Readiness of Senior High Students in Integrating Digital Technology in The Learning Process: an Approach to Education 4.0

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Abstract. This study investigates the readiness of senior high school students for Education 4.0, employing a Descriptive-Correlational research design with a survey questionnaire administered to 337 respondents. The analysis shows that most respondents are 16 years old, with an even sex distribution and mobile phones as the main gadgets. Mobile data is the primary internet source, and many students live in rural areas without social government support. Respondents are generally well-equipped in digital skills, attitudes, and tool usage. Notably, sex affects the use of digital tools, while household income impacts overall readiness. The study highlights the critical role of teachers in promoting digital integration, showing a positive link between teachers' support and students' readiness. Recommendations include targeted teacher professional development, addressing gender-specific digital literacy needs, leveraging web-based simulation learning, and conducting further in-depth studies on students' digital technology integration experiences.

Keywords: readiness, senior high students, digital technology, Education 4.0

1 Introduction

Education 4.0, a progressive approach in response to the Fourth Industrial Revolution (IR4.0), seamlessly integrates the real and virtual worlds. This paradigm shift strongly emphasizes the effective use of digital tools, fostering meaningful student engagement [7]. Studies underscore the transformative impact of IR4.0 on employment landscapes, predicting that 65% of future jobs will be uncharted at the commencement of students' educational journeys [44, 57]. The convergence of Educ 4.0 and IR4.0 aims to equip professionals with the necessary skills for success in a global, digital professional world [58], highlighting the imperative need for digital competencies in the face of emerging job demands [44].

Empirical studies underscore the effectiveness of incorporating advanced technology into diverse educational programs. These technologies not only enhance the teaching and learning process but also foster learner engagement and enthusiasm for instructional materials [16, 19]. Recognizing the indispensable role of teachers, Secretary Briones places substantial emphasis on their pivotal role in integrating new technologies. This emphasis is further accentuated by the implementation of the Philippine National Standards for Teachers [52]. Acknowledging the dynamic landscape of global frameworks, these efforts prioritize ongoing professional development as a critical measure in preparing teachers for dynamic global frameworks, ensuring a positive and effective use of technology in the classroom.

The onset of the COVID-19 pandemic globally prompted the Department of Education in the Philippines to adopt a blended learning modality, revealing the vulnerabilities of traditional

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educational models. However, this shift was challenging, ranging from technology access to module errors, unveiling pre-existing concerns within the Philippine education system [61]. Despite these setbacks, the Department of Education remains committed to strengthening its role as a social institution. Drawing valuable lessons from the pandemic, the department acknowledges the uncertainties of the contemporary educational landscape. The phenomenon underscores how uncertainties can bring drastic changes, encouraging the possibility of more blended learning modalities and signifying an increased utilization of digital technologies in education. Hence, ensuring students' readiness to integrate technology into the learning process is critical, as it is vital for successful blended learning. The ability of students to adopt new technologies in achieving learning objectives determines their technology readiness level.

In this context, the study aims to contribute to the existing literature by exploring the readiness of senior high school students to integrate digital technology into their educational endeavors [47]. Despite substantial research on educational technology adoption [9, 22, 29, 48, 49, 51, 65], a critical research gap exists regarding the specific readiness of senior high students within the Philippine context. This scholarly investigation is motivated by the need to address this gap and provide valuable insights for educational practitioners and policymakers.

The general objective of this study is to assess the readiness of integrating digital technology in the learning process of students in District 3 Senior High Schools in the Schools Division of Baybay. The specific objectives are: (i) to describe the socio-demographic profile of the respondents in terms of Age, Sex, Gadget Used, Internet access, Total Household Monthly Income, Current Residence Location, and Beneficiary of Social Development Program; (ii) to determine the respondents' level of readiness in integrating digital technology in the learning process, in terms of respondents' digital technological skills, attitude towards using technology, and use of digital educational tools; (iii) to determine the respondents' perception on the role of teachers in enhancing students' integration of digital technology; (iv) to determine the significant difference in the respondents' readiness in integrating digital technology in the learning process when grouped according to their socio-demographic profile; (v) to determine the significant relationship between the respondents' readiness in integrating digital technology into the learning process and their perception of the role of teachers in enhancing students' integration of digital technology; and (vi) to provide recommendations for the enhancement of senior high school students' readiness in integrating digital technology in the learning process.

