DIGITAL INSTRUCTIONAL MATERIALS ON STUDENTS' ENGAGEMENT AND PERFORMANCE

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ABSTRACT

This study aimed to determine the completeness and characteristics of digital instructional materials on the students' engagement and performance of Grade 11 students in Empowerment Technologies. Particularly, the researcher attempted to determine the level of completeness of the components of digital instructional materials in terms of objectives, learning content, learning activities and assessment and evaluation. The researcher also determined the level of characteristics of digital instructional materials in terms of multimedia, interactive, accessibility, and flexibility. It was also asked to answer the level of students' engagement in terms of conceptual engagement and critical engagement, and the level of students' performance relative to practical test and written test. The researcher used descriptive quantitative research design was employed by the researcher to obtain the necessary data. The research respondents were composed of one hundred thirty (130) Grade 11 students. Random sampling was utilized in selecting the respondents. The researcher's instrument of this study is through the development of a series of questionnaires suited for the problems in this study. It was concluded that the level of completeness of the components and characteristics of the Digital Instructional Materials and level of students' engagement, the result were significant. This means that digital instructional materials are vital to the improvement and quality of learning of the students.

Keywords:

Digital instructional materials; engagement; performance

INTRODUCTION

The passage of Republic Act No. 10533 or Enhanced Basic Education Act of 2013 strengthens the needs of curriculum changes and reforms. Because of this, basic education added the additional Grade 11 and Grade 12 across curriculum. It aims to achieve lifelong learning by strengthening 21st century skills. The objectives of this curriculum prepared students with the global skills and competencies in their future careers. Various subjects were instilled and remunerated for equipping students with vital skills.

Empowerment Technologies was designed to provide students with the foundation of knowledge and skills needed to succeed in environments that require the use of computers and the internet. It helped the students improve their skills in various applications and discover the world of technology. To create a foundation in understanding the world of ICT (Information and Communication Technologies), understand and demonstrate the proper etiquette in

using ICT and more. (De Lara, 2016). This subject aims to introduce Senior High School students a basic understanding about Empowerment Technologies in 21st century setting (Deped Curriculum, 2018).

Hence, this course will profoundly empower students in technology as well as caters them to be critical thinkers. Because of this, teachers utilized tools in teaching topics in Empowerment Technologies for students' easier understanding. Designing instructional materials is also a way of attaining the course's objectives.

Digital instructional materials were very effective, the advent of digital technologies enabled students to be exposed to various tools and Internet-based resources (Bautista, 2021). In this way, digital learning materials can be utilized in learning. It has been proven that it increases academic excellence and the quality of learning instructions by teachers. The availability of numerous digital tools will surpass challenges and problems of Senior High School curriculum. Students will empower with the right mindset through improved instructional delivery (Borron, 2022).

The digital learning materials bind with teaching to promote the students' learning outcome. Added to these, the students' engagement and performance is vital to the success of utilization of so-called digital learning tools. Lin (2017) also said that digital teaching aims to have students actively participate in learning activity to achieve the set learning outcome.

Statement of the Problem

This study aims to determine the digital instructional materials on the students' engagement and performance of Grade 11 students in Empowerment Technology. Particularly, the researcher seeks to answer the following research questions:

1. What is the level of completeness of the components of Digital Instructional Materials in terms of:
   1.1. Objectives;
   1.2. Learning Content;
   1.3. Learning Activities; and
   1.4. Assessment and Evaluation?
2. What is the level of characteristics of Digital Instructional Materials in terms of:
   2.1. Multimedia;
   2.2. Interactive;
   2.3. Accessibility; and
   2.4. Flexibility?
3. What is the level of students' engagement in terms of:
   3.1. Conceptual Engagement; and
   3.2. Critical Engagement?
4. What is the level of students' performance relative to:
   4.1. Practical test; and
   4.2. Written Test?
5. Is there a significant relationship between the components and characteristics of digital instructional materials and the level of students' engagement?

6. Is there a significant relationship between the components and characteristics of digital instructional materials and the level of students' performance?

REVIEW OF RELATED LITERATURE

Student engagement refers to a meaningful engagement throughout the learning environment. It is best understood as a relationship between the student and the school, teachers, peers, instruction, and curriculum.

According to Banna, Lin, Stewart, and Fialkowski (2015), Engagement strategies are aimed at providing positive learner experiences including active learning opportunities, such as participating in collaborative group work, having students facilitate presentations and discussions, sharing resources actively, creating course assignments with hands on components, and integrating case studies and reflections.

Pasha, M. R. (2020). assert the importance of student engagement to online learning because they believe student engagement can be shown as evidence of students' considerable effort required for their cognitive development and their given ability to create their own knowledge, leading to a high level of student success.

Added by Martin, F., & Bolliger, D. U. (2018). also agreed that there must be cooperation and collaboration between students and instructors to increase student engagement. Moreover, Stavredes and Herder (2014), discuss how important it is to choose and design course material and activities in a way that enables learners to explore, discover, and perfect their skills and gain knowledge.

