

Research

Development of Offline E-Modules to Improve Learners' Academic Performance in Disciplines and Ideas in the Social Sciences

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Abstract

As the education system in the Philippines has adapted to distance learning due to the global pandemic, self-learning modules also have become the primary learning resources of the learners. However, many modules distributed to learners were criticized due to erroneous content, level of difficulty, number of tasks, and printing costs. Meanwhile, there was a lack of modules for specialized subjects in some public senior high schools. In this regard, this study attempted to develop and validate offline yet electronic modules in one of the specialized subjects in senior high school, Disciplines, and Ideas in the Social Sciences (DISS).

In developing these, the study used the Normative Design and Analysis, Design, Develop, Implement, and Evaluation (ADDIE) model. Twenty (20) Social Science and five (5) ICT teachers in the Division of Biñan City were asked to validate the developed e-modules, while thirty (30) learners from Biñan Integrated National High School were asked to participate in the Implementation Phase. An adopted questionnaire was given to the validators to assess the e-modules' validity and acceptability, while pretests and post-tests were given to the participating learners. Through the ADDIE model, the study was able to design and develop offline e-modules named Disciplines and Ideas in the Social Sciences Knowledge-Amplifying Remote Training E-Modules (DISSKARTE). Using the four-point Likert Scale and the simple mean, findings revealed that its objectives, concepts, topics, directions, exercises, and reflections were all highly valid. The findings showed that its functionality, accuracy, suitability, usability, and efficiency were all highly accepted. Pretest results showed that most of the participants did not meet expectations while the post-test results revealed otherwise as the majority got outstanding and very satisfactory remarks. T-test for dependent means revealed that there were significant differences in the pretests and post-tests. This implied that through DISSKARTE, the learners' performance on DISS could improve.

The study is limited to developing e-modules covering only a quarter of DISS subjects. However, it is hoped that the study was able to contribute to the world of literature as there were only a few to zero studies about developing instructional materials for DISS, especially in the context of the new normal.

Keywords: *offline e-modules, instructional materials, development and validation, Disciplines and Ideas in the Social Sciences*



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INTRODUCTION

As coronavirus disease (COVID-19) is continuously affecting the world, the education system is also dramatically changing. Seemingly, face-to-face learning became difficult because of the threat of the virus. However, to uphold the continuity of learning amidst the pandemic, a major paradigm

shift to the so-called “new normal education” was observed among schools. Millions of teachers and learners have adapted to different types of distance learning modalities such as online distance learning, modular distance learning, blended learning, and TV and Radio-based instruction. In the Philippines, the Department of Education (DepEd), as emphasized by Dangle and Sumaoang (2020), disclosed that modular learning emerged as the most preferred among distance learning modalities. It came as no surprise as many Filipino families with distance learners struggle with Internet connection.

Under modular modality, DepEd, as explained by Hernando-Malipot (2021), stated that self-learning modules shall be the primary learning resources. However, DepEd pointed out that these modules should undergo evaluation first to check their conformance to the quality standards for learning resources. Nevertheless, Adonis (2021) reported that as early as the first few days of the school year 2020-2021, a lot of modules have already been criticized for having erroneous content. Aside from errors, Adonis (2021) mentioned that there were also modules distributed that were beyond the students' level of proficiency and contained too many activities. This pushed some parents to accomplish the tasks assigned to their children. On top of these problems, Pangasinan educators mentioned in the Manila Times (2020) that the expense of reproducing and distributing the printed modules was high, which led some teachers to dip into their own pockets as the funds available to schools and teachers for the purpose were fully exhausted.

Furthermore, it was reported that many senior high schools in the Philippines are also struggling when it comes to conducting modular distance learning due to the insufficiency of official self-learning modules— both printed and digital— distributed for specialized subjects.

Meanwhile, Local Government Units have partnered with the Department of Education to provide tablets to students (Biñan City Information Office, 2021). Through this, modules in digital format became more accessible among public senior high students in Biñan City. Also, Education Undersecretary Diosdado San Antonio stated that DepEd would discourage students with gadgets from getting self-learning modules (Hernando-Malipot, 2020). For the succeeding grading period or quarters, DepEd was looking at the possibility that students with gadgets shall just use modules in digital format instead of printed ones.

While self-learning modules in digital format or “e-modules” may answer the problem of the high cost of paper, it may also let the students experience multiple modalities such as visual, auditory, reading, and by doing. With its digital nature, an e-module can be transformed into interactive instructional material wherein the developer/s may include instructional videos, gamified assessment, and an automated feedbacking system into it. After all, as suggested by Fotjik (2018), instructional materials distributed to remote learners that contain solved examples, video tutorials, and video lectures in the instructional materials can ensure the quality of learning.

The principal researcher, who is currently teaching in one of the public senior high schools in the Philippines and has been teaching Social Studies and Social Science subjects for six years, has seen all the facts mentioned above as both a calling and an opportunity to conduct a study on developing offline e-modules for one of the specialized subjects he is currently teaching, Disciplines and Ideas in the Social Sciences (DISS). For accessibility and interactivity reasons, the modules developed in this study were both offline and in electronic format. Hence, this would serve as a response to the present challenges of his students, especially in terms of coping up and meaningfully understanding the lessons while having no internet connection. Overall, it is hoped that the developed e-modules that can truly respond to the learner's educational needs and can

enhance their academic performance. After all, this kind of responsive and innovative instructional material is what the education system needs, especially now that the world is in the new normal.

This study aimed to develop and validate offline E-Modules in Disciplines and Ideas in the Social Sciences that is aligned to the standards (Most Essential Learning Competencies or MELCs) set by the Department of Education in the new normal. In detail, the following were the determined purposes of this study:

1. design and develop MELCs-aligned offline E-Modules in Discipline and Ideas in the Social Sciences;
2. establish the content validity and acceptability of the designed MELCs-aligned offline E-Modules in Discipline and Ideas in the Social Sciences; and
3. evaluate the designed MELCs-aligned offline E-Modules in Discipline and Ideas in the Social Sciences based on the Pretest and Posttest Performance of HUMSS (Humanities and Social Sciences) Students.

This study followed the principles set by Behaviorism, Constructivism, and Programmed Instruction Learning. Behaviorism, according to Lardizabal et al. (2005, as cited in Catuday, 2019), is based on the idea that changes in the behavior of an individual are the result of his response to events (stimuli) happening in the environment. In this study, it was presumed that the performance of students in Disciplines and Ideas in the Social Sciences (response) would be greatly affected by the teacher and the kind of instructional materials (stimuli) used.

Moreover, the study was underpinned by Constructivism. Specifically, the study is supported by the Constructivist educational theory of John Dewey. Dewey (1887, as cited in Catuday, 2019) explained that the acquisition of skills requires "learning by doing." In addition, Dewey believed that people learn by doing and reflecting on what they do. This philosophy was applied in this study as it aimed to develop instructional material that lets the learners gain skills and construct ideas while engaging in practices or exercises and solving problem activities.