The results of this study can offer invaluable insights for educational practitioners and policymakers. By examining the readiness of senior high school students to integrate digital technology within the Philippines, this research provides a nuanced understanding of the challenges and opportunities in the local educational landscape.

2 Literature Review

2.1 Influence of Socio-demographic Variables on Readiness to Integrate Digital Technology in Education

The influence of socio-demographic variables on students' readiness to integrate digital technology in education has garnered attention. Age and gender, particularly among younger "digital native" students, significantly affect readiness levels due to their familiarity with technology [2]. While gender disparities persist, studies note a diminishing digital divide, emphasizing evolving trends. Beyond biological sex, gender role self-concepts contribute to disparities in digital learning experiences [65].

The availability of gadgets and internet access is pivotal in shaping students' readiness to integrate technology into education [51]. Equitable access to devices and reliable internet connectivity is crucial for effective technology integration, as limited resources hinder students' desire to use technology, even in institutions with Bring Your Own Device (BYOD) policies. Additionally, socio-economic status (SES) further complicates the scenario, with the COVID-19 pandemic exacerbating digital inequalities and creating a "homework gap" for students without high-speed internet access [29]. SES plays a critical role in accessibility, contributing to a digital divide that mainly affects economically disadvantaged students, creating challenges in accessing online materials [63].

2.2 Education 4.0 as Response to Fourth Industrial Revolution (IR4.0)

Education 4.0, a response to the Fourth Industrial Revolution (IR4.0), is a transformative approach that integrates technology into education, leveraging digital tools, mobile solutions, and advanced technologies to create an intelligent and interconnected learning environment [4, 23, 50]. This paradigm shift, influenced by Industry 4.0's unified manufacturing processes and high technology, caters to the demands of a rapidly evolving era by integrating industry and education, fostering real-world and virtual learning opportunities [1, 21, 33, 55,]. Introduced in the twenty-first century, Education 4.0 emphasizes skills development, critical thinking, and adaptability within a learner-centered, diverse, and internationally-oriented curriculum, incorporating innovative pedagogies into practical learning settings [8, 28, 39, 41]. Technology is paramount, introducing trends like personalized instruction, time-independent education, project-based learning, and innovative assessments [13, 15, 24, 36].

The advent of Industry 4.0, characterized by automation and artificial intelligence, has led to a global skills mismatch, presenting challenges like unemployment and underemployment, further intensified by the impacts of the COVID-19 pandemic and climate change. Countries, including the Philippines, grapple with addressing this skills gap, requiring collaborative efforts among the government, educational institutions, and industry stakeholders to align curricula, provide training programs, and foster partnerships for effective workforce development [42, 64].

2.3 Cultural Capital in Education

Cultural capital encompasses the skills, knowledge, norms, and values inherited through social class, significantly impacting individuals' success in the educational system. This concept extends beyond economic factors, emphasizing the ability to navigate social and educational structures successfully [5]. The influence of cultural capital in education is profound, affecting access to opportunities, academic achievement, and social mobility. Individuals with higher cultural capital have an advantage in understanding and navigating the educational system, leading to better academic performance and increased opportunities for further education or prestigious careers [20, 27, 30, 35, 61]. This advantage perpetuates across generations, contributing to disparities in educational outcomes between social classes [26].

Moreover, the relationship between cultural capital and students' readiness for digital integration in learning is complex, involving socio-cultural dynamics. The level of cultural capital, including skills, knowledge, and values, significantly influences students' engagement with digital tools [18]. Those with higher cultural capital often exhibit enhanced technological literacy and adaptability, increasing their readiness for a technology-intensive learning

environment. Conversely, students with limited cultural capital may face challenges navigating and embracing digital advancements, potentially hindering their preparedness for such a learning environment [38].