One notable aspect of the student engagement is how often the 'object' or focus of student engagement is left undefined. Kahu, E. R., & Nelson, K. (2018) develops a model of student engagement without any explicit discussion of what it is that students are engaging with. This is crucial to know because the meaning of student engagement changes when the object of engagement changes.

The study of Delfino (2019) suggested that the teacher and the school should have strong collaboration to provide the students avenues where they could maximize their engagement. Maximizing student engagement would be helpful in providing meaningful learning experiences among the students. This is vital to the building blocks of developed instructional materials. Likewise, the teachers should spearhead the emphasis of motivation and engagement in the subject.

Abdu-Raheem (2014), encouraged teachers to improvise teaching aids because they are in great measure enhance learners' full participation in the lesson, gives room for inquiry, problem-solving, discussion and clarification of issues and ideas among students and the teacher.

According to Rice, M. F., & Ortiz, K. R. (2021), Digital materials are instructional materials available online for teachers and students that do not constitute a full course of study. These exclude comprehensive curriculum materials that are available in online form.

A study conducted by Holzberger, D., Philipp, A., & Kunter, M. (2013), regard digital learning as delivery with digital forms of media (e.g., texts or pictures) through the Internet; and, the provided learning contents and teaching methods were to enhance learners' learning and aimed to improve teaching effectiveness or promote personal knowledge and skills.

According to Tan, O. S. (2021), the objectives should be the first and foremost steps needed to accomplish. It gives the sense of direction to what the materials needed to be done. Moreover, every chapter and every lesson should have stated objectives. The development of digital instructional materials can add to the significance of the material. It promotes a positive and direct learning process.

Moreover, Zhu, L. (2016), establishing the learning objectives can highly help teachers in selecting and organizing the content of the lesson. The role of the teacher will become an organizer which will summarize the course content needed to cover an entire school year. Being the teacher, the process of writing and reviewing the learning objectives in a course will identify the kinds of instructional material that will be suitable to the learning outcomes most efficiently.

METHODOLOGY

The study was conducted at Manuel S. Enverga Memorial School of Arts and Trades located in Brgy. Soledad, Mauban, Quezon. A total of one hundred thirty (130) Senior High School Grade 11 Students served as primary research respondents.

The researcher will use simple random sampling to select the appropriate and feasible respondents in the collection of data. Simple random sampling is a type of probability sampling in which the researcher randomly selects a subset of participants from a population. Each member of the population has an equal chance of being selected. Data is then collected from as large a percentage as possible of this random subset. In this study, the researcher will select an equal number of research participants from the Grade 11 classes who are taking the subject of Empowerment Technologies.

RESULT AND DISCUSSION

Table 1. Level of Completeness of the Components of Digital Instructional Materials in terms of Objectives

STATEMENT	Mean	SD	Remarks
The objectives of the digital instructional materials…			
are clear and easy to understand.	3.58	0.53	Strongly Agree
should be specific and achievable.	3.53	0.52	Strongly Agree
should be aligned with the Empowerment Technologies learning competencies.	3.45	0.52	Strongly Agree
Utilized the SMART type of learning objectives.	3.53	0.57	Strongly Agree
presented hierarchical objectives.	3.52	0.55	Strongly Agree
Grand Mean	**3.52**		**Strongly Agree**
Interpretation	**Very High**		

Legend:

Scale	Range	Remarks	Interpretation
4	3.25 – 4.00	Strongly Agree	Very High
3	2.50 – 3.24	Agree	High

2	1.75 – 2.49	Disagree	Low
1	1.00 – 1.74	Strongly Disagree	Very Low

Table 1 exhibits the level of completeness of the components of Digital Instructional materials in terms of objectives. It can be gleaned that the respondents strongly agreed that the objectives of the digital instructional materials are clear and easy to understand, it gained the highest (M=3.58, SD=0.53). Similarly, respondents strongly agree that the objectives of the digital instructional materials in empowerment technologies learning competencies though it received the least (M=3.45, SD=0.52). Overall, the level of completeness of the components of Digital Instructional materials in terms of objectives attained the grand mean of 3.52 and was interpreted as Very High.