Moreover, the study was anchored on a more specific educational behaviorist model called Programmed Instruction Learning. According to Britannica (2018), programmed instruction is a self-paced, self-administered educational instruction presented in a logical sequence. Burrhus F. Skinner (1954, as cited in Mekonnen, 2020) defined his originally developed 'programmed instruction' as a process of directing students by means of reinforcing their responses given to teaching materials in a manner of small progress. He believed that programmed instruction reinforces a suitable behavior of a student. Hence, the offline e-modules developed and validated in this study were based on its principles, which EduGyan (2017) enumerated as follows: Principle of Small Steps, Principle of Active Responding, Principle of Immediate Reinforcement, Principle of Self-Pacing, and Principle of Continuous Evaluation.

LITERATURE REVIEW

Tatel (2016), Dela Cruz et al. (2016), and K to 12 Basic Education curriculum guide all agreed that DISS as a specialization subject covers the fundamental concepts, subjects, and methods of inquiry in the disciplines that systematically study the society as well as influential Filipino thinkers and ideas in these disciplines and relates these ideas to the Philippine setting and current global trends. This description remained the same even if the DepEd adapted to MELCs for the school year 2020-2021. But more than just complying with the prescriptions of

DepEd, Smith (2017), Middlemass (2020), and The Asian School (2020) all believed that learning social science was important as it could help learners to understand more the society and engage with the wide variety of social institutions that shape human lives. These ideas were helpful to the study as these suggested what contents must be considered and included in a DISS instructional material. Moreover, the study considered what curriculum DepEd has implemented for the school year.

Pre-pandemic studies such as in Ambayon (2019), Padmapriya (2015), Cramer et al. (2018), and Dangle and Sumaoang (2020) claimed that modular (offline) approach has a positive effect on the performance of the students and encourages independent study. However, in the new normal, Dangle and Sumaoang (2020), Hernando-Malipot (2021), Estrada (2021) all mentioned how challenging offline learning has been in the Philippines. Some of the challenges mentioned here were the great number of activities, lack of printed modules, and too much reliance on MKOs. The benefits and challenges of offline learning approach mentioned were highly considered by the study as the developed e-modules in the study also catered offline learning.

E-Modules, being one of the instructional materials utilized in the new normal, was characterized by Ghazali et al. (2020), Wijaya and Vidiанти (2020), Rini, et al. (2020), Mulhayatiah et al (2019), and Linda et al. (2020) as beneficial learning material to learners for having multimedia and interactive element. Nevertheless, the instructional material's effectiveness, as well as validity and acceptability, lies in its quality. In this view, Chia et al. (2017), Kurt (2020), Tomlinson (1998, as cited in Marjanovikj-Apostolovski, 2019), Hainsworth and Keyes (2016), all mentioned what to consider in creating an effective, valid, and acceptable e-module. The concepts and ideas mentioned in these studies were used as one of the considerations of the study in developing an e-module although the study differed a bit, especially in terms of mode (offline), subject-matter (DISS), and context (new normal).

As the new normal has gone digital, teachers, as much as modalities and instructional materials, also play a huge role in the new normal education. Saxena (2020), Patterson (2020), Ferri et al. (2020), stated how important teachers were in the learning process, although the new normal was not requiring their physical presence. However, Mayol (2020), Plitnichenko (2020), and Canadian Commission (2020), all agreed that the new roles of teachers in the new normal were such a great challenge for them, especially now that everything was digital. The study found these ideas relevant as these imply how important the knowledge in selecting and/or developing digital instructional material was on how teachers perform their role in the new normal.

As to what model to be used in developing a programmed instruction such as modules, Rogayan and Dollete (2019), Anunobi, et al. (2017), and Luzano (2020) all suggested that the ADDIE model creates effective material due to its clear and specific nature. Since this study developed a programmed instruction, which was offline e-modules, the ideas found in the mentioned literature served as its guiding light.

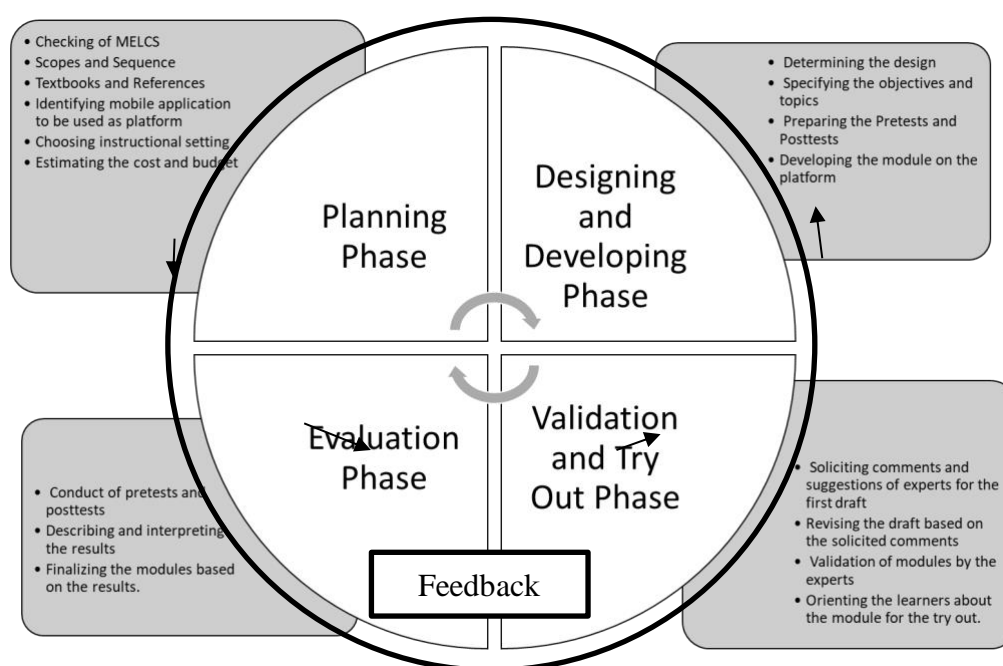
RESEARCH METHOD

The study utilized a Normative Research Design. According to Parker, Sankar, Boyer, McEwen, and Kaufman (2019), normative research aims at improving upon existing design

practices, towards a new method for how design should be done by developing an activity or a new product. In this light, the study used Analysis, Design, Develop, Implement, and Evaluate (ADDIE) as the development model. According to Widyastuti and Susiana (2018), ADDIE is one of the systematic learning design models in developing learning materials. The model was chosen because of its structured stages and systematic sequence of activities suitable for creating an instructional material that may solve learning problems related to learning resources, needs, and characteristics of students. The ADDIE Model steps were applied in this study as visually presented in Figure 1.

Figure 1

ADDIE Model (Planning, Designing and Developing, Validating and Try-Out, and Evaluating, and Finalizing Phases)



As shown in Figure 1, the paradigm contains four connected phases that represent the stages and steps the study followed for the development and validation of Offline E-Modules for Disciplines and Ideas in the Social Sciences.

