# Perceived effectiveness and encountered difficulties encountered on virtual learning modality among students of a state college in the Philippines

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| Article Info | ABSTRACT |
|---|---|
| | This research aimed to identify the level of effectiveness and difficulties in online learning modality experienced by the students of Occidental Mindoro State College Mamburao Campus as well as relationship and differences between respondents' profile, perceived effectiveness and difficulties under the said modality. The study involved 339 students of Occidental Mindoro State College. The study is quantitative and descriptive in nature to which the data was gathered primarily using a self-made questionnaire distributed to the respondents via Google Forms. Findings revealed that the students' level of perceived effectiveness with regard to online learning modality is at a moderate level and deemed to be highest in terms of knowledge transfer and lacking in retention. Likewise, the students' level of difficulty in the said modality is in moderation but happened to have the highest in personal and community and least in institutional factors. On the other hand, the profile was found to have no significance with online learning's effectiveness while difficulty and effectiveness was found have profound effect with one another. Then, the profile of the respondents has nothing to do with the effectiveness of online mode of learning. Lastly, the study revealed that there is no significant difference in the perceived level of difficulty when grouped according to the students' age, sex, year level and program taken. Based from the findings, it is evident that online learning modality poses both advantages and disadvantages to learners and that the results may vary depending on various factors. From these, it concluded that online learning modality should be implemented thoughtfully and supported by robust pedagogical strategies, as needed in order to leverage the strengths of the said modality while mitigating its respective weaknesses.<br><br>*This is an open access article under the CC BY-NC license.*<br><br> |

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## 1.  INTRODUCTION

Online learning has been widely used worldwide even before the pandemic and its use has long been regarded as part of the educational system. The thirst for the use of online learning was intensified as the COVID-19 pandemic has altered the educational landscape, forcing schools to switch to online classes in place of traditional face-to-face classes. In the Philippines, the plague has impacted approximately 27 million students, 1 million teachers and non-teaching staff, as well as learners' families (Paragas, 2021). Transitioning to online learning as part of distance learning became the most viable option so far as the world continues to grapple with the effects of this infectious and deadly disease, which has destabilized economies and claimed many lives (Baticulon et al., 2020).

In order to respond to the needs of the learners, the country has implemented proactive policies for the continuance of education despite the schools' closure due to the restrictions and community quarantine imposed on many areas, particularly in the country. The Department of Education (DepEd), the Commission

on Higher Education (CHED) having a population of 3.5 million students catered by approximately 2, 400 HEIs in the Philippines have implemented online distance learning to allow students to continue their education (Oztok et al., 2013) where the teacher serves as a facilitator in online distance learning, enlisting learners' active participation through the use of various technologies accessed via the internet while they are geographically separated during instruction (Haleem et al., 2022).

Different higher learning institutions (HEIs) pivot to modified forms of online learning to concretize the government's stance to continue learning despite the pandemic (Joaquin et al., 2020). The Occidental Mindoro State College as one of the public higher education institutions in the Philippines and in the Province of Occidental Mindoro and the only one in the municipality of Mamburao need to adhere with the guidelines mandated by the order and is expected to uphold quality education despite the plague being experienced. Also, as per statement by the current Commission on Higher Education Chairman, Prospero De Vera III in accordance with the CHED Memorandum Order No. 20, Series of 2021, HEI's have already adopted a policy that "flexible learning" will continue in the current year and thereafter and will be the "new norm" and there is no going back to the old paradigm since the government has to do not want to risk the educational stakeholders if for instance another pandemic comes in and also because the government has already invested in technology, teachers' training and retrofitting of facilities for the new normal education. As a result, online learning became the "new normal" in education, and that every learner will be forced to adapt. However, online learning poses a number of difficulties for both students and teachers (Xia et al., 2022). This creates issues with regard to equity and access, as well as other impediments. Even more complicated is the fact that not every student can provide and adapt to the rapid advances in technology in today's education (Alvarez, 2020).

Presently, the locale where the research was conducted embraced the idea of online learning. However, students have been struggling to cope with the demands of online learning and it strongly suggests that the students' learning is limited due to certain circumstances. Many students and groups have called for an academic freeze as the country fights this catastrophe (Tiro & Lusung-Oyzon, 2023). Also, it is pointed out that the pandemic has affected their household budget and as a result, it has created more problems for people's accessibility, particularly for those who live in remote areas and for students from minority groups who attend the institution (Dayagbil et al., 2021). Furthermore, despite the fact that much research had been done on online distance learning prior to the pandemic, its use had yet to be thoroughly investigated due to the scarcity of resources. In addition, there is a paucity of local literature on the topic of student concentration in online classes (Amir et al., 2020).