2.4 Technology, Pedagogy, and Content Knowledge (TPACK) in Education

Technology, Pedagogy, and Content Knowledge (TPACK) is an integrative educational framework emphasizing the intersection of technology, pedagogy, and content knowledge [37]. This framework highlights the importance of seamlessly integrating these domains for effective teaching. Educators with a robust TPACK framework can strategically incorporate technology to support pedagogical goals and enhance content understanding, fostering a reflective and adaptive teaching stance [31]. This holistic approach empowers teachers to navigate the complexities of modern classrooms and better prepare students for the digital age [2-3].

TPACK's significance lies in guiding educators to develop engaging and effective lessons, cultivating students' digital literacy and technological competence. Teachers proficient in TPACK can design instructional approaches that enhance students' engagement, understanding, and application of subject-specific content [10]. By promoting a balanced integration of technology, pedagogy, and content knowledge, TPACK facilitates a positive and synergistic relationship between educators' instructional practices and students' readiness to navigate and leverage digital tools effectively [31, 46].

2.5 Role of Teachers in Social Reproduction

The role of teachers in the era of Education 4.0, spurred by the Fourth Industrial Revolution (IR4.0), is pivotal in shaping the future workforce. Education 4.0 emphasizes personalized and collaborative learning experiences to align with the demands of IR4.0, requiring teachers to become facilitators of learning [14]. Teachers play a crucial role in social reproduction, nurturing professionals with interdisciplinary thinking, technical expertise, and adaptability for the globalized workplace [6]. Equipping teachers with specific competencies becomes essential in addressing the challenges posed by IR4.0 [17, 23].

In the Philippines, the Department of Education (DepEd) responds to the evolving educational landscape by committing to professional development aligned with the Philippine Professional Standards for Teachers (PPST) [54]. Implementing guidelines such as the 3-year Professional Development Priorities aims to address specific developmental needs and align with PPST standards [11]. The Basic Education Development Plan 2030 outlines a strategic framework to enhance the quality of primary education and equip Filipino students with essential skills for IR4.0, underscoring the pivotal role of teachers as catalysts for innovation and facilitators of learning in the era of Education 4.0 [12].

3 Methods

3.1 Research Design and Sampling Method

Utilizing a descriptive-correlational quantitative design, the study aimed to determine the readiness of Senior High School learners in District 3 to integrate digital technology in the learning process. Proportional stratified random sampling was employed, ensuring representative sample sizes based on Cochran's formula and considering school variations.

Table 1. Distribution of Respondents

School	Sex	Population Size	Percentage Distribution of Sample	Sample Size
Baybay City National Night High School	F	39	0.0143	5
	M	74	0.027	9
	SUBTOTAL	113		**14**
Baybay City Senior High School	F	1240	0.456	154
	M	1364	0.50	169
	SUBTOTAL	2604		
				323
District 3 SHS in the Schools Division of Baybay	**TOTAL**	2717		**337**

3.2 Research Instrument

A 20-item Likert-type survey questionnaire was designed for data collection. It included demographic details, assessed readiness, and evaluated perceptions of teachers' roles. The questionnaire underwent pretesting with ten senior high school students, ensuring reliability (Cronbach Alpha = 0.844). Before the survey, ethical measures were observed, including signed parent permits, informed assent forms for minors, and letters of permission to the school principals.

4 Data Analysis

A four-phase structure guided data collection and analysis. Phase I involved descriptive statistics for respondent profiling, presenting demographic characteristics in frequencies and percentages. Phase II used median and quartile variation for assessing readiness, attitude, and perception. Additionally, a Five-point Likert Scale was used to measure the respondents' responses regarding their agreement or disagreement with a proposition. Phase III employed the Kruskall-Wallis and Mann Whitney Test to determine significant differences in readiness across demographic groups. Phase IV utilized Kendall Tau Correlation to explore the relationship between variables.