The first of which is the Planning Phase, the stage that corresponds to the Analysis Phase of the ADDIE model. Following this stage is the Designing and Developing Phase, a merged phase congruous to the Design and Development Phases of the said developmental model. Afterwards, the Validation and Try out Phase, which is comparable to the Implementation Phase, comes next. Finally, the last stage is for the Evaluation Phase, the phase that is in congruity to the phase of the same name in ADDIE.

Moreover, to establish the content validity and acceptability as well as to evaluate the designed offline e-modules, this study used quantitative methods. The content validity and acceptability of the offline E-Modules for the subject DISS was quantified through the process of validation of the Social Science and ICT teachers. In the validation process, the validators were asked to answer two (2) adopted questionnaires: one for content validity and another for

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acceptability using a 4-point Likert Scale. Furthermore, to evaluate the designed offline E-Modules, one group of Grade 11 students were chosen to try out the newly designed instructional material and then asked to take the five (5) sets of pretest and post-test embedded on the material. All numerical data were collected, tallied, and interpreted for further discussion, evaluation, and revision of the developed instructional material.

The study was conducted in public senior high schools in the Division of Biñan City. The study was conducted in this area due to its accessibility to the researchers. The principal researcher, a senior high school Social Science teacher, currently works in one of these schools, Biñan Integrated National High School (BINHS). The researcher used a purposive sampling for the Social Science and ICT teachers in public senior and integrated high schools in Biñan City. Only those teachers who are teaching Social Sciences in senior high school and ICT teachers were considered as validators. In total, the teacher-validators were composed of twenty-five (25) teacher-validators: twenty (20) Senior high Social Science teachers and five (5) ICT teachers from five (5) public senior and integrated high schools in Biñan City for the school year 2021-2022. In the Try-Out Phase of the study, thirty (30) Modular Distance Learning (MDL) student-respondents from one section in 11 HUMSS strand in BINHS, which is the advisory section of the principal researcher, were considered in the study.

In validating the Offline E-Modules in Disciplines and Ideas in the Social Sciences, the study adopted the questionnaire of the thesis titled "E-Learning Mobile Application for English 8: Streamlining Strategy for Effectual Pedagogy (2018)" by Pamela B. Rodelas. The instrument, which was adopted from a similar study, is composed of two parts: one that measures the content validity and another for acceptability of the Offline E-Modules. Part 1 assessed the validity of the Offline E-Modules in terms of objectives, concepts, topics, directions, exercises, and reflection. Part 2 assessed the acceptability of the Offline E-Modules in terms of functionality, accuracy, suitability, usability, and efficiency.

To interpret the assessment of the respondents, a 4-point Likert scale was applied. The scale was interpreted as follows:

Four-Point Likert Scale

No.	Scale	Level of Validity	Level of Acceptability
4	3.25- 4.00	Highly Valid (HV)	Highly Accepted (HA)
3	2.5- 3.24	Valid (V)	Accepted (A)
2	1.75- 2.49	Partially Valid (PV)	Slightly Accepted (SA)
1	1.00-1.74	Not Valid (NV)	Not Accepted (NA)

Moreover, the student-respondents' performance was also measured through pretests and post-tests embedded on the developed offline e-modules. The results of the performance were scaled and verbally interpreted using the Levels of Proficiency based on DepEd Order No.8, s. 2015.

Levels of Proficiency

Level	Percent
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Outstanding	90-100
Very Satisfactory	85-89
Satisfactory	80-84
Fairly Satisfactory	75-79
Did Not Meet Expectations	Below 75

Although the questionnaire was already used in a previous study, revalidation was still sought to make sure that it would fit to the current study. The adopted questionnaire was revalidated by three (3) SGS Professors in LCBA. After the revalidation, some items have undergone minor revision, while the rest were retained. Moreover, Cronbach's Alpha was used to test the reliability of items. The test showed Cronbach's Alpha coefficient of 0.851 for the content validity part while 0.846 for acceptability part, which means that the instrument has a very good reliability (Ahdika, 2017).

Before gathering the needed data, a letter was sent to the Office of the Schools Division Superintendent in the Division of Biñan City to request the division the authority to gather the needed data from the respondents. Upon receiving the endorsement letter from the office of the superintendent addressed to all school heads, the time for distribution and data-gathering from the respondents was arranged. After the completion of all the requirements, the data, with the assistance of a statistician, was tabulated, analyzed, and interpreted. After the conduct of statistical treatments to research data, the final draft of the research manuscript was written.

The study was participated voluntarily by the students. The consent of the respondents was asked by the researcher explaining to them the importance/significance and objectives of the study. The data and information gathered were kept confidential. In addition, the questionnaire was designed to collect only the relevant information for the study, and there were no private or personal questions asked from the respondents. The works of other authors and researchers were properly recognized.

Statistical treatments were applied to the study using Statistical Package for the Social Sciences (SPSS) such as: Frequency, percentage, Likert scale, and simple mean to determine the level of validity and acceptability of the Offline E-Modules in Disciplines and Ideas in the Social Sciences; and t-test for dependent means to identify if there would be a significant difference in the performance of Grade 11 DISS learners in their pretest and post-test.

RESULTS AND DISCUSSION**Purpose Statement Number 1: Design and develop MELCs-aligned offline E-Modules in Disciplines and Ideas in the Social Sciences**

The identified Most Essential Learning Competencies (MELCs) of DISS from PIVOT 4A Budget of Work (BOW) released by DepEd Calabarzon and most difficult to teach competencies served as the basis of the learning objectives and topic selection for the offline E-Modules. Meanwhile, the proficiency level, needs, and current situation of remote learners were the considerations in determining the overall design of the material — including the concepts, learning strategies,

learning assessments, learning tasks, and key features. In addition, the accuracy of the information and the alignment of the objectives, activities, and assessments to MELCs was also checked before the modules were developed on the electronic platform.

The E-Modules were composed of five (5) MELCs, of which each had its own sets of objectives and topics. It could be seen from the table that the learning objectives and topics are aligned to the MELCs. Some of the learning objectives were adopted (E-Module 1, Learning Objectives 1 and 2) and adapted (E-Module 2, Learning Objective 2) from the learning competencies listed in the previous DepEd curriculum guide for DISS while the rest were crafted by the author of this study.

The designed offline E-Modules were collectively named DISSKARTE or Disciplines and Ideas in the Social Sciences Knowledge-Amplifying Remote Training E-Modules. It was a user-friendly remote training digital application which aims to help modular students (dubbed as DISStance learners by the E-Modules — a portmanteau of DISS and distance) learn the subject DISS on their own pace and time and with such quality even without the physical or live virtual presence of a teacher. It was hoped that through these knowledge-amplifying e-modules, learners would be enabled to achieve the most essential learning competencies set by the curriculum for this subject even if they are studying remotely and have no strong internet connection.

The name itself, which was an borrowed from the Filipino word originally spelled as “*Diskarte*”, suggested that this instructional material would be the embodiment of what it takes to be resourceful, strategic, and determined— especially now that the world was in the new normal. This conviction was embedded in each section and features of DISSKARTE.

