average Grade	82.19		Satisfactory

Table 4 reveal results of SHS learners' academic performance in the five core subjects namely: Reading and Writing, Statistics and Probability, Pagbasa at Pagsusuri ng Iba't – Ibang Teksto Tungo sa Pananaliksik, Physical Science, and Physical Education and Health. It is noted that the basis for the interpretation of the data of the SHS learner's academic performance is the Policy Guidelines of Classroom Assessment for the K to 12 Basic Education Program which is stipulated in DepEd Order No. 8, s. 2015. The data show that Physical Education and Health has the highest mean score among the five core subjects with an average of 84.97%. This implies a grading scale descriptor that is very satisfactory. This indicates that learners are already able to apply on their own the acquired basic knowledge, skills, and core competencies of the concepts to practical applications at this level. Meanwhile, the average grade of SHS learners in the three core subjects that are: Reading and Writing, Pagbasa at Pagsusuri ng Iba't – Ibang Teksto Tungo sa Pananaliksik, and Physical Science are 82.85%, 81.94%, and 81.82% respectively. The data show that the grading scale descriptor in these three core subjects are satisfactory. This indicates that learners at this level have acquired the necessary core information, skills, as well as instruction with minimal assistance from teachers and peers.

Statistics and Probability had the lowest mean score among the five with 79.38%. The learners' average grade in Statistics and Probability implies that SHS learners are only at the fairly satisfactory stage in terms of the grading scale descriptor. This connotes that learners at this stage are equipped with only minimal knowledge, abilities, and key understanding, requiring continuous assistance and support from teachers as they perform the subject's authentic tasks (DepEd Order No. 8, 2015). Overall, the mean score of SHS learners in the five (5) core subjects is 82.19 which represents a satisfactory remark

emphasizing that at this level, the learners had already developed essential knowledge and skills with a little scaffolding of tasks from teachers and/or peers.

Question 3: Is there a significant relationship between the level of e-learning readiness and academic performance of the Senior High School learners?

Table 5. E-learning Readiness and Academic Performance of Senior High School Learners

Variable		r-value	p-value	Interpretation
x-intercept	y-intercept			
e-learning Readiness	Academic Performance	0.105	0.139	Not significant

*Significant at $\alpha = 0.05$

Table 5 presents the correlation between the academic performance and e-learning readiness of SNHS – SHS learners. The result shows the coefficient of correlation that is 0.105 and a probability value of 0.139, which is greater than the 0.05 level of significance. The result implies failure to reject H_0 . This indicates that there is no significant relationship in the SHS learners’ academic performance to their readiness in adapting to e-learning. Thus, no sufficient sample evidence proves that the learners’ e-learning readiness increases or decreases their academic performance. The finding is being attributed to the reason that remote learning through modular approach is still one of the ways used to continue the delivery of education during this S.Y. 2021 – 2022 with the emergent of COVID-19 pandemic. It is to say that contacting learners through phone calls especially for those students without internet access has an impact to learners as regular calls still foster a positive relationship between the teacher and the learners and facilitate easy communication about any questions or reservations they may have. In this case, e-learning readiness of SHS learners is viewed as an independent entity to their academic performance.

The alternative hypothesis stating that the learners’ e-learning readiness positively affect academic performance was rejected. It means that e-learning readiness does not predict academic performance. The non-significant correlation between e-learning readiness and academic performance of SNHS-SHS learners was contradictory to the findings of Torun (2020) which found that academic achievement is predicted by two aspects of e-learning readiness, that is motivation for e-learning and self-directed learning. Torun (2020) added that while previous research has shown a connection between academic success and readiness for e-learning, the study's findings might be different because of other underlying factors or variables such as the involvement of the participants in the study, the validity and reliability of instrument used, the setting on how and where they complied the measurement tool given, amongst others. In this research, the respondents were limited to select Grade 11 learners only and does not include the Grade 12 as another grade level in the senior high school. The tool was also given to the respondents using the online platform. The said study may potentially yield a different result had these variables were taken into consideration.

Question 4. Is there a significant difference in the Senior High School learners’ level of e-learning readiness based on the profile of the students?