5 Results and Discussion

5.1 Socio-demographic Profile of the Respondents in terms of Age, Sex, Gadget Used, Internet Access, Total Household Monthly Income, Current Residence Location, and Beneficiary of Social Development Program

Table 2. Frequency and Percentage Distribution of Demographic Profile of Respondents Based on Age

Age	Frequency	Percentage
16 years old	169	50.10
17 years old	90	26.70
18 years old	49	14.50
19 years old	12	03.60

20 years old and above	17	05.00
TOTAL	337	100.00

Table 2 reveals the age distribution of respondents, with 50.1% being 16 years old, followed by 26.7% at 17, 14.5% at 18, 3.6% at 19, and 5.0% at 20 and above. The result implies that the 16-year-old age group constitutes a significant proportion of the senior high school population under investigation, underscoring their importance in the study.

Table 3. Frequency and Percentage Distribution of Demographic Profile Based on Sex

Sex	Frequency	Percentage
Female	170	50.40
Male	166	49.30
Would rather not say	1	0.30
TOTAL	337	100.00

Table 3 depicts a nearly equal distribution of respondents by gender, with 50.4% females, 49.3% males, and only 0.30% undisclosed. The near parity in male and female participants suggests equal engagement, facilitating robust comparisons and revealing readiness level differences without notable gender-related biases. This equitable representation provides a clear lens to explore variations in digital technology integration readiness across genders within the senior high school context.

Table 4. Frequency and Percentage Distribution of Socio-demographic Profile of Respondents Based on Gadget Used

Gadget Used	Frequency	Percentage
Mobile Phone	329	67.60
Tablet	35	07.20
Laptop	89	18.30
Desktop	34	07.00
Others	0	00.00
TOTAL	487	100.00

Table 4 provides an overview of the types of gadgets respondents use. It indicates that mobile phones are the most prevalent, used by 67.6% of senior high school students. Laptops follow at 18.3%, tablets at 7.2%, and desktop computers at 7.0%. The absence of respondents using other gadgets is notable. This result implies that mobile phones are central to students' digital experiences, potentially influencing their readiness for digital technology integration.

Table 5. Frequency and Percentage Distribution of Demographic Profile of Respondents Based on Internet Access

Internet Access	Frequency	Percentage
Mobile Data	214	39.30
Home Wifi	205	37.70
Public Wifi	90	16.50
LAN	35	6.40

Others	0	00.00
TOTAL	544	100.00

Table 5 provides a detailed breakdown of the respondents' internet access, showcasing the prevalence of various modes among senior high school students. Mobile data emerges as the primary mode, constituting 39.3% of the total sample, emphasizing the significance of mobile connectivity in students' lives. Home Wi-Fi follows closely at 37.7%, indicating a stable and reliable internet connection within their homes. Public Wi-Fi and LAN connections represent 16.5% and 6.4%, respectively, suggesting internet access in public spaces or educational institutions. The findings imply a need for digital learning resources optimized for mobile data usage.

Table 6. Frequency and Percentage Distribution of Demographic Profile of Respondents in terms of Total Household Monthly Income

Total Household Monthly Income*	Frequency	Percentage
Less than Php 9,100 (Poor)	145	43.00
Php 9,100 to Php 18,200 (Low Income Class but not poor)	118	35.00
Php 18,200 to Php 36,400 (Lower Middle-Income Class)	41	12.20
Php 36,400 to Php 63,700 (Middle-Middle Income Class)	12	3.60
Php 63,700 to Php 109,200 (Upper Middle-Income Class)	7	2.10
Php 109,200 to Php 182,000 (Upper Income Class but not rich)	10	3.00
Above Php 182,000 (Rich)	4	1.20
TOTAL	337	100.00

**Categories of Monthly Family Income As per PSA 2015a-2017*

Table 6 unveils the distribution of respondents based on their total household monthly income, categorized according to Philippine Statistics Authority (PSA) classifications. Notably, 43.0% of participants fall within the "Less than Php 9,100 (Poor)" category, significantly representing students from economically challenged households. An additional 35.0% are classified as "Php 9,100 to Php 18,200 (Low Income Class but not poor)," emphasizing the prevalence of students with constrained financial resources. This income distribution sheds light on the socio-economic context of students in the study, indicating potential variations in their access and utilization of digital technology for learning.

