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# Accessing Students' Readiness of Online Component in a Blended Learning Environment

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**Abstract**

The inclusion of online instructions in sandwich education has made it necessary to ascertain whether or not students are prepared for learning online. Several studies have been done to evaluate this online-ready concept. However, there seems to be no evidence of learners' readiness for online components in blended Learning. This study aimed to explore factors that influence students' readiness for the online component of blended Learning. it also seeks to determine the correlations that exist between students' preferred learning modalities (SPLM) and their preparedness for engaging effectively with the online segment in a blended learning environment (OSBLE). A survey method was to assess students' online readiness for blended Learning. 2023/2024 UCC Sandwich students of Offinso College of Education center were used as a case scenario. The study found that internet access is not a significant barrier for online components in a blended learning environment. The study also showed diversity in opinions, which could stem from varying personal time management skills, different levels of familiarity with online learning environments, or differing levels of support and guidance available to students. Additionally, the study uncovered a genuine association between SPLM and OSBLE. This study recommends that institutions consider students' diverse preferences and comfort levels for the online component of blended Learning.

**Keywords:** blended Learning; Online Learning; face-to-face interaction; student readiness, sandwich program

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## Introduction

The past decade has witnessed a revolution in computer software and a swift advancement in internet technologies, which have transformed tertiary education (Tayebinik & Puteh, 2012). This has completely changed how education is delivered, especially in distant and Sandwich programs.

Colleges and universities around the world were forced to close due to the COVID-19 epidemic, with the expectation that health directors' proposals of social distancing would assist in reducing the infection rate and diminish the mortality rate from the outbreak (Alturki & Aldraiweesh, 2021). Many learning organizations have adopted the blended learning model, which combines online and face-to-face sessions between lecturers and learners. Online Learning is implemented through a Learning Management System (LMS). LMS is software owned and managed by an educational institution where lecturers post learning materials, and students log in to access the materials. The students can access tutorials, assignments, and quizzes with their lecturers/tutors.

Despite an annual growth in enrollment in educational settings, instructors and students continue to have conflicting opinions about online education programs (Alem et al., 2014). The expansion of online courses at the high level of education has outpaced traditional face-to-face (Huang, 2016; Martin & Bolliger, 2018). Online Learning is occasionally hybrid, combining some asynchronous with some synchronous interactions.

Until learners are prepared to participate in online Learning, infrastructure development alone may not be adequate to improve either access to learning opportunities or enhanced student outcomes (Panyajamorn et al., 2018). Meanwhile, there are many benefits associated with online Learning, including flexibility of study, affordability, and portability, especially for a population who otherwise would not get the opportunity to earn a degree (Northey et al., 2015; Ryan et al., 2016). Despite the benefits of online learning, there seems to be no literature on accessing students' online learning readiness in a blended learning environment.

Students offering bachelor's degrees by Sandwich under the University of Cape Coast in Ghana access part of their online and face-to-face learning (Blended Learning). The researchers of this study observed that students' attendance at online learning has always been poor compared to face-to-face attendance. The main question remains how ready are students for an online component in blended Learning? Against this background, the researchers assessed the students' readiness for Online Learning in a blended learning environment.

## Research objectives

1. To explore factors that influence students' readiness for the online component of blended Learning
2. To determine the correlations that exist between students' preferred learning modalities (SPLM) and their preparedness for engaging effectively with the online segment in a blended learning environment (OSBLE).

## Related literature review

### *Online Learning*

Online Learning uses a range of technologies such as the LMS, zoom, email, chat, new groups and texts, and audio and video conferencing delivered over computer networks to impart education. It is a type of education where students receive instruction from instructors while they are apart from them. It facilitates consistent and meaningful

communication between the students and the instructor(s), either synchronously (where students must log in and participate in class at a set time every week) or asynchronously (where students can access instructional materials at any time each week) (Davidson-Shivers et al., 2018)

*Student's readiness for the online component in a blended learning*

Numerous scholars have documented the advantages of online Learning in blended learning environments (Heidi & Neo, 2015; Doiron & Asselin, 2011; Azizan, 2010). However, there are a few notable concerns, including students' struggle to adapt to the online learning structure, access to electricity, availability of strong internet signals, access to internet-enabled computers and devices, etc.