This has prompted the researcher to conduct a study that would identify the obstacles that the students of Occidental Mindoro State College are facing in the use of virtual learning and how these challenges can be addressed by providing recommendations that may help mitigate anticipated negative outcomes. By analyzing these profile variables, the study seeks to identify factors affecting student concentration in online classes during the COVID-19 pandemic. Understanding these difficulties can serve as an "eye-opener" for the institution, highlighting the diverse needs of its students. The findings of this study may contribute to the enhancement of quality education during times of crisis, ultimately transforming the "new normal" into a "better normal" for online learning. Specifically, this study aims to students' perceptions of the extent of their experienced challenges in the online distance learning modality.

## 2. METHODOLOGY
### 2.1. Design
This study utilized a descriptive research design to determine and analyze the relationship and differences between students' perceived level of effectiveness and difficulty in the online learning modality, categorized according to their profile variables.

### 2.2. Sample
The study respondents consisted of students enrolled at Occidental Mindoro State College – Mamburao Campus in the following degree programs: Bachelor of Science in Elementary Education (BEEd), Bachelor of Science in Business Administration and Management, Major in Financial Management (BSBA-FM) and Operations Management (BSBA-OM), Bachelor of Science in Office Administration (BSOA), and Bachelor of Science in Information Technology (BSIT) during the Second Semester of Academic Year 2021–2022. To determine the appropriate sample size, the Raosoft online application was used, calculating the sample from a total student population of 2,885, with a 5% margin of error and a 95% confidence level. The study employed stratified proportional random sampling to ensure a representative selection across programs. The final sample consisted of 77 out of 646 students (22.63%) from BEEd, 115 out of 971 students (34.01%) from BSBA-FM, 32 out of 273 students (9.56%) from BSBA-OM, 34 out of 284 students (9.95%) from BSOA, and 81 out of 681 students (23.85%) from BSIT.

## 2.3. Research Instrument

A self-made survey questionnaire served as the primary instrument in this study. It was developed through a comprehensive review of relevant literature, including books, journals, articles, and online sources related to the study variables.

A 4-point Likert scale was utilized, with distinct verbal interpretations assigned to each point for both effectiveness and difficulty dimensions. The questionnaire underwent content validation by three experts in the fields of research, statistics, and grammar. Using a content validity checklist, each item was assessed for clarity and relevance. The content validity index (CVI) for both the effectiveness and difficulty domains was 1.0, indicating excellent content validity in accordance with Polit and Beck (2006).

To ensure reliability, the instrument was pilot tested with 20 randomly selected students from Occidental Mindoro State College – Mamburao Campus, who were not part of the actual study. Internal consistency was computed using Cronbach's Alpha, yielding values of 0.965 for effectiveness and 0.904 for difficulty – both indicating high reliability. Thus, the instrument was deemed both valid and reliable for data collection.

## 2.4. Data Gathering Procedure

Prior to the conduct of the study, the researcher sought approval by sending a formal letter to the concerned officials of Occidental Mindoro State College – Mamburao Campus. Permission was granted through coordination with the Campus Director and the Director for Instruction to distribute the questionnaires and collect data from students under their supervision.

Once all necessary documents were prepared, the researcher administered the survey through Google Forms. Any unclear items were clarified through online messaging. All responses were recorded, tallied, and subsequently analyzed.

## 2.5. Ethical Considerations

In adherence to Republic Act No. 10173, also known as the Data Privacy Act of 2012, all data collected were treated with strict confidentiality. Personal information was anonymized, and informed consent was obtained from all respondents prior to their participation in the study. Furthermore, ethical guidelines were followed to ensure transparency, voluntary participation, and the right to withdraw from the study at any stage. The study also adhered to research integrity principles, ensuring that findings were reported accurately and objectively, free from bias or misrepresentation.

## 2.6. Data Analysis

Frequency and percentage were used to describe students' profiles based on age, sex, year level, and program, while mean was employed to determine students' perceived levels of effectiveness and difficulty in the online learning modality. Pearson product-moment correlation analysis was utilized to assess significant relationships between variables.

# 3. RESULTS

## 3.1. Students' Perceived Level of Effectiveness of Online Learning Modality

The results indicate that students perceive online learning as moderately effective (mean=2.59). Among the different aspects assessed, retention had the lowest rating (mean = 2.44), indicating a lower perceived effectiveness in this area. However, all other factors were experienced at a moderate level [Table 1].