Table 1. Sections in Disciplines and Ideas in the Social Sciences Knowledge-Amplifying Remote Training E-Modules (DISSKARTE)

Section	Description
Pretest	A preliminary test that determines the proficiency of the students before the lesson
DISScovery	Introduces the new lesson through a learning task. Also, the learning task here link the previous knowledge of the students to the current lesson
DISScussion	Provides a brief discussion of the lesson to help students understand new concepts and skills
DISSection	Comprises activity/activities for independent practice to help students dissect the lesson and thus master the competencies and skills of the topic
DISStillation	Includes an activity that helps students distill and process what they have learned from the lesson
DISSeminate	Provides an activity that helps students meaningfully connect the newly acquired knowledge and skill to real-life situations
DISSperse	Comprises an activity that serves as students' avenue to integrate their new and old learnings

Posttest	A completion test that is in conjunction with the pretest. This measures students' achievement of learning after using DISSKARTE all throughout
DISSclose	Provides a portion where student discloses their reflection as regards the lesson

Table 1. shows the sections that comprised the designed offline E-Modules. The sections' names were mostly a portmanteau of DISS with several relevant words such as discovery, discussion, dissection, distillation, disseminate, disperse, and disclose as these words encompass the concept of their respective sections. Since the instructional material is standards-based, these sections were also anchored to the Introduction-Development- Engagement-Assimilation (IDEA) format of DepEd Calabarzon Guidelines on the Implementation of MELC PIVOT 4A Budget of Work (BOW) in All Learning Areas for Key Stages 1-4. DISScovery was in congruence to the Introduction phase as this presented the lesson to the students; DISScussion, DISSection, and DISStillation were aligned to Development Phase as these developed the contents as part of the enabling and foundation skills and developed learners' mastery of the given competency; DISSeminate had a congruence in Engagement as it engaged the students to appropriate pedagogical or real-world tasks and learning opportunities; DISSperse had an alignment to Assimilation as it assessed and refined the knowledge, skills, and attitudes/values of learners.

In DISSKARTE, these sections were strategically organized. The sections were composed of appropriate and meaningful learning tasks and contents. Each section was locked by default, and students could only go from one to another if the section he/she was currently into was finished. This was to ensure that each of the learning tasks would be experienced by the students.

DISSKARTE adhered to the Principles of Programmed Instruction. As it followed the Principle of Small steps, the topics presented in this instructional material were broken down into small frames. In fact, each module covered one MELC only. According to EduGyan, (2017), learning would be better when the material is presented in small steps as it reduces the rate of committing errors and encourages further learning.

Also, the various appropriate learning opportunities and interactive features of DISSKARTE adhere to the Principle of Active Responding. The students would not just read the instructional material but will also digitally manipulate it. For instance, all pretests and post-tests in DISSKARTE were all in gamified form. This suggests how this study considered Generation Z learners' love for digital interaction. This feature will help students to be actively involved in learning and thus construct their own knowledge.

Moreover, the principle of Immediate Reinforcement was also considered in the development of DISSKARTE. One of the features of this self-paced module is its immediate feedback mechanism. The researcher-made pretests and post-tests, as well as the developmental tasks, provide immediate confirmation to the learners whether they are getting the correct answers or not. Immediate reinforcement to the learners was considered in the design because the principle suggested that the learner gets confident for further learning and learns best if his/her response is confirmed immediately.

Furthermore, through the help of two (2) Information and Technology (IT) Experts, DISSKARTE was developed and licensed under unity personal, a 3D development platform. It had 115 MB download size and was compatible with Android Marshmallow 6.0 and the latest version.

Purpose Statement Number 2: Establish the content validity and acceptability of the designed MELCs-aligned offline E-Modules in Disciplines and Ideas in the Social Sciences

Feedback, comments, and suggestions of validators were also solicited during this phase. This was done to ensure the continuous improvement of DISSKARTE. Validators had given their insights either during the time of their validation or after the validation. Their feedback, comments, and suggestions, which mainly concerned DISKKARTE's acceptability, were written down on the observational notes of the researcher. Since all of these were all found helpful to the further development of the instructional material, these were all considered and immediately applied right after the entire Validation Phase.

Table 2. Level of Content Validity of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences in terms of Objectives

Indicators	\bar{X}	VI
Relevant to the topics in DISS	3.88	HV
Specific and clearly stated	3.92	HV
Measurable	3.88	HV
Attainable	3.88	HV
Result-oriented	3.80	HV
Time-bound	3.76	HV
Composite Mean	3.85	HV

Legend: 3.25-4.00 Highly Valid (HV) 1.75-2.49 Partially Valid (PV)
2.50-3.24 Valid (V) 1.00-1.74 Not Valid (NV)

Table 2. shows the content validity of the designed MELCs-aligned offline E- Modules in DISS in terms of Objectives. The general composite was 3.85 which was interpreted as **Highly Valid**. The indicator “specific and clearly stated” had the highest mean which was 3.92 and interpreted as **Highly Valid** while the indicator “time-bound” had the least mean of 3.76 and was interpreted as **Highly Valid**.

The results show that the objectives used for each module are very evidently direct and clear. Clear objectives are good as it allows students, especially the modular ones, to know the overview of what they need to accomplish and to monitor their own progress. Moreover, the favorable results also suggest how all the learning objectives in the E-Modules were carefully crafted and unpacked

from the MELCs of DISS so it would be relevant to the topic, measurable, attainable, and result-oriented. On the other hand, as shown by the result under the indicator “time-bound”, it can be depicted that some of the objectives may also be challenging especially when it comes to its duration.

In support of this, Shank (2020) stated that it would be good for learning objectives to be specific, measurable, achievable, relevant, and timely. It was suggested that if one would create learning objectives this way, users would have a better chance of being successful in learning.

Table 3. Level of Content Validity of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences in terms of Concept

Indicators	\bar{X}	VI
Gives insights and ideas as to what the activity is all about.	3.72	HV
Provides background of concepts and information about the topic to be solved.	3.72	HV
Attracts learners' attention.	3.76	HV
Arouses learners' interest to solve the exercises.	3.80	HV
Achieves the objectives of the application.	3.72	HV
Composite Mean	3.74	HV

Legend: 3.25-4.00 Highly Valid (HV) 1.75-2.49 Partially Valid (PV)
 2.50-3.24 Valid (V) 1.00-1.74 Not Valid (NV)

Table 3 shows the content validity of the designed offline E-modules in terms of Concept. The general composite was 3.74 which was interpreted as **Highly Valid**. In detail, the indicator stating “arouse learners’ interest to solve the exercises” had the highest mean of 3.80 and was interpreted as **Highly Valid**. On the other hand, the indicators “give insights and ideas as to what the activity is all about”, “provide background of concepts and information about the topic to be solved” and “achieves the objectives of the application” had the lowest mean of 3.72 and was also interpreted as **Highly Valid**.

This implies that the general concept of the offline E-modules can arouse the users' interest to answer the learning activities. In addition, the results also suggest how valid the concepts are as the material is not just attractive but also provides insights, ideas, background about the learning activities. Its authentic, contextualized, and logical concepts possibly made the exercises engaging and instructional material interesting to learners.