Table 7. Frequency and Percentage Distribution of Socio-Demographic Profile of Respondents in terms of Current Residence Location

Current Residence Location	Frequency	Percentage
Urban	93	27.60
Rural	244	72.40
TOTAL	337	100.00

Table 7 unveils the distribution of respondents based on their current residence location, with 72.4% residing in rural areas and 27.6% in urban settings. This finding implies that students in rural settings may encounter distinct challenges, including limited access to infrastructure, potentially affecting their readiness for digital learning tools.

Table 8. Frequency and Percentage Distribution of Demographic Profile of Respondents in terms of Beneficiary of Social Development Program

Beneficiary of Social Development Program	Frequency	Percentage
4Ps	107	31.8
LGU	17	5.0
None	211	62.6
Others pls specify	2	0.6
TOTAL	337	100.0

Table 8 unveils the distribution of respondents based on their status as beneficiaries of social development programs, indicating that 31.8% are beneficiaries of the Pantawid Pamilyang Pilipino Program (4Ps), with 5.0% receiving localized educational assistance from the Local Government Unit (LGU) of Baybay City. A majority (62.6%) do not benefit from any social development program, and 0.6% fall into the "Others, please specify" category. The prevalence of 4Ps beneficiaries underscores the need to consider socio-economic support structures, potentially influencing students' access to resources, including digital technology.

5.2 Respondents' Level of Readiness in Integrating Digital Technology in the Learning Process, in terms of Digital Technological Skills, Attitude Towards Using Technology, and Use of Digital Educational Tools

Table 9. Respondents' Level of Readiness in Integrating Digital Technology in the Learning Process Based on Digital Technological Skills

Digital Technological Skills	Median	Verbal Interpretation	Quartile Variation
1. I can easily turn on the computer and navigate its operating system.	3.00	Moderately Ready	14.29%
2. I am able to find information online, use search engines, and navigate websites.	4.00	Well-Equipped	25.00%
3. I am able to do data analysis using spreadsheets and databases to collect, organize, process, and analyze real-world data.	3.00	Moderately Ready	14.29%
4. I have fast computer keyboarding and word-processing skills.	3.00	Moderately Ready	33.33%
5. I am aware of the risks of online security and privacy, and knows the steps to protect	4.00	Well-Equipped	25.00%

myself			
OVERALL	**3.00**	**Moderately Ready**	**14.29%**

Note: 1 = Strongly Disagree (SD), 2= Disagree (D), 3=Neutral (N), 4=Agree (A), 5=Strongly Agree (SA)

Table 9 unveils the respondents' digital technological skills in integrating technology into learning. The median scores and associated interpretations shed light on their competence. While basic computer operation skills receive a neutral stance (median score of 3.00) with moderate variation, online information retrieval, and navigation skills indicate agreement (median score of 4.00) with diverse responses. Data analysis skills and computer keyboarding exhibit neutrality (median score of 3.00) with inconsistent distributions. Awareness of online security risks receives affirmation (median score of 4.00) with moderate variation. Overall, the neutral median of 3.00 suggests inconsistency in perceived skills. This nuanced understanding aligns with A study, emphasizing the importance of high-tech skills in Education 4.0 [53]. Additionally, studies highlight the significance of digital literacy in enhancing readiness, reinforcing the call for interventions that foster diverse digital skills to prepare students for the evolving educational landscape [32, 34].

Table 10. Respondents' Level of Readiness in Integrating Digital Technology in the Learning Process Based on Attitude Towards Using Technology

Attitude Towards Using Technology	Median	Verbal Interpretation	Quartile Variation
1. I have a positive feeling towards using digital technology in the classroom.	4.00	Well-equipped	14.29%
2. I have the feeling that I can control the use of digital technology and be able to disconnect if needed.	4.00	Well-equipped	14.29%
3. I am confident in using digital technology in the classroom.	4.00	Well-equipped	14.29%
4. I believe that digital technology can help improve the quality of student life.	4.00	Well-equipped	11.11%
5. I am willing to enhance my knowledge of integrating digital technology in the learning process.	4.00	Well-equipped	11.11%
OVERALL	**4.00**	**Well-equipped**	**14.29%**

Note: 1 = Strongly Disagree (SD), 2= Disagree (D), 3=Neutral (N), 4=Agree (A), 5=Strongly Agree (SA)