Table 6. Level of e-Learning Readiness and SHS Learners’ Track and Age

Variable	n	Mean	t	p-value	Interpretation
<i>Track</i>					
TVL	148	2.49	-0.13	0.99	Not significant
Academic	54	2.49			
<i>Sex</i>					
Male	77	2.53	0.66	0.51	Not significant
Female	125	2.47			

*Significant at $\alpha = 0.05$

Table 6 presents the results between the SNHS - SHS learners' e-learning readiness to their respective Track, that is, TVL and Academic (HUMSS only). The t-value of -0.13, with the corresponding p-value of 0.99, is greater than the level of significance 0.05. This indicates that there is no significant difference between SHS learners' readiness for e-learning and the track they have enrolled in. This is to say that no sufficient sample evidence proves that the e-learning readiness of SHS learners have different levels in terms of the track that they have enrolled in. The finding is credited to the reason that e-learning readiness focuses on the learners' individual and continuous technological, lifestyle, and educational preparation. E-learning has developed to accommodate all kinds of learners, regardless of their preferred track, including those who are distance, full-time, or part-time learners (Sun et.al, 2008).

Table 6 presents the results between the SNHS - SHS learners' e-learning readiness to their gender. Results show the T – value of 0.66 with a corresponding P-value of 0.51, which is greater than the level of significance 0.05. This implies failure to reject Ho which means that no significant difference exists in the SHS learners' readiness for e-learning based on their gender. Thus, no sufficient sample evidence proves that male and female learners have different levels in their academic performance. Studies on computer management, accessibility, and skills have been conducted with the view that these features, irrespective of gender, support the use of electronic learning through computer literacy. A multi-group analysis revealed that the concept of e-learning readiness towards gender is not supported, and no significant differences were discovered between male and female in the relationships within the model (Ramírez-Correa et al., 2015).

Table 7. Level of e-Learning Readiness and SHS Learners' Age

Variable	n	Mean	F-value	p-value	Interpretation
15-17	77	2.47	1.20	0.31	Not significant
18-20	101	2.46			
21 & above	24	2.67			

*Significant at $\alpha = 0.05$

Table 7 presents the results between the SNHS - SHS learners' e-learning readiness according to their age. Results show that the F – value of 1.20 having a 0.31 probability value is greater than the level of significance 0.05. The result implies failure to reject Ho. This indicates that there is no notable age-based variation in the e-learning readiness of SHS learners. It also implies that, when SHS learners are grouped by age, there is insufficient sample evidence to suggest that they differ from one another in terms of their readiness for e-learning. In this case, e-learning readiness of SHS learners is viewed as an independent entity to their age. This infers that SHS learners can adapt to e-learning regardless of their age.

Results from previous studies suggest that there are no significant differences in the e-learning readiness between males and females and their age. It is said that gender differences regardless of age in e-learning outcomes may have been minimized in part by the widespread use of information technologies among men and women. With the non-significance of results, other approaches to identifying gender and age differences in e-learning settings might be used in future study. A sentimental analysis's gender-sensitive technique that can detect gender differences by instantly revealing feelings can also be used to investigate gender differences in e-learning (Yu & Deng, 2022).

Conclusion

The findings of this study indicated that the e-learning readiness of Sangali National High School – Senior High School learners was somewhat limited, primarily due to inadequate access to technology and insufficient training. Learners were found to be slightly ready in terms of technology access and technological confidence, owing to limited resources both at home and school. Despite these challenges,

they displayed moderate readiness in developing good study habits and engaging in e-learning, supported by social networks from parents, teachers, and peers. However, they showed only slight motivation towards e-learning activities. These results suggested that while learners were committed and showed some readiness for e-learning, there were significant gaps in technology access and training that needed to be addressed to fully harness the potential of e-learning as an alternative method of instruction.

The study found no significant correlation between the learners' academic performance and their e-learning readiness, indicating that readiness alone did not directly influence academic outcomes. This lack of correlation could have been due to several factors, including the non-inclusion of Grade 12 learners and potential limitations in the assessment tools used. Additionally, the study found no significant differences in e-learning readiness based on learners' chosen tracks, gender, or age. These findings implied that future studies should consider a more comprehensive approach, including a balanced representation of all SHS grade levels and possibly employing gender-sensitive methods. Interventions such as e-learning training workshops, intensified ICT class activities, mentorship programs, and opportunities for crash courses were recommended to enhance learners' e-learning readiness, ensuring they were better equipped to participate in online learning activities.

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