

## Acceptability of self-learning modules in empowerment technologies

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**Abstract:**The study determined the acceptability of self-learning modules in the subject of Empowerment Technologies. This was conducted in the two senior high schools in West Butuan District I. A total of 123 participants from both schools in school year 2020–2021 were involved in the study. Due to the current health situation brought about by COVID-19, the study used a quota sampling design in which the researcher coordinated with the academic track heads of the Senior High Schools. A validated research instrument using the Likert scale was used to measure the level of acceptability of self-learning modules in terms of content, assessment, and design. A multiple-choice test was also utilized to determine the student's performance on the subject of empowerment technologies. The study used frequency count, percent, weighted mean, and correlation for the analysis. The findings revealed that the level of acceptability of the self-learning modules in terms of content, assessment, and design was high. The respondents manifested a very satisfactory result on the examination. Also, the result showed that there was no significant effect of self-learning modules on student performance in terms of content and design. Acceptability in assessment had a significant effect on student performance. Through this, a proposed intervention program was crafted to improve the learner's academic performance.

Keywords: Acceptability, Self-learning Modules, Empowerment Technologies

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## INTRODUCTION

The unexpected surge of the COVID-19 pandemic, which stunned the whole world, created a drastic change not only in the lives of the people but also in the different sectors of a country, particularly in the education sector. This required the Department of Education (DepEd) to be innovative and resourceful in providing high-quality, accessible, relevant, and liberating free education for all. In response to the present health emergency, the Department of Education proposed the Basic Education Learning Continuity Plan (BE-LCP) to affirm that learning is continuous, and opportunities are provided to the learners in a safe manner, through different learning deliveries. Consequently, the Department of Education, thru its Regional and Schools Division Offices provided the necessary development, production, and provision of learning resources, in accordance with its mandate. The Department of Education has announced the issuances of Guidelines of the K to 12 Basic Education Program for the SY 2020-2021. This explained the different alternative learning delivery modes and appropriate resources that address the needs, context, circumstances, and diversity of learners.

As stipulated under DepEd Order No. 18, Series of 2020, the Department of Education, through its Regional and Schools Division Offices, provided the necessary development, production, and provision of learning resources in accordance with its mandate. The educational government agency issued guidelines for the K–12 Basic Education Program for the school year 2020–2021. Through this, different alternative learning delivery modes and appropriate resources

are effectively provided in order to address the needs of diversified learners amid the COVID-19 situation.

Furthermore, as mentioned in DepEd Order No. 21, Series of 2019, self-paced learning will take place at home or in another location; distant learning mode refers to a particular school's method of delivering instruction where students receive printed and digital resources. Although the innovative learning modality for teachers because materials were digitally accessed and directly given to the learners to bring home, different challenges came about due to the fact that supervision was carried out by the parents or guardians who were not trained for the job. It was proven by Guiamalon et al. (2021), that while parents and guardians could assist learners in using the new learning modality, some guardians find it difficult to facilitate and explain the modules available to the learners.

Nevertheless, despite the plethora of research studies that have emerged giving informative information about distance learning modalities, the level of acceptability was not targeted so that this study was conceptualized attempted to measure the level of acceptability of the self-learning modules and their significant association with the students' performance in the subject area of Empowerment Technologies at Libertad National High School and Consuelo National High School for the school year 2020-2021. This study aimed to provide useful information that would serve as context-based clues on what further methods and intervention programs could be proposed to the Department of Education during an emergency to ensure quality education in different areas across the Philippines.

### *Problem Statement*

This study attempted to determine the acceptability of Self-Learning Modules in Empowerment Technologies. It sought to answer, specifically, the following queries:

1. What is the level of acceptability of the Self-Learning Modules in the Empowerment Technologies as perceived by the students with respect to:
  - 1.1 Content;
  - 1.2 Assessment; and
  - 1.3 Design?
2. What is the level of student performance in Empowerment Technologies of the learners?
3. Is there a significant association between the level of acceptability of Self-Learning Modules and the level of student performance in Empowerment Technologies?
4. On the basis of the results, what intervention program may be proposed?

### *Theoretical framework*

This study was anchored on two theories, namely: John Sweller's Cognitive Load Theory and Jerome Bruner's Constructivist Theory.

The first theory underpinning the research study is the Cognitive Load Theory. This theory suggests the idea that learning happens best under conditions that are aligned with human cognitive development. The instructional learning materials and resources crafted by the teachers depend on how well students learn the subject. In other words, if the instructional materials are designed to be cognitively complex, learners will need help to absorb such materials. Sweller, in 2011, "*human beings possess a limited capacity for working memory and, if presented with information that exceeds this capacity, information overload occurs*".