Table 2. Level of Completeness of the Components of Digital Instructional Materials in terms of Learning Content

STATEMENT	Mean	SD	Remarks
The learning content of the digital instructional materials…			
have logical arrangement of content.	3.61	0.54	Strongly Agree
are arranged from basic to complex.	3.52	0.64	Strongly Agree
have unity and coherence.	3.57	0.65	Strongly Agree
should be relevant to the objectives.	3.52	0.60	Strongly Agree
is accurate in its subject matter.	3.65	0.52	Strongly Agree
Grand Mean	**3.57**		**Strongly Agree**
Interpretation	**Very High**		

Legend:

Scale	Range	Remarks	Interpretation
4	3.25 – 4.00	Strongly Agree	Very High
3	2.50 – 3.24	Agree	High
2	1.75 – 2.49	Disagree	Low
1	1.00 – 1.74	Strongly Disagree	Very Low

Table 2 exhibits the level of completeness of the components of Digital Instructional materials in terms of Learning Content. It can be gleaned that the respondents strongly agreed that the learning content of the digital instructional materials are accurate in its subject matter, it gained the highest (M=3.65, SD=0.65). Similarly, respondents strongly agree that the objectives of the digital instructional materials of empowerment technologies learning competencies though it received the least (M=3.52, SD=0.52). Overall, the level of completeness of the components of Digital Instructional materials in terms of learning content attained the grand mean of 3.57 and was interpreted as Very High.

Table 3. Level of Completeness of the Components of Digital Instructional Materials in terms of Learning Activities

STATEMENT	Mean	SD	Remarks

The learning activities in the digital instructional materials…			
provide a variety of learning activities.	3.64	0.51	Strongly Agree
use learning activities inciting the critical thinking of the students.	3.51	0.52	Strongly Agree
uses a variety of media in presenting activities.	3.51	0.59	Strongly Agree
uses activities in a spiral progression approach.	3.35	0.60	Strongly Agree
presented learning activities in a continuous approach.	3.53	0.56	Strongly Agree
Grand Mean	**3.51**		**Strongly Agree**
Interpretation	**Very High**		

Legend:

Scale	Range	Remarks	Interpretation
4	3.25 – 4.00	Strongly Agree	Very High
3	2.50 – 3.24	Agree	High
2	1.75 – 2.49	Disagree	Low
1	1.00 – 1.74	Strongly Disagree	Very Low

Table 3 exhibits the level of completeness of the components of Digital Instructional materials in terms of Learning Activities. It can be gleaned that the respondents strongly agree that the learning content of the digital instructional materials provides a variety of learning materials, it gained the highest (M=3.64, SD=0.60). Similarly, respondents strongly agree that the Learning Activities of the digital instructional materials of empowerment technologies learning competencies though it received the least (M=3.35, SD=0.51). Overall, the level of completeness of the components of Digital Instructional materials in terms of Learning Activities attained the grand mean of 3.51 and was interpreted as Very High.

Table 4. Level of Completeness of the Components of Digital Instructional Materials in terms of Assessment and Evaluation

STATEMENT	**Mean**	**SD**	**Remarks**
The assessment and evaluation of the digital instructional materials…			
provide key to corrections as an overall assessment.	3.56	0.54	Strongly Agree
rubrics are well explained in evaluating students' performance.	3.58	0.53	Strongly Agree
monitor the progress of students in every content area.	3.58	0.54	Strongly Agree
use evaluation and feedback.	3.55	0.61	Strongly Agree
use a variety of assessment tools.	3.48	0.61	Strongly Agree
Grand Mean	**3.55**		**Strongly Agree**
Interpretation	**Very High**		

Legend:

Scale	Range	Remarks	Interpretation
4	3.25 – 4.00	Strongly Agree	Very High
3	2.50 – 3.24	Agree	High
2	1.75 – 2.49	Disagree	Low
1	1.00 – 1.74	Strongly Disagree	Very Low

Table 4 exhibits the level of completeness of the components of Digital Instructional materials in terms of assessment and evaluation. It can be gleaned that the respondents strongly agree that the assessment and evaluation of the digital instructional materials monitors the progress of students in every content area and the rubrics are well explained in evaluating students' performance, it gained the highest (M=3.58, SD=0.61). Similarly, respondents strongly agree that the assessment and evaluation of the digital instructional materials of empowerment technologies learning competencies though it received the least (M=3.48, SD=0.53). Overall, the level of completeness of the components of Digital Instructional materials in terms of assessment and evaluation attained the grand mean of 3.55 and was interpreted as Very High.

Level of Digital Instructional Materials Characteristics

Table 5. Level of Digital Instructional Materials Characteristics in terms of Multimedia

STATEMENT	Mean	SD	Remarks
The multimedia of the digital instructional materials…			
increases learning effectiveness.	3.67	0.53	Strongly Agree
enhance the acquisition and retention of the lesson.	3.60	0.52	Strongly Agree
can be easily updated.	3.58	0.54	Strongly Agree
helps them express and represent their prior knowledge and provides them with many learning opportunities.	3.63	0.53	Strongly Agree
offers ideal learning assessment tools that are also entertaining.	3.52	0.56	Strongly Agree
Grand Mean	**3.60**		**Strongly Agree**
Interpretation	**Very High**		

Legend:

Scale	Range	Remarks	Interpretation
4	3.25 – 4.00	Strongly Agree	Very High
3	2.50 – 3.24	Agree	High
2	1.75 – 2.49	Disagree	Low