Table 10 reveals insights into respondents' readiness to integrate digital technology into learning, specifically focusing on attitudes. The first item, "Positive feeling towards using digital technology in the classroom," obtained a median score of 4.00, indicating agreement. The second item, assessing control over technology use, also garnered a median score of 4.00, signifying agreement. The third item, "Confidence in using digital technology in the classroom," received a median score of 4.00, indicating agreement. The fourth item, related to the belief that digital technology can improve student life, yielded a median score of 4.00, indicating agreement. The fifth item, "Willingness to enhance knowledge of integrating digital

technology," obtained a median score of 4.00, indicating agreement. The median of 4.00 suggests a positive and confident attitude toward technology use. The quartile variations of 14.29% indicate some inconsistency in agreement levels among participants. Prior studies align with these findings, emphasizing a generally positive and confident outlook on integrating digital technology into the learning process [43, 53, 60, 66].

Table 11. Respondents' Level of Readiness in Integrating Digital Technology in the Learning Process Based on Use of Digital Educational Tools

Use Of Digital Educational Tools	Median	Verbal Interpretation	Quartile Variation
1. I am able to use Microsoft 365 applications Like MS Word, PPT, and Publisher Effectively to accomplish school tasks.	4.00	Well-Equipped	25.00%
2. I am able to utilize both online and offline graphics design and photo and video editing applications like Canva, Photoshop, Capcut, etc.	4.00	Well-Equipped	25.00%
3. I am able to collaborate and communicate with my classmates about school-related activities using various tools, such as MS Teams, Zoom, Google Meet, and Classroom.	3.00	Moderately Ready	14.29%
4. I am able to utilize social media applications to accomplish school activities and requirements.	4.00	Well-Equipped	14.29%
5. I am able to secure copies of my school outputs using various Cloud applications, such as OneDrive and Google Drive.	3.00	Moderately Ready	14.29%
Overall	**4.00**	**Well-Equipped**	**14.29%**

Note: 1 = Strongly Disagree (SD), 2= Disagree (D), 3=Neutral (N), 4=Agree (A), 5=Strongly Agree (SA)

Table 11 reveals the participants' use of digital educational tools. The first item, assessing Microsoft 365 applications, indicates a median score of 4.00, suggesting agreement and proficiency in academic tasks. The second item, focused on graphics design and photo/video editing applications, also yields a median score of 4.00, signifying competence in using AI-powered applications. The third item, evaluating collaboration and communication tools, shows a median score of 3.00, indicating neutrality and varied experiences. The fourth item, related to social media applications, obtains a median score of 4.00, reflecting agreement and positive integration. The fifth item, addressing cloud applications, receives a median score of 3.00, indicating mixed practices. The results imply a generally high level of readiness in using digital tools, aligning with existing research emphasizing the positive correlation between digital proficiency and favorable attitudes toward technology integration [32, 39, 45, 56]. Furthermore, the findings align with the literature, indicating the need for a nuanced approach to skills development across various aspects of digital literacy [39].

Table 12. Respondents' Overall Readiness in Integrating Digital Technology in the Learning Process

Overall Median	Verbal Interpretation	Quartile Variation
4.00	Well-equipped	14.29%

Table 12 reveals an overall readiness median value of 4.00, slightly below the "Highly Ready" threshold, indicating that students possess sufficient digital technological skills and are comfortable with technology. While they may occasionally need guidance, their ability to work independently reflects a positive outlook on their readiness for Education 4.0.

5.3 Respondents' Perceived Role of the Teachers in Enhancing their Integration of Digital Technology

Table 13. Respondents' Perceived Role of the Teachers in Enhancing their Integration of Digital Technology

Perception of the Role of Teachers	Median	Verbal Interpretation	Quartile Variation
1. I expect that my teacher will show us by example how to use digital tools and software for learning and to help us improve our critical thinking skills.	5.00	Technology Champion	11.11%
2. I expect my teacher to make sure that students have access to the digital gadgets and applications they need to learn and practice digital technological skills.	4.00	Supportive Facilitator	11.11%
3. I expect my teacher to help students think about how digital literacy affects their lives, learning, and chances of getting a job.	5.00	Technology Champion	11.11%
4. I expect my teacher to help us feel comfortable using our digital technological skills in a range of situations.	5.00	Technology Champion	11.11%
5. I expect my teacher to involve us when it comes to evaluating data and media sources, communicating, working together, and taking part in online settings.	4.00	Supportive Facilitator	11.11%
OVERALL	**5.00**	**Technology Champion**	**11.11%**