Interesting and engaging instructional materials help the modular learners be more actively responding in learning. This is anchored to the principles of Constructivism and one of the principles of Programmed Instruction Learning, Principle of Active Responding. As mentioned in EduGyan (2017), since active responding is an integral part of learning, it is a must that an instructional material must be designed logically so that the learner will be aroused enough to actively construct knowledge through it.

Table 4 Level of Content Validity of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences in terms of Topics

Indicators	\bar{X}	VI
Sequenced according to MELCs	3.96	HV
Logically presented	3.84	HV
Address the learners' needs	3.84	HV
Composite Mean	3.88	HV

Legend: 3.25-4.00 Highly Valid (HV)

1.75-2.49 Partially Valid (PV)

2.50-3.24 Valid (V)

1.00-1.74 Not Valid (NV)

Table 4 shows the content validity of the designed offline E-Modules in terms of Topics. The general composite was 3.88, interpreted as **Highly Valid**. In detail, the indicator stating that the topics were “sequenced according to MELCs” had the highest mean of 3.96 and was interpreted as **Highly Valid**. On the other hand, the indicator stating that the topics were “logically presented” and “address the learners’ needs” had the lowest mean of 3.84 and was still interpreted as **Highly Valid**.

The results imply that the topics covered in the offline E-modules are highly aligned to the present standards set for the new normal—the Most Essential Learning Competencies. It only means that the designed instructional material was standards-based and just being faithful to one of its purposes— to design and develop MELCs-aligned offline e-modules. On top of this, it also suggests that the topics in e-modules are logically presented and address the needs of the learners. It manifested to the material as this study also highly considered the needs of the learners in the logical presentation of the topics in the E-Modules.

Similarly, several DISS materials available in bookstores such as “Disciplines and Ideas in the Social Sciences” by Tatel (2016) and “Disciplines and Ideas in the Social Sciences (The Padayon Series)” by Dela Cruz et al. (2016), are all sequenced according to the standards. Since DepEd is implementing a standards-based curriculum, all topics to be covered and to be taught must be aligned to the standards set by the Education department. In the case of the new normal, DepEd Order No. 12, s. 2020 prescribed the use of MELCs in designing a learning plan.

In addition, Tomlinson (1998, as cited in Marjanovikj-Apostolovski, 2019) suggested that an instructional material must be based on a thorough understanding of the needs of the students such as their specific language difficulties, learning objectives, preferred learning styles. He further stated that following this can assure the effectiveness and learner-centeredness of the material.

Table 5 Level of Content Validity of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences in terms of Directions

Indicators	\bar{X}	VI
Simple and clear	3.76	HV
Easy to follow	3.72	HV
Properly sequenced	3.84	HV
Can be done independently	3.76	HV
Guides non-native users of technology accordingly	3.64	HV
Composite Mean	3.74	HV

Legend:

3.25-4.00 Highly Valid (HV)

1.75-2.49 Partially Valid (PV)

2.50-3.24 Valid (V)

1.00-1.74 Not Valid (NV)

As presented in Table 5, the evaluators' overall rating on the developed offline E-Modules in terms of Directions was 3.74, interpreted as **Highly Valid**. In detail, the indicator stating that the directions were "properly sequenced" had the highest mean of 3.84, interpreted as **Highly Valid**, while the indicator stating that the directions "guide non-native users of technology accordingly" had the lowest mean of 3.64, interpreted as **Highly Valid**.

Based on the results, it is suggested that the directions in offline E-modules are properly sequenced. Sequencing is one of the important considerations of this study as it acknowledges the context of the learners. Since remote learners have no easy access to their teacher, it would be helpful for them if the directions are properly sequenced so they can still be guided in answering the learning tasks. In addition, the results also infer that the directions are simple, clear, and easy so that it can be done even without the aid of MKOs. On the other hand, although the indicator "directions guide non-native users of technology accordingly" got the lowest mean among others, this would still be permissible as the target users of the offline E-Modules are Generation Z, who are all digital natives.

As the new normal seemingly requires students to be independent learners, a Prastowo (2015, as cited in Linda et al., 2020) suggested that a module as a teaching material must be systematical in which the language used must be easily understood by students according to their proficiency level and age so they can learn independently with minimal assistance from their teachers.

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Indicators	\bar{X}	VI
Relevant to the objectives	3.88	HV
Appropriate to learners' abilities	3.88	HV
Adequate to learners' language knowledge and skills	3.88	HV
Sufficient to determine mastery level of learners	3.68	HV
Enhances learner's comprehension and reading skills	3.72	HV
Composite Mean	3.81	HV

Legend:

3.25-4.00 Highly Valid (HV)

1.75-2.49 Partially Valid (PV)

2.50-3.24 Valid (V)

1.00-1.74 Not Valid (NV)

Table 2.1.5 shows the content validity of the designed offline E-Modules in terms of Exercises. The general composite was 3.8, interpreted as **Highly Valid**. In detail, the indicator stating that the "exercises are relevant to the objectives", "appropriate to the learners' abilities", and "adequate to learners' language knowledge and skills" had the highest mean of 3.88, and was interpreted as **Highly Valid**. On the other hand, the indicator stating that the "directions are sufficient to determine mastery level of learners" had the lowest mean of 3.68, still interpreted as **Highly Valid**.

The results imply that the exercises of the offline E-Modules are relevant to the objectives, appropriate to the learners' abilities, and adequate to learners' language knowledge and skills. This suggests how aligned to learning objectives the learning tasks are and how the proficiency level of the learners is considered for each exercise.

Similarly, Kurt (2020) suggested that the instructional strategies and assessments of the modules must be consistent and have a precise connection to the learning objectives. This is to give out a consistent understanding to both teacher and learners as to what is going to be taught and learned and how it will be evaluated. Moreover, according to Tomlinson (1998, as cited in Marjanovikj-Apostolovski, 2019) instructional materials must be based on the needs of the students such as their specific language difficulties, learning objectives, and preferred learning styles so the effectiveness and learner-centeredness of the material can be assured. After all, a learner-centered curriculum is what the DepEd Order No. 21 s. 2019 is currently being implemented.

Development of Offline E-Modules to Improve Learners' Academic Performance in Disciplines and Ideas in the Social Sciences*Rocky Lou N. Aniciete, Anacleto M. Cabigao, Ma. Lorena M. Tagala, Alfredo G. Perez Jr., Eulalia M. Javier***Table 7** Level of Content Validity of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences in terms of Reflections

Indicators	\bar{X}	VI
Motivates learners to express their learning experience	3.80	HV
Gives insights to teacher if the learners need remediation or enrichment	3.76	HV
Inspires the production of more innovative and novel ways of assessing learners' learning	3.76	HV
Composite Mean	3.77	HV

Legend:

3.25-4.00 Highly Valid (HV)

1.75-2.49 Partially Valid (PV)

2.50-3.24 Valid (V)

1.00-1.74 Not Valid (NV)

Table 7 presents the content validity of the designed Offline E-Modules in terms of Reflection. The general composite was 3.77, interpreted as **Highly Valid**. In detail, the indicator "motivates learners to express their learning experience" had the highest mean of 3.80 interpreted as **Highly Valid**. On the other hand, the indicators "give insights to teachers if the learners need remediation or enrichment" and "inspires the production of more innovative and novel ways of assessing learners' learning" had the lowest mean of 3.76, also interpreted as **Highly Valid**.