In crafting learning materials for self-learning modalities, teachers should be flexible in generating and formulating the content, assessment, and design of instructional materials for the learners. One example is to have clear and concise instructions in the text, as distance learning has hampered the teacher's ability to facilitate the learners personally. This author's concept is more significant in guiding the teachers in creating the content, assessment, and design of the subject to avoid cognitive complexity for the learners. It has been proven by Sweller (2011) that the quantity of information that can be stored in human memory at any given time is limited; thus, to optimize learning, instructional strategists should avoid overloading it.

The second theory underpinning the research study is the Constructivist Theory. This theory explains that learners can learn best from experience, which means that learning is an active process, and learners can develop new ideas based on their own experiences, thoughts, or concepts. Learners rely on their understanding to come up with relevant information they need regarding their current situation. One example, amidst the virulence of COVID-19, is modular distance learning, which is one of the modalities implemented by the Department of Education. The use of a self-learning module with a learner-centered approach would help learners develop new ideas from the module.

Borich and Tombari (2004) described that “*constructivism is an approach to learning in which learners are provided with the opportunity to construct their sense of what is being learned by building internal connections or relationships among the ideas and facts being taught*”. As elaborated by Kemp and Smellie (1989), individual learning has a huge impact on the implementation of modular instruction. Its main attributes include taking responsibility for his or her own learning, progressing with the topics and activities, and learning at their own pace, as cited by Lim (2016). This principle is comparable with Thorndike's law of readiness and law of effect (1930) where the law of readiness proves that once a person is ready to respond or act, giving the response is satisfying, and prevented from doing so is annoying.

To simplify, Cognitive Load Theory relates to the study that in crafting instructional materials for the self-learning modalities, overloading in formulating content, assessment, and design would lead to cognitive complexity for the learners. On the other hand, Behaviorist Theory relates to the learner's behavior in the current situation. It is how the experience develops the character of students while working independently with autonomy, acquiring knowledge, and skills through self-learning modality methods.

## METHODOLOGY

### *Research design*

The study used a descriptive research design that used the validated questionnaire. It described the data gathered from the participants on the acceptability level of the distributed Self-Learning Modules used by the learners in the subject Empowerment Technologies. It is also descriptive because it determined the significant effect of the acceptability of the Self-Learning Modules on student performance in the subject Empowerment Technologies with the use of appropriate descriptive statistical treatment to arrive at drawing conclusions.

### *Locale of Study*

This study was conducted in two (2) high schools of West Butuan District I, Division of Butuan City, offering the Senior High School curriculum. These schools are the Consuelo National High School, the current station of the researcher and the Libertad National High School.

The Consuelo National High School, located in Brgy. Dumalagan, Butuan City, offers a complete junior and senior high school curriculum. It has a total population of 68 Senior High School Grade 11 and Grade 12 students with 13 teachers.

The Libertad National High School is located in Brgy. Libertad, Butuan City. It is one of the populated high schools of Butuan City, with a total population of 620 Senior High School Grade 11 and Grade 12 students and with 97 teachers.

#### *Respondents of the study*

The study involved a population of 411 Grade 11 students who are distributed in the two high schools of West Butuan District I, Butuan City Division. The research used quota sampling design in identifying the participants of the study, where the first 10 parents of Consuelo National High School who went to the school for the distribution of the Self-Learning Module were identified as the student participants of the study. A similar process was carried out with Libertad National High School, where 113 students were taken as participants of the study.

#### *Selection and Description of Respondents*

Due to the current health situation brought about by COVID-19, the study used a quota sampling design in which the researcher coordinated with the senior high school academic track head of Libertad National High School to identify the Grade 11 advisers of the said school for the selection process of the 113 participants. The researcher sent a link to the grade 11 advisers to be sent to their respective students. The first 113 students to answer the online survey questionnaire and the summative test were the participants of the study for the said school. The same procedure was applied to Consuelo National High School, which has a total of 123 students in which the first 10 students who answered and submitted the online questionnaires were the participants.

#### *Data Gathering Instruments*

The researcher used two sets of validated research instruments. The first set was a student evaluation of module in empowerment technologies in terms of content, assessment, design. It was measured using the Likert scale: 5 – Strongly Agree; 4 – Agree; 3 – Uncertain; 2 – Disagree; and 1 – Strongly Disagree. The second set of Research Instrument was the 1<sup>st</sup> Quarter Examination in Empowerment Technologies, containing 30 test items in the multiple-choice format.

#### *Data Gathering Procedure*

Upon approval of the thesis proposal by the thesis evaluation committee, the researcher asked permission through a letter of request to the school principals of the two high schools in West Butuan District I to allow the researcher to conduct the research survey questionnaires to gather data needed for the current study.

The approval of the school principal allowed the researcher to conduct the survey questionnaires to the participants. The researcher closely coordinated with the adviser for the necessary instructions on the online test examination and the survey questionnaire to the participants who answered the said instruments. The researcher retrieved the data online for tabulation and analysis.

### *Data Analysis Procedure*

The study employed various statistical treatments to analyze the data. Frequency count was used to identify the number of students who perceived the acceptability of the Self-Learning Modules (SLMs) in Empowerment Technologies and who took the first quarter test. Percentage complemented this by converting frequency counts into proportional values out of 100. Weighted mean was applied to assess students' evaluations of the SLMs in terms of content, assessment, and design. Lastly, correlation analysis was used to examine the relationship between the acceptability of the SLMs and the students' academic performance in Empowerment Technologies.

## DISCUSSION OF FINDINGS

### *The Level of Acceptability of the Self-Learning Modules in the Empowerment Technologies as Perceived by the Students with Respect to: Content, Assessment, and Design*

The findings of the study reveal that the Self-Learning Modules (SLMs) in Empowerment Technologies were generally perceived as acceptable by students across three key aspects: content, assessment, and design, though certain areas showed room for improvement.

In terms of content, students agreed that the modules were challenging (e.g., "I found this module challenging"), which aligns with Nardo (2017) who emphasized that modular learning fosters independent study. The tasks were seen as well-structured to reflect increasing complexity, helping deepen student understanding. However, some students were uncertain about whether the content was intellectually stimulating, indicating that parts of the modules may have been too easy, suggesting a need for content enhancement based on student capability and chosen learning modality (Design Teach Engage, 2021).

With regard to assessment, the overall weighted mean indicated a high level of acceptability. Students particularly agreed that the assessments contributed to their learning, suggesting that the evaluations were relevant and effective in improving knowledge and skills. This supports Cox et al. (2021), who noted that well-designed assessments provide indicators of student learning and motivation. However, some students were uncertain about the clarity of the assessment and feedback mechanisms, which may indicate gaps in communication or structure that hinder their ability to fully understand expectations.

In the aspect of module design, students appreciated the clear and motivating language, which helped maintain their interest. The structure and challenge level were also rated positively. However, students were uncertain about the sufficiency and quality of learning resources provided, indicating a lack of support materials that could enrich understanding. This reinforces Burge's (2019) point that effective modules must include well-defined goals and appropriate learning resources to address learning needs and support lifelong learning skills.

In conclusion, while the SLMs in Empowerment Technologies were largely acceptable to students in terms of content, assessment, and design, areas such as intellectual stimulation, feedback clarity, and learning resources require improvement to better meet student needs and optimize independent learning.

### *The Level of Student Performance in Empowerment Technologies of the Learners*

The percentage distribution of students' performance in the Empowerment Technologies test. The majority, 66%, achieved a very satisfactory result, followed by 15% with fair, 14% with satisfactory, and only 5% reaching an outstanding level. These results suggest that the assessment

tasks were appropriately aligned with the students' capabilities. This supports the assertion by Calhoun et al. (2021) that learning evaluation is an essential, ongoing component of instructional development. When students are able to master the module content and perform well in assessments, it indicates the effectiveness and success of the learning program.

*The Significant Association between the Level of Acceptability of Self-Learning Modules and the Level of Student Performance in Empowerment Technologies*

The study reveals a significant association between the level of acceptability of self-learning modules and student performance in Empowerment Technologies, particularly in the aspect of module assessment. The correlation analysis showed a beta coefficient of 2.700 with a p-value of 0.019, indicating a statistically significant relationship and leading to the rejection of the null hypothesis for this variable. This suggests that well-crafted assessments within the modules effectively matched the students' abilities, contributing to their very satisfactory performance in the subject.

In contrast, module content ( $\beta = -0.746$ ,  $p = 0.510$ ) and module design ( $\beta = 0.078$ ,  $p = 0.927$ ) showed no significant influence on student performance, as their p-values exceeded the 0.05 threshold. Therefore, the null hypothesis is not rejected for these variables, indicating that while students may have found the content and design acceptable, these elements did not directly impact academic outcomes.

The findings highlight the critical role of assessment in modular distance learning, as it directly affects students' knowledge and skill development. This supports Fletcher et al. (2019), who emphasized that assessment informs student learning, teaching effectiveness, and institutional accountability. Similarly, Tosuncuoglu (2018) stressed that assessment is a vital component of education, enabling teachers to gauge performance, provide feedback, and adjust instruction to meet learners' needs effectively.

## CONCLUSION

Based on the findings, the study concludes that the Self-Learning Modules (SLMs) in Empowerment Technologies were highly acceptable to students in terms of content, assessment, and design, making them a viable alternative learning delivery mode during the pandemic as endorsed by DepEd. The students' performance in the subject was aligned with the level of difficulty presented in the modules, indicating appropriate instructional design. A significant association was found between module assessment and student performance, confirming that well-structured assessments matched learners' abilities and contributed to their very satisfactory achievements. In response, a proposed intervention program was developed to further enhance learning outcomes through targeted activities and strategies that address identified areas for improvement.

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