Note: 1 = Strongly Disagree (SD), 2= Disagree (D), 3=Neutral (N), 4=Agree (A), 5=Strongly Agree (SA)

Table 13 outlines the respondents' perceptions regarding the role of teachers in integrating digital technology into the learning process. The first item, focusing on teachers leading by example using digital tools and facilitating critical thinking skills, received a median score of 5.00, indicating a "Strongly Agree" response. The second item, related to teachers ensuring

students access to necessary digital gadgets and applications, obtained a median score of 4.00, indicating an "Agree" response. The third item, addressing the expectation for teachers to guide students in understanding the broader implications of digital literacy, received a median score of 5.00, indicating a "Strongly Agree" response. The fourth item, related to teachers helping students feel comfortable using digital technological skills, also received a median score of 5.00, indicating a "Strongly Agree" response. The fifth item, focusing on teachers involving students in evaluating data and media sources, communicating, collaborating, and participating in online settings, obtained a median score of 4.00, indicating an "Agree" response. Overall, the findings imply a consistent and aligned perspective among participants regarding their expectations of teachers as crucial facilitators in fostering digital literacy and technological skills. This aligns with literature emphasizing the pivotal role of teachers in digital-based learning, highlighting the need for continuous improvement in their digital skills at the senior high school level [25, 59, 62].

5.4 Significant Difference in the Respondents' Readiness in Integrating Digital Technology in the Learning Process when Grouped According to their Socio-demographic Profile

Table 14. Result of Kruskal-Wallis and Mann-Whitney Test between Respondents' Socio-demographic Profile and Readiness in Integrating Digital Technology in the Learning Process

Kruskal-Wallis Test				
Variable	Digital Skills	Attitude	Use	Readiness (Overall)
Age	0.738	0.897	0.202	0.447
Gadget Used	0.818	0.090	0.496	0.362
Internet Access	0.078	0.971	0.262	0.065
Total Household Monthly Income	0.066	0.450	0.075	**0.042**
Beneficiary of Social Development Program	0.238	0.294	0.096	0.374
Mann-Whitney Test				
Variable	Digital Skills	Attitude	Use	Readiness (Overall)
Sex	0.777	0.097	**0.017**	0.087
Current Residence Location	0.316	0.450	0.063	0.415

Table 14 reveals the outcomes of the Kruskal-Wallis Test and Mann-Whitney Test to ascertain the presence of a significant difference in respondents' socio-demographic profiles concerning their readiness to integrate digital technology into the learning process. The test results, with values surpassing the .05 threshold set for this study across all variables, lead to the retention of the null hypothesis except for between sexes and the use of digital educational tools; and between total household monthly income and the readiness in integrating digital technology in the learning process. Consequently, no significant difference is observed in respondents' readiness to integrate digital technology across socio-demographic aspects, except for between sexes and the use of digital educational tools; and between total household monthly income and the readiness in integrating digital technology in the learning process.

5.6 Significant Relationship between the Respondents' Readiness in Integrating Digital

Technology in the Learning Process and their Perception of the Role of Teachers in Enhancing Students' Integration of Digital Technology

Table 15. Result of Kendall's Tau between Respondents' Readiness in Integrating Digital Technology in the Learning Process and their Perception on the Role of Teachers in Enhancing Students' Integration of Digital Technology

Variable	Kendall's Tau	Interpretation	P-Value	Decision
Readiness (Overall) vs. Perception of Teachers Role	0.350	Low Positive Correlation	0.000	Reject the Null Hypothesis

Table 15 shows the result of Kendall's Tau between respondents' readiness to integrate digital technology in the learning process and the perceived role of the teachers in enhancing students' digital technological skills. The Kendall's Tau coefficient is 0.350, indicating a low positive correlation between respondents' overall readiness to integrate digital technology and their perceived role as teachers. The p-value is 0.000, leading to the rejection of the null hypothesis. This implies a significant relationship between students' overall readiness and their perception of teachers' role in preparing them for digital technology integration.

6 Conclusions

The study concludes that despite socio-demographic disparities, respondents exhibit readiness to integrate digital technology into the learning process. Notably, 16-year-old students, predominantly from rural areas and economically constrained backgrounds, demonstrate a strong proficiency in digital technological skills and maintain a positive attitude towards technology usage. Furthermore, the perception of students for teachers as technology champions highlights the crucial role of pedagogical support in fostering a conducive environment for digital learning. While most socio-demographic factors show limited influence on digital readiness, significant differences are observed specifically between sex and digital readiness in terms of the use of digital educational tools and between total household monthly income and overall readiness. Moreover, the study reveals a significant relationship between students' readiness to integrate digital technology into the learning process and their perception of teachers' role in enhancing students' digital technology integration.

Beyond these findings, the study's implications for understanding cultural capital in relation to digital readiness are significant. Cultural capital, comprising the cultural resources individuals acquire through socialization and upbringing, influences students' attitudes and behaviors toward technology integration. By examining the correlation between cultural capital and digital readiness, this study demonstrates how socio-cultural factors influence students' readiness to integrate technology into their learning processes and subsequently affect their educational outcomes. It emphasizes the need for educators to recognize and leverage students' cultural backgrounds to enhance digital literacy effectively. By recognizing and leveraging cultural backgrounds, educators can better support students' digital learning journeys and ensure that digital literacy efforts are inclusive and effective. The study advocates for culturally informed pedagogical approaches that promote equitable access and participation in digital learning initiatives, thus fostering inclusive educational practices tailored to diverse socio-cultural contexts, offering valuable insights for educational policymakers, practitioners, and

researchers striving to create more inclusive and impactful learning environments in the digital age.

In light of the findings, the study recommends several strategies to address the identified disparities in respondents' readiness to integrate digital technology into education. First, schools should implement gender-sensitive digital literacy programs to ensure equitable access and utilization of technology for all students, along with providing training and support for teachers to integrate various digital tools into the curriculum effectively. Furthermore, there should be efforts to allocate resources and provide financial assistance for students from low-income families to access necessary digital resources, aiming to bridge the digital divide. Moreover, in collaboration with local government units, schools should advocate for inclusivity policies and initiatives targeting socioeconomic disparities in digital readiness. Subsequently, professional development opportunities for teachers to strengthen their digital pedagogical skills should be prioritized, along with fostering a supportive environment that encourages collaboration between teachers and students in utilizing technology for learning purposes. Additionally, future research should explore additional factors influencing digital readiness, conduct studies on a larger scale to gather broader perspectives, focus on emerging teaching-learning innovations, and investigate cultural capital factors influencing digital integration in the learning process. This comprehensive approach will facilitate adapting educational strategies to the evolving digital landscape, ensuring equitable access and effective utilization of technology in education.

The study's findings have significant sociological implications, drawing on Bourdieu's concept of 'habitus' and the cultural capital theory (CCT). 'Habitus,' represented by students' readiness to integrate digital technology, is dynamic and shaped by various factors such as upbringing, family background, education, and social connections, collectively termed cultural capitals. The CCT posits that cultural capital, closely linked to habitus, is rewarded and reproduced by the educational system, mainly through teachers acting as catalysts. The low positive correlation between students' readiness and their perception of teachers' roles underscores the pivotal role of educators in fostering digital integration. Additionally, the study challenges traditional SES norms by revealing that even students from low SES backgrounds showcase significant readiness, highlighting the need to recognize diverse forms of cultural capital. The identified digital divide based on gender emphasizes the feminist critique of technology, asserting the importance of creating equitable and inclusive learning environments for all students. These findings urge interventions that value various forms of cultural capital and emphasize the role of teachers in shaping students' readiness for digital technology integration.

Conflict Of Interest

The authors declare no conflict of interest.

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"The first and greatest victory is to conquer yourself." – Plato

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