The results imply that the reflections of the Offline E-Modules can motivate the learners to express their learning experience. Aside from reflection activity, the e-modules also have progress monitoring features, self-assessment tasks, feedback mechanism, and portfolio mechanism — all of which can encourage students express and monitor their learning experience. In addition, although with lower means (yet still labeled as Highly Valid), it can be deduced that the reflections in E-Modules can still give teachers insights whether a remediation is needed and can inspire teachers to produce more innovative and novel ways of assessing the learners.

In support, Dewey (1887, as cited in Catuday, 2019) stated that people learn by doing and reflecting on what they do. Similarly, Webb (2018) in her article titled "Why 'Reflection' Encourages Better Learning Experience", explained that reflection provides learners with the opportunity to share their accomplishments, struggles, confusions, and even strengths and weaknesses. She further pointed out that by providing learners with the opportunity to supply feedback through reflection, teachers can then make informed decisions as regards the improvement of the learning design of the material.

Table 8 Level of Acceptability of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences in terms of Functionality

Indicators	\bar{X}	VI
Program is free of technical problems	3.48	HA
Program is self-instructed	3.60	HA
Graphics and color increase the instructional value of the program	3.76	HA

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Program serves its purpose	3.84	HA
Program provides authorized easy access	3.64	HA
Composite Mean	3.66	HA

Legend:

3.25-4.00 Highly Accepted (HA)

1.75-2.49 Slightly Accepted (SA)

2.50-3.24 Accepted (A)

1.00-1.74 Not Accepted (NA)

Table 8 shows the acceptability of the designed offline E-Modules in terms of Functionality. The general composite was 3.66, interpreted as **Highly Accepted**. The functionality indicator stating that the “program serves its purpose” had the highest mean of 3.84, interpreted as **Highly Accepted**; however, the functionality indicator stating that the “program is free of technical problems” had the lowest mean of 3.48 and was still interpreted as **Highly Accepted**.

Based on the results, the designed offline E-Modules is found highly functional because first and foremost, it serves its purpose— to provide modular learners an instructional material that can help them achieve the competencies in DISS even without a stable internet, and/or live virtual presence of a teacher. In addition, the results also imply that the instructional material can be utilized even without the supervision of MKOs as it is self-instructed and accessible.

The graphics and colors used in the material enhanced its instructional value, although some validators suggested to further improve the shades of the color. During the validation phase, some validators suggested if lighter shade may be used. This suggestion was considered and applied.

On the other hand, the results suggest that minor technical problems are also present in the application. One example cited by one of the validators was nonfunctional buttons. It was noticed that some of the buttons (specifically one sound and two exit buttons) were hardly working. However, these feedbacks were immediately addressed right after the validation phase. For anything that is just newly developed, minor problems are really expected. But with the study's instructional model, ADDIE Model, these kinds of problems can be addressed.

In support, Apostolopoulos (2021) stated that the ADDIE model used nowadays follows a circular pattern that repeats itself until it reaches perfection. But while perfection is hard to achieve, using this model can still help the developing instructional material improve and reach some degree of functionality. As mentioned by Quigley (2019), the model provides a streamlined and focused approach that allows feedback for continuous improvement.

Table 9 Level of Acceptability of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences in terms of Accuracy

Indicators	\bar{X}	VI
Program contains correct information about the topic	3.84	HA
Program provides learners the best choices for their answers	3.80	HA
Choices reflect a certain degree of similarity in meaning but have distinct syntactic uses	3.72	HA

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Composite Mean	3.79	HA
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Legend:

3.25-4.00 Highly Accepted (HA)

1.75-2.49 Slightly Accepted (SA)

2.50-3.24 Accepted (A)

1.00-1.74 Not Accepted (NA)

Table 2.2.2 shows the acceptability of the designed offline E-Modules in terms of Accuracy. The general composite was 3.79, which was interpreted as **Highly Accepted**. In detail, the accuracy indicator stating that the “program contains correct information about the topic” had the highest mean of 3.84, interpreted as **Highly Accepted**, while the indicator stating that “choices reflect a certain degree of similarity in meaning but have distinct syntactic uses” had the lowest mean of 3.72 and was still interpreted as **Highly Accepted**.

It implies that the designed offline e-module contains correct information about the topic. In terms of learning tasks with multiple choice, the e-modules provide learners the best choices for their answers. Although the choices provided were similar in meaning, they were still distinctive in terms of syntactic uses. Overall, the results imply how highly accurate the instructional material is.

In support, Hainsworth and Keyes (2016) pointed out that instructional materials must be accurate, valid, authoritative, up-to-date, appropriate, unbiased, and free of any unintended content to ensure its acceptability, effectiveness, appropriateness, and reliability. Aside from reports, Adonis (2021) showed how many modules were criticized for having erroneous contents, Nguyen (2018) also argued that accurate information is the right of every student and the key to creating an innovative generation.

Table 10 Level of Acceptability of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences in terms of Suitability

Indicators	\bar{X}	VI
Activities consider the varying attitudes and capabilities of the learner	3.76	HA
Activities are appropriate to the subject matter	3.92	HA
Activities are relevant, interesting, and self-motivating to the learner	3.88	HA
Use of enrichment activity is adaptable to classes with large number of learners	3.80	HA
Language of the program is within the vocabulary range of the target learners	3.80	HA
Composite Mean	3.83	HA

Legend:

3.25-4.00 Highly Accepted (HA)

1.75-2.49 Slightly Accepted (SA)

2.50-3.24 Accepted (A)

1.00-1.74 Not Accepted (NA)

Table 10 shows the acceptability of the developed offline E-Modules in DISS in terms of suitability. The general composite was 3.83, interpreted as **Highly Accepted**. In detail, the suitability indicator stating that the “activities are appropriate to the subject matter” had the highest mean of 3.92, interpreted as **Highly Accepted**; however, the indicator stating that the “use of enrichment activity is adaptable to classes with large number of learners” and “the language of the program is within the vocabulary range of the target learners” had the lowest mean of 3.80, still interpreted as **Highly Accepted**.

It can be deduced from the results that the learning activities included in the E-modules are appropriate to the subject matter. The results also suggest that the activities consider the varying attitudes and capabilities of the learner, relevant, interesting, and self-motivating. As a matter of fact, during the validation phase, most of the validators have stated that the application would spark the interest of the learners as they claimed that many senior high school learners nowadays are indeed into gadgets. These convey that the learning activities in the instructional material are suitable to remote learners— who are reported struggling the most to get motivated in studying because of the new normal setup.