Table 1. Students' perceived level of effectiveness in using online learning modality.

| FACTORS | OVERALL MEAN |
|---|---|
| Knowledge transfer | 2.64 |
| Retention | 2.44 |
| Motivation | 2.63 |
| Engagement | 2.63 |
| **Grand Mean** | **2.59** |

*Scale: 1.00-1.50 Not Effective at All; 1.51-2.50 Slightly Effective; 2.51-3.00 Moderately Effective; 3.51-4.00 Very Effective*

## 3.2. Level of Difficulty Faced by the Students with Regard to Online Learning Modality

The results indicate that students experience a moderate level of difficulty in online learning modality (mean=2.75). The results show that most of the identified factors contribute significantly to the challenges encountered in online learning, with varying degrees of difficulty [Table 2].

Table 2. Level of difficulty faced by the students with regard to online learning modality.

| FACTORS | OVERALL MEAN |
|---|---|
| Technological | 2.61 |
| Personal | 2.92 |
| Domestic | 2.80 |
| Social | 2.78 |
| Institutional | 2.49 |
| Community | 2.92 |
| **Grand Mean** | **2.75** |

*Scale: 1.00-1.50 Very Low; 1.51-2.50 Low; 2.51-3.50 High; 3.51-4.00 Very High*

### 3.3. Correlates of the Level of Perceived Effectiveness of Online Learning Modality

This study found that the year level of the students is significantly correlated to their level of perceived effectiveness of online learning modality in terms of knowledge transfer (r=-.128, p=.018), retention (r=-.127, p=.019), and engagement (r=-.144, p=.008). This means the students who belong on the lower year level tend to perceive that online learning modality is effective in terms of knowledge transfer, retention, and engagement. Therefore, the first null hypothesis of the study is accepted [Table 3].

Table 3. Correlation between the demographic profile and level of perceived effectiveness of online learning modality.

| PROFILE | KNOWLEDGE TRANSFER | | RETENTION | | MOTIVATION | | ENGAGEMENT | |
|---|---|---|---|---|---|---|---|---|
| | r | p-value | r | p-value | r | p-value | r | p-value |
| Age | .036 | .508 | .025 | .653 | .025 | .648 | -.017 | .758 |
| Sex | .002 | .972 | .033 | .539 | -.023 | .679 | .017 | .759 |
| Year level | -.128* | .018 | -.127* | .019 | -.089 | .102 | -.144** | .008 |
| Program | -.033 | .545 | -.067 | .218 | -.019 | .722 | -.057 | .292 |

*\*. Correlation is significant at the 0.05 level (2-tailed).*
*\*\*. Correlation is significant at the 0.01 level (2-tailed).*

### 3.4. Correlation between the Level of Perceived Effectiveness and the Level of Difficulty Faced by the Students in Online Learning Modality

Results shows that there is a significant relationship between the level of perceived effectiveness and the level of difficulty faced by the students in online learning modality (r=.217, p=<0.001). Investigating each factor of the variables, the level of perceived effectiveness of the learning modality in terms of knowledge transfer is significantly correlated to level of difficulty faced by the students in online learning modality in terms of technological barriers (r=.392, p=<0.001), domestic barriers (r=.278, p=<0.001), and community barriers (r=.160, p=.003). On the other hand, the level of perceived effectiveness of the learning modality in terms of retention is found to have relationship with the level of difficulty faced by the students in online learning modality in terms of technological barriers (r=.348, p=<0.001) and domestic barriers (r=.187, p=.001). In addition, the results reveal that the level of perceived effectiveness of the learning modality in terms of motivation has relationship with the level of difficulty faced by the students in online learning modality in terms of technological barriers (r=.408, p=<0.001), domestic barriers (r=.270, p=<0.001), and community barriers (r=.190, p=<0.001). Finally, in terms of engagement, the level of perceived effectiveness of the learning modality is correlated to the level of difficulty faced by the students in online learning modality in terms of technological barriers (r=.395, p=<0.001), domestic barriers (r=.321, p=<0.001), social barriers (r=.118, p=.030), institutional barriers (r=.118, p=.030), and community barriers (r=.159, p=.003) [Table 4].

| EFFECTIVENESS | TECHNOLOGICAL | | PERSONAL | | DOMESTIC | | SOCIAL | | INSTITUTIONAL | | COMMUNITY | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | r | p | r | p | r | p | r | p | r | p | r | p |
| Knowledge Transfer | .392** | <0.001 | .067 | .221 | .278** | <0.001 | .080 | .143 | .025 | .649 | .160** | .003 |
| Retention | .348** | <0.001 | .004 | .948 | .187** | .001 | –.022 | .683 | .040 | .460 | .079 | .149 |
| Motivation | .408** | <0.001 | .092 | .089 | .270** | <0.001 | .104 | .056 | .084 | .122 | .190** | <0.001 |
| Engagement | .395** | <0.001 | .048 | .382 | .321** | <0.001 | .118* | .030 | .118* | .030 | .159** | .003 |

*\*. Correlation is significant at the 0.05 level (2-tailed).*
*\*\*. Correlation is significant at the 0.01 level (2-tailed).*

## 4.    DISCUSSION

The results indicate that students perceive online learning as moderately effective. These findings suggest that students find online learning particularly effective in terms of knowledge transfer, motivation, and engagement. Online learning provides frequent access to updated knowledge and fosters peer engagement and collaboration through modern digital tools, which enhance active learning (Madanat et al., 2024). However, the findings also highlight a challenge in retention, as students reported a lower level of effectiveness in this aspect. This aligns with the study of Zeglen & Rosendale (2018), which found that while online education is becoming more prevalent in higher education, retention remains a persistent challenge in online instructional methods.

Among all the factors, personal and community challenges were reported as the most significant difficulties. The abrupt shift to remote education has caused heightened stress and mental health challenges, making it difficult for students to cope with the sudden change (Mosleh et al., 2022). Community-related difficulties were largely attributed to frequent power outages, which directly impact students' ability to engage in their academic activities. Power supply issues in the province are inadequate, intermittent, and unreliable, significantly disrupting students' productivity in online learning (Owolabi et al., 2024).

In terms of domestic challenges, students reported experiencing distractions and household responsibilities, which hinder their ability to focus on online classes. Barrot et al. (2021) highlighted that studying from home exposes students to numerous interruptions, making sustained concentration difficult. Students also faced moderate difficulty due to social factors, primarily because online learning limits face-to-face interaction, reducing opportunities for peer engagement and social support. Additionally, technological barriers remain a pressing concern, as many students struggle with issues related to the digital divide – the gap between those with adequate internet access and learning devices and those with limited or no access. This digital disparity continues to affect students' participation and academic performance.

On the other hand, institutional difficulties were reported at a moderate level suggesting that schools have made necessary adjustments to support students in the new normal of education. Yuen et al. (2023) noted that while the pandemic posed inevitable challenges, it also encouraged autonomy among students and teachers. Schools have adapted by implementing resource-management strategies tailored to individual learning needs, facilitating a smoother transition to remote education.

The study shows that the length of stay in the higher education program is correlated with perceived effectiveness of online learning modality. This is in opposition with the study of Pham and Huynh (2018) which says that online learning has a favorable impact on online learning modality. However, the efficiency of the training varies depending on the program used. According to the study, computer-related programs were more effective than other business administration courses. However, other demographic variables such as age and gender of using the online learning modality had no effect on learning and transferring knowledge which is in opposition to the findings of the study of Byars-Winston et al. (2017) which revealed that the students' year level could significantly predict online learning outcomes and perceived effectiveness whereas the effect of gender on online learning outcomes and perceived effectiveness is debatable.

Lastly, it was found out that the more the students perceive that learning modality is effective, the more they experience difficulty in learning using the modality. There is a significance seen between the variables which is backed up by the study of Akpen et al. (2024) which stated that perceived effectiveness with regard to the use of online learning in the students' learning depends on their experience, positive experiences because positive results while negative causes negative outcomes. So, Mailizar et al. (2020) highlighted that the challenges and opportunities associated with e-learning must be understood conforming to diverse students' nature.

Similarly, retention, motivation, and engagement in online learning are linked to various challenges, including technological, domestic, and community difficulties. These findings indicate that for online learning to be effective, institutions need to address these barriers by improving infrastructure, providing support, and adapting teaching strategies to meet students' needs.

## 5. CONCLUSION

Based on the findings, students perceive the effectiveness of online learning as moderate, with knowledge transfer, motivation, and engagement being the most positively impacted. However, retention remains a challenge, suggesting that while online learning is effective in certain areas, improvements in instructional design, interactivity, and assessment strategies are necessary to enhance long-term learning outcomes.

The effectiveness of online learning modality may be further enhanced by the institution through providing an educational setting which can suffice learning that is tantamount to what traditional face to face classes may offer in order to achieve a higher efficacy rate. Though the difficulty is manageable, the teachers may further explore technological means in learning that requires a lesser Internet bandwidth for students who are technologically challenged to maximize resources available online and seek to establish connection

and socialization in the virtual world, make an effort to build rapport with the students' parents/guardians and find alternative ways to be done in case of technical difficulties and power interruptions. Also, students may be given "eye-opening" inputs on how they can effectively manage their time in accomplishing their school work to avoid excessive cognitive load. It is imperative that the school and its teachers continue their academic endeavors and continue to seek opportunities in online education that foster student learning amidst the plague being experienced. Despite the fact that the level of perceived effectiveness and difficulty of the students is at an average level, the school and its teachers may further amplify online learning efficacy and further alleviate level of difficulty, the school and its teachers are encouraged to provide the students with independent learning tools which would supply them additional knowledge and enrichment opportunities.

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