A study by Zgheib (2019) on students' online learning readiness in a Middle Eastern higher education institution This study aimed to analyze students' readiness to learn online in a Lebanese higher education institution. Penn State University's Online Learning Readiness Survey was used to gather data from 328 students at a private higher education institution in Lebanon. Descriptive statistics and exploratory factor analysis (EFA) showed that a low percentage (31.5%) of students are willing to spend 3-6 hours per week learning autonomously online.

Another study by Adams et al. (2918) examined online readiness among students of diverse backgrounds in a leading Malaysian higher education institution. The study employed a non-experimental quantitative research design. Data were gathered from 235 undergraduate and 131 postgraduate students using the Blended Learning Readiness Engagement Questionnaire (BLREQ). The results showed differences in students' readiness for online Learning based on gender, age, ethnicity, field of study, and level of education.

Research by Adams et al. (2022) on students' readiness for e-learning during the COVID-19 pandemic in a South-East Asian university This study examines how prepared students were for online Learning in the context of the COVID-19 epidemic, with a focus on identifying any notable disparities in the preparation for an e-learning environment across students based on their gender, age, ethnicity, educational attainment, and the subject of study. The study employed a non-experimental quantitative research design. 298 undergraduate and 101 graduate students comprised the sample from which the data were taken. The results showed that most students were prepared for instruction via Online Learning. Based on their demographic profiles, additional analysis accentuated variations in the students' preparedness for online Learning.

A study was done by Koi-Akrofi et al. (2020) to determine the difficulties associated with online Learning from literature. About 35 categories or groups of research findings or outcomes from over 65 articles were examined for this investigation. The findings showed 11 challenges under six themes: lack of infrastructure, low or no IT skills, self-disciplinary problems, content issues, policy issues, and social issues.

Basar et al. (2021) did research on students' challenges in online learning. The findings indicated that the students have computers or smartphones and an internet connection at home. Besides, it was found that the ability and comfortability to use computers was high (>93%). However, their motivation in online Learning was low (41.5%) and their ability to work in a group was at a moderate level (66.7%). They also agreed that conventional teaching (face-to-face) was important for their Learning (98%). They recommended that future researchers utilize a larger sample size and students from various backgrounds to understand this issue better.

Simamora (2020) conducted a study on the challenges faced by online learning. This paper used fifteen collected data from students offering Fundamentals of Education who were involved in online learning activities. The results showed some challenges associated with online Learning, including economic conditions, anxiety during online Learning, inability to afford data, etc.,

Through a systematic literature review, Rasheed et al. (2020) conducted research to determine the difficulties in the online component of blended Learning from the viewpoints of students, teachers, and educational institutions. The study found that self-regulation and the challenges of using learning technology are the key challenges that students face. Teachers' challenges are mainly in the use of technology for teaching. Challenges in providing suitable instructional technology; and effective training support to teachers are the main challenges educational institutions face.

## Methodology

The study's respondents were three hundred and fifty (350) undergraduate students who were enrolled in the 2023/2024 Sandwich program of the University of Cape Coast at Offinso College of Education center in the academic year 2023/2024. In an attempt to gather data at a particular point in time to describe the nature of readiness of students on online components in a blended learning environment, a descriptive survey was deemed appropriate (Cohen, Manion & Morrison, 2018). A descriptive survey was primarily used to describe the nature of the research problem under study (Atmowardoyo, 2018).

### *Population and Sampling*

The study population was three hundred and fifty (350) Diploma teachers who have been enrolled in a B.Ed Sandwich program of the University of Cape Coast at Offinso College of Education center in the academic year 2023/2024. A purposive sample was employed to determine participants who have the knowledge and could speak to the study's objectives (Ritchie et al., 2014 & Cohen, Manion & Morrison, 2018).

### *Instrumentation*

An online survey was used to give participants ease of access and flexibility (Cohen, Manion & Morrison, 2018). This gave participants time to complete the survey at their convenience space. Self-developed questionnaire was designed with Google form for data collection data. The questionnaire had a 5-point Likert scale. The questionnaire was closed-ended, making it precise and focused for easy responses. It is composed of three sections. Section A was made up of demographic data. Section B consisted of Factors that Influence Students' Readiness for the Online Component in a Blended Learning Environment. Section C comprised of students' preferred learning modalities (SPLM) and their preparedness for engaging effectively with the online segment in a blended learning

### *Validity*

Validity is the accuracy of the research instruments, based on the outcome of the study. Validity occurs if the data assesses what it intends to measure (Heale & Twycross, 2015). In this study, we used both Construct validity and content validity. We therefore partitioned the questionnaire into segments to ensure that each segment measured data for a specific objective. We also gave the instrument to experts in the field of online learning to examine for clarity and correlation of the study objectives to ensure content validity.

### *Reliability*

Reliability explains the repeatability, stability, or internal consistency of a questionnaire According to Creswell (2018),. Cronbach's alpha was used to test the

reliability of the measures in the questionnaire. Creswell (2018) suggested that a Cronbach alpha of 0.7 is an indication that the data instrument is reliable. Any of the questionnaires' statements that fall below correlation coefficient of 0.7 was replaced. Hence, the instruments used were reliable.

Data collection Procedure

The link from the Google form was shared on the students' WhatsApp platform. The due ethical procedure for collecting data online was followed (Cohen, Manion, and Morrison 2018).

**Results**

Frequency and percentage were used to determine the student's demographic data from part one of the questionnaire. Mean and standard deviation were used to examine students' readiness

**Table 1. Demographics**

| Demographics | Frequency (N) | Percentages |
|---|---|---|
| **Age** | 350 | 100 |
| 20-29 years | 237 | 67.6 |
| 30-39 years | 955 | 27.1 |
| 40 and above years | 18 | 55.1 |
| **Gender** | 350 | 100 |
| Male | 186 | 53.1 |
| Female | 164 | 46.9 |

*Age of the students*

From Table 1, out of three hundred and fifty (350) students, 67.6% of the students were between the ages of twenty (20) to twenty--nine (29) years. 27% were between the ages of thirty (30) and thirty-nine (39) years old, while 55.1% were forty (40) or above years old.

*Gender of the Students*

From Table 1, out of three hundred and fifty (350) students, 53.1% were male, while 46.9% were females.

**Table 2. Access to Internet at Home**

| Do you have proper internet access at home | Frequency | Percent |
|---|---|---|
| YES | 137 | 39.1 |
| LIMITED | 75 | 21.4 |
| NO | 138 | 39.4 |
| **Total** | 350 | 100.0 |

From Table 2, out of three hundred and fifty (350) students, 39.1% of the students have access to the internet at home, 21.4% are limited to the accessibility of the internet at home, while 39.4% have no access to the internet at home.

**Table 3. Information on Internet Usage**

| Statements | SA (%) | A (%) | N (%) | D (%) |
|---|---|---|---|---|
| I am very good at using the compute for online classes | 96 (27.4) | 126 (36) | 86 (24.6) | 42 (12) |
| I am comfortable using technological skills for online learning tasks | 71 (20.3) | 156 (44.6) | 79 (22.6) | 44 (12.6) |
| Learning is the same in face-to-face and at home on the Internet. | 73 (20.9) | 125 (35.7) | 51 (14.6) | 101 (28.9) |
| I believe that online Learning is more motivating than face-to-face classes. | 126 (36) | 44 (12.6) | 34 (9.7) | 146 (41.7) |
| I can discuss with other students during Internet activities outside of face-to-face class. | 83 (23.7) | 112 (32) | 62 (17.7) | 93 (26.6) |
| I prefer working in a group during online activities than face-to-face class activities. | 80 (22.3) | 73 (20.9) | 49 (14) | 148 (42.3) |
| I feel that face-to-face contact with my instructor is necessary for Learning to occur than online Learning. | 205 (58.6) | 89 (25.4) | 23 (6.6) | 33 (9.4) |
| I am able to manage my study time effectively online and easily complete assignments on time. | 70 (20) | 116 (33.1) | 94 (26.9) | 70 (20) |
| I am comfortable combining home chores with online Learning | 121(34.6) | 70 (20) | 58 (16.) | 101 (28.9) |

From Table 3, 96 students, or 27.4%, said they were highly adept at using the computer for virtual Learning. 126 students, or 36%, said they easily utilized technology for online Learning assignments. A total of 86 students, or 24.6%, concurred that they are adept at using computers for online Learning. 42 students (12%) said they were insecure about their ability to use a computer for online study. Twenty-three students, or 20.9%, thought that Learning happened in the same way online as in person. 357 pupils, or 125 students, said they preferred in-person instruction. 51 students (14.6%) said both settings worked just as well. Of the 101 students, 28.9% felt that online Learning was on par with or superior to traditional classroom instruction. A third of the students, or 126 of them, thought that online Learning was more inspiring than in-person instruction. On this point, 44 students (12.6%) had no opinion. The assertion was disputed by 34 students (9.7%). For motivation, 146 students (41.7%) chose in-person instruction. 83 students (23.7%) who participated in online activities outside of in-person classes felt at ease conversing with other students. 32% of the pupils, or 112 people, had no opinion. 17.7%, or 62 pupils, and disagreed. A total of 93 students, or 26.6%, favored in-person conversations. In online activities, 80 students (22.3%) preferred to work in groups. Of the students, 73 (20.9%) had no preference. 49 students (14%) preferred in-person class activities. Group work was preferred by 148 students (42.3%) for online activities. Concerning the importance of face-to-face contact, students (58.6%) believed that face-to-face contact with the instructor is necessary for effective Learning. 89 students (25.4%) were neutral on this aspect. 23 students (6.6%) disagreed. 33 students (9.4%) felt face-to-face contact is not necessary. For time management, 70

students (20%) reported being able to manage study time effectively online and complete assignments on time. 116 students (33.1%) were neutral on this aspect. 94 students (26.9%) disagreed. 70 students (20%) struggled with time management in online Learning. Moreover, 121 students (34.6%) felt comfortable combining home chores with online Learning for Integration of Home Chores. 70 students (20%) had no preference. 58 students (16%) preferred separating home chores from online Learning. 101 students (28.9%) found integrating home chores with online Learning challenging.

*Research Objective 1***.** Factors that Influence Students' Readiness for the Online Component in a Blended Learning Environment?

The study investigates several factors that may influence students' readiness for the online component within a blended learning environment. The data includes responses from 350 participants on the following factors: proper internet access, the device used, the ability to manage study time effectively online, and comfort with combining home chores with online Learning. Table 4 presents the results for the factors that influence students' readiness for the online component within a blended learning environment.

**Table 4. Factors that Influence Students' Readiness for the Online Component within a Blended Learning Environment?**

| Factors | N | Mean | Std. Deviation |
|---|---|---|---|
| Do you have proper internet access at more | 350 | 2.0029 | .88767 |
| Device used | 350 | 3.53 | .994 |
| I can manage my study time effectively online and easily complete assignments on time. | 350 | 2.4686 | 1.02568 |
| I am comfortable combining home chores with online Learning | 350 | 2.3971 | 1.22976 |

From Table 4, on average, respondents reported having relatively good internet access, with a mean score of approximately 2.0. The low standard deviation suggests no significant variation in responses, indicating a consensus among participants regarding internet access. Moreover, the mean score of 3.53 suggests that, on average, participants are moderately satisfied with the device they use for online Learning. The standard deviation indicates some variability in responses, suggesting that participants' opinions on the devices used vary. In addition, the mean score of 2.4686 indicates a moderate agreement with the statement, "I can manage my study time effectively online and easily complete assignments on time." However, the higher standard deviation suggests a wider range of responses, indicating more diversity in opinions regarding this factor. Finally, participants expressed moderate comfort in combining home chores with Online Learning, as indicated by the mean score of 2.3971. The

higher standard deviation implies greater response variability, suggesting that participants have diverse opinions on this aspect.

*Research Objective 2***.** Correlations between students' preferred learning modalities (SPLM) and their preparedness for engaging effectively with the online segment in a blended learning environment (OSBLE)?"

**Table 5. The Relationship between OSBLM and SPLM.**

| **Correlations** | | | |
|---|---|---|---|
| **Variables** | | OSBLE | SPLM |
| **OSBLE** | Pearson Correlation | 1 | .369** |
| | Sig. (2-tailed) | | .000 |
| | N | 350 | 350 |
| **SPLM** | Pearson Correlation | .369** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 350 | 350 |

From Table 5, the p-value associated with the correlation coefficient is less than 0.001 (p = .000). This indicates that the correlation is statistically significant at a 0.05 significance level. The analysis is based on a sample size of 350 for both online segments in a blended learning environment (OSBLE) and students-preferred learning modalities (SPLM). A positive correlation coefficient of 0.369 suggests a moderate positive linear relationship between the online segment in a blended learning environment (OSBLE) and students' preferred learning modalities (SPLM). This implies that, as the online segment in a blended learning environment (OSBLE) increases, there is a tendency for students' preferred learning modalities (SPLM) to increase as well, and vice versa. The statistically significant p-value indicates that the observed correlation is not likely due to random chance, providing evidence that there is a genuine association between the online segment in a blended learning environment (OSBLE) and students' preferred learning modalities (SPLM).

## Discussions

The study explored factors that Influence Students' Readiness for the Online Component within a Blended Learning Environment. The study also looked at the correlations between students' preferred learning modalities (SPLM) and their preparedness for engaging effectively with the online segment in a blended learning environment (OSBLE). The study found that internet access is not a significant barrier for online components in a blended learning environment since most students' smart devices are internet-enabled. This was echoed by Adams et al. (2022). This is evident that students' readiness for online learning was high regarding proper internet access. It is also clear that proper internet satisfaction plays an essential role in students' readiness for online components in blended Learning.

Regarding the devices used for Online Learning, the study uncovered that most students experience issues or have differing opinions. This variability is due to differences in the type and quality of devices students use, such as laptops, tablets, or

smartphones, which can significantly impact the online learning experience, as Zgheib (2019) supports. Addressing these disparities by ensuring all students have access to appropriate and efficient devices is important for enhancing their readiness for the online component. Also, on managing online study time effectively, the study showed diversity in opinions, which could stem from varying personal time management skills, different levels of familiarity with online learning environments, or differing levels of support and guidance available to students. Some students may struggle with self-discipline and organization, which are critical for successful online, as opined by researchers (Simamora, 2020: Rasheed et al.,2020)

The study also provided a p-value of less than 0.001, indicating that the likelihood of this correlation occurring by random chance is very low. Therefore, we can be confident that there is a genuine association between SPLM and OSBLE. This significant p-value supports the hypothesis that students' preferred learning modalities influence their preparedness for engaging effectively with the online component of blended learning environments, as opined by (Koi-Akrofi et al., 2020). This suggests that students who engage more with the online segment tend to have specific preferences in their learning modalities.

*Challenges and opportunities*

Time management and the integration of home chores present challenges for a significant portion of students. Blended learning environments offer opportunities for students to tailor their learning experiences to their preferred modalities.

## Recommendations

This study recommends that institutions consider students' diverse preferences and comfort levels when designing blended learning programs. Providing support for time management and addressing challenges related to home chores may enhance students' online learning readiness.

## Conclusions

This study highlights several key factors influencing students' readiness for the online component in a blended learning environment. While internet access seems to be less of an issue, the variability in device satisfaction, time management abilities, and comfort with balancing home chores indicate areas where support and resources could significantly enhance students' readiness for online component in blended learning. Providing students with strategies to manage their home and study responsibilities effectively or offering flexible learning schedules could make the online component of blended learning more effective.

*Availability of data and material*

All data and material utilized in this study are available upon request from the corresponding author. Due to privacy concerns, we have anonymized all student data to ensure confidentiality.

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