In support, Ferri et al. (2020) in their study titled “Online Learning and Emergency Remote Teaching: Opportunities and Challenges in Emergency Situations” stated that a suitable interactive e-learning platform maintains students’ attention. With this, a clear and consistent plan should be developed to provide suitable activities.

Table 11 Level of Acceptability of the Designed MELCs-aligned Offline E-Modules in Disciplines and Ideas in the Social Sciences in terms of Usability

Indicators	\bar{X}	VI
Material prepares the learners to think logically and critically	3.80	HA
Concepts in the material are simple and comprehensible.	3.76	HA
Material enhances the learners’ comprehension and reading skills	3.76	HA
Material provides opportunity for the development of the language skills	3.68	HA
Learning contents provide adequate information on the topics presented	3.72	HA
Material encourages the learners to become actively involved in intellectual activities	3.80	HA
Activities seek to relate new concepts from previous learning	3.76	HA
As a whole, activities are teachable	3.88	HA
Composite Mean	3.77	HA

Legend:

3.25-4.00 Highly Accepted (HA)

1.75-2.49 Slightly Accepted (SA)

2.50-3.24 Accepted (A)

1.00-1.74 Not Accepted (NA)

Table 11 shows the level of acceptability of the developed offline E-modules in DISS in terms of usability. The general composite was 3.77, interpreted as **Highly Accepted**. In detail, the usability indicator stating that “as a whole, activities are teachable” had the highest mean of 3.88, interpreted as **Highly Accepted**; however, the usability indicator stating that the “material provides opportunity for the development of the language skills” had the lowest mean of 3.68, still interpreted as **Highly Accepted**.

It implies that the designed offline E-Modules provide teachable learning activities. In addition, it can be deduced that the concepts in the material are simple yet comprehensible, the learning contents provide adequate information on the topics presented, and the learning activities relate new concepts from previous learning. Moreover, the results also infer that the instructional material is interdisciplinary. Aside from it prepares the learners to think logically and critically and to become actively involved in intellectual activities for Social Sciences, it also somewhat enhances the learners' other competencies such as reading comprehension and language skills. Overall, these indicate how usable the learning material is.

Similarly, Mulhayatiah et al. (2019) in their study titled “The Impact of Digital Learning Module in Improving Students' Problem-Solving Skills” explained that in terms of activities, learning achievement of learners who use e-modules is better than those who do not. The study revealed that the problem-solving skills of the students who used the digital module became better.

Table 12 Level of Acceptability of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences in terms of Efficiency

Indicators	\bar{X}	VI
Program quickly responds	3.72	HA
Program utilizes the resources efficiently	3.80	HA
Program utilizes the given time efficiently	3.80	HA
Composite Mean	3.77	HA

Legend:

3.25-4.00 Highly Accepted (HA)

1.75-2.49 Slightly Accepted (SA)

2.50-3.24 Accepted (A)

1.00-1.74 Not Accepted (NA)

Table 12 presents the acceptability of the designed Offline E-Modules in DISS in terms of efficiency. The general composite was 3.77, interpreted as **Highly Accepted**. In detail, the efficiency indicator stating that the “program utilizes the resources efficiently” and the “program utilizes the given time efficiently” attained the highest mean of 3.80 interpreted as **Highly Accepted**. On the other hand, the indicator stating that the “program quickly responds” had the lowest mean of 3.72, still interpreted as **Highly Accepted**.

The results imply that the program of the designed offline E-Modules is efficient when it comes to utilizing the resources and time allotted for each module. Efficiency matters, especially now that the current education system is in the new normal— where learning competencies are trimmed down into most essentials and many students are struggling to manage their schoolwork at home. The E-Modules' feedback mechanism is seen as the primary contributory factor to the material's efficiency.

Efficient feedbacking is something to consider in each instructional material, especially in the context of the new normal. As reported in Estrada (2021), modules answered by the learners in the Philippines contain little to no feedback regarding what they have learned and if their answers are correct. However, Principle of Immediate Reinforcement (as cited in EduGyan, 2017), one of the guiding principles of this study, suggested that immediate confirmation or feedback can help the learner get confidence for further learning and thus learn best.

Overall, the Validation Phase only revealed that the designed offline E-Modules in DISS were found to be highly valid and very acceptable by the experts. With this, the validated modules may be a good instructional material in DISS. In addition, the material, which was developed through the ADDIE model, may serve as a prototype for the development of other instructional materials for other subjects in the K-12 SHS curriculum. A similar local study titled “Development and Validation of Strategic Intervention Materials (SIMs) of the Selected Topics in Trigonometry of Precalculus Discipline in Senior High School. Journal of Mathematics and Statistics Studies” by Luzano (2020) that undertook the phases of ADDIE generated favorable results in terms of validity and acceptability.

Purpose Statement Number 3. Evaluate the designed MELCs-aligned offline E-Modules in Disciplines and Ideas in the Social Sciences based on Pretest and Posttest Performance of Students

Table 11 Evaluation of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences based on the performance of the HUMSS Students in Pretests

Indicators	Outstanding		Very satisfactory		Satisfactory		Fairly Satisfactory		Did not meet Expectations	
	F	%	F	%	F	%	F	%	F	%
E-Module 1	7	23.33	1	3.33	8	26.67	4	13.33	10	33.33
E-Module 2	5	16.67	7	23.33	6	20.00	3	10.00	9	30.00
E-Module 3	2	6.67	1	3.33	4	13.33	0	0.00	23	76.67
E-Module 4	2	6.67	2	6.67	1	3.33	6	20.00	19	63.33
E-Module 5	0	0.00	1	3.33	3	10.00	3	10.00	23	76.67

Legend:

90 - 100 Outstanding
85- 89 Very Satisfactory
80 - 84 Satisfactory
75 - 79 Fairly Satisfactory
74 below Did not meet expectations

Table 12 shows the evaluation of the designed MELCs-aligned offline E- Modules in DISS based on the performance of the students in Pretests. In E-Module 1, there were 7(23.33%) Outstanding, 1 (3.33%) Very Satisfactory, 8 (26.67%) Satisfactory, 4 (13.33 %) Fairly Satisfactory, and 10 (33.33%) Did not meet expectations.

In terms of module 2, there were 5 (16.67%) Outstanding, 7 (23.33%) Very Satisfactory, 6 (20.00%) Satisfactory, 3 (10.00 %) Fairly Satisfactory, and 9 (30.00%) Did not meet expectations.

Meanwhile in E-Module 3, there were 2 (6.67%) Outstanding, 1 (3.33%) Very Satisfactory, 4 (13.33%) Satisfactory, 0 (0.00 %) Fairly Satisfactory, and 23 (76.67%) Did not meet expectations.

As for the E-Module 4, there were 2 (6.67%) Outstanding, 2 (6.67%) Very Satisfactory, 1 (3.33%) Satisfactory, 6 (20.00 %) Fairly Satisfactory, and 19 (63.33%) Did not meet expectations.

Lastly, the results for E-Module 5 showed that there were 0 (0.00%) Outstanding, 1 (3.33%) Very Satisfactory, 3 (10.00%) Satisfactory, 3 (10.00 %) Fairly Satisfactory, and 23 (76.67%) Did not meet expectations.

Overall, it implies that most of the students did not meet the expectations set by DepEd for the subject DISS. This level of performance may be normal at this point; however, it still suggests that there is a need for a better instruction or an instructional material that could truly help them improve their performance. These pretest results, as well as the current challenges of the remote learners in the new normal mentioned in the first phase of this study, call for a need for an optimized instructional material.

Moreover, in any grade level and subjects, teachers must determine what their learners know before beginning a lesson. Through a pretest, Kelly (2019) stated that teachers see the levels of proficiency for each student and thus assess what knowledge, skills, and competencies to be taught to the learners. In the case of this study where the learners are remote, pretest results served as the basis of the contents of the instructional material. In addition, as the principles of Behaviorism, as explained by Brau et al. (2020) suggested, teachers are the ones who manipulate the environment to shape the behavior (learning) of the learners. Similarly, Ferri et al. (2020) stated that teachers must be the one who plans and develops an organized and optimized educational material and a more adequate and suitable interactive e-learning platform. Patterson (2020) added that through utilizing the right material, student's craft and development shall be improved and fortified. In this study, to help the students improve their performance, an offline E-Modules in DISS is developed.

In the Evaluation phase of the development of these E-Modules, post-tests were conducted to the learners to track students' development in their academic performance. This is also the way to determine whether the students meet the expectations by utilizing the newly developed instructional material.

Table 13 shows the evaluation of the designed MELCs-aligned offline E-Modules in DISS using the Posttest.

Table 13 Evaluation of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences based on the Performance of the HUMSS Students in Posttests

Indicators	Outstanding		Very satisfactory		Satisfactory		Fairly Satisfactory		Did not meet Expectations	
	F	%	F	%	F	%	F	%	F	%
E-Module 1	19	63.33	4	13.33	5	16.67	2	6.67	0	0.00
E-Module 2	21	70.00	4	13.33	4	13.33	1	3.33	0	0.00
E-Module 3	13	43.33	3	10.00	5	16.67	6	20.00	3	10.00
E-Module 4	15	50.00	7	23.33	1	3.33	5	16.67	2	6.67
E-Module 5	15	50.00	4	13.33	0	0.00	9	30.00	2	6.67

Legend:

90 - 100 Outstanding

85- 89 Very Satisfactory

80 - 84 Satisfactory

75 - 79 Fairly Satisfactory

74 below Did not meet expectations

Table 3.2 shows the evaluation of the designed MELCs-aligned offline E- Modules in DISS using the Post-tests. In E-Module 1, there were 19 (63.33%) Outstanding, 4 (13.33%) Very Satisfactory, 5 (16.67%) Satisfactory, 2 (6.67%) Fairly Satisfactory, and 0 (0.00%) Did not met expectations.

In terms of module 2, there were 21 (70.00%) Outstanding, 4 (13.33%) Very Satisfactory, 4 (13.33%) Satisfactory, 1 (3.33 %) Fairly Satisfactory, and 0 (0.00%) Did not met expectations.

Meanwhile in E-Module 3, there were 13 (43.33%) Outstanding, 3 (10.00%) Very Satisfactory, 5 (16.67%) Satisfactory, 6 (20.00 %) Fairly Satisfactory, and 3 (10.00%) Did not met expectations.

As for the E-Module 4, there were 15 (50.00%) Outstanding, 7 (23.33%) Very Satisfactory, 1 (3.33%) Satisfactory, 5 (16.67 %) Fairly Satisfactory, and 2 (6.67%) Did not met expectations.

Lastly, the results for E-Module 5 attained 15 (50.00%) Outstanding, 4 (13.33%) Very Satisfactory, 0 (0.00%) Satisfactory, 9 (30.00 %) Fairly Satisfactory, and 2 (6.67%) Did not met expectations.

It implies that the majority finally met the expectations according to the standards set by DepEd. Noticeably, more than 80% passed while half of the learners were able to hit the outstanding mark on most of the post-tests. This suggests that the offline E-modules played a huge role in helping the remote learners in DISS improve their performance.

In a similar study, Wijaya and Vidiyanti (2020) disclosed that e-modules are effective to be applied to learning. Moreover, Ghazali et al. (2020) revealed that e-module is advantageous

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especially in terms of susceptibility. The findings of their study indicated that e-module gave a positive effect to the users.

Table 14 Evaluation of the Designed MELCs-aligned Offline E- Modules in Discipline and Ideas in the Social Sciences using Pretests and Post-tests

Indicators	Test	Paired Differences				Remarks
		Mean	SD	T	P value	
E-Module 1	Pre &Post	-10.50000	8.64531	-6.652	.000	Significant
E-Module 2	Pre &Post	-13.16667	10.12707	-7.121	.000	Significant
E-Module 3	Pre &Post	-15.58333	11.64643	-7.329	.000	Significant
E-Module 4	Pre &Post	-18.50000	12.67294	-7.996	.000	Significant
E-Module 5	Pre &Post	-19.08333	11.01495	-9.489	.000	Significant

Table 14 shows the evaluation of the designed MELCs-aligned offline E- Modules in Discipline and Ideas in the Social Sciences by modules using pretests and post-tests. All the probability values are .000, which is less than the level of significance at .05. Thus, it can be concluded that there was significant difference in the performance of the students in the pretest and post-test.

It can be deduced from the results that the learners' performance evidently improved in DISS. The learners' post-test scores are not just higher but significantly different in a positive way than their pretests. This implies that the designed offline E-Modules has a very significant role in helping the remote learners achieve the MELCs for DISS and improve their academic performance even without a stable internet and/or a live virtual presence of a teacher. It thus infers that the designed offline E-Modules can be used as instructional material for DISS, especially for remote learners in the context of new normal.

In support, E-modules can be an effective instructional material in the blended learning system. A similar study titled "The Effectiveness of E-Module Through Metacognitive Construction in Blended Learning System" by Rini et al. (2020) showed on its findings the effectiveness of metacognitive skills-based e-modules on students' learning outcomes as independent teaching materials. Similarly, in a study titled "The Impact of Digital Learning Module in Improving Students' Problem-Solving Skills" Mulhayatiah et al. (2019) revealed that digital modules can influence learning skills of learners.

CONCLUSION

The designed and developed offline E-Modules has a very significant role in helping remote learners improve their academic performance in DISS even without a stable internet and/or a live virtual presence of a teacher. The designed and developed offline E-Modules in DISS are highly valid and very acceptable and thus can be good instructional material in DISS, especially in the context of the new normal.

The study is limited to developing e-modules covering only a quarter of DISS subjects. Further research may either continue working on the next quarters or other subjects. After all, this study may serve as a prototype for the development of other instructional materials. However, it is hoped that the study was able to contribute to the world of literature as there were only a few to zero

studies about developing instructional materials for DISS, especially in the context of the new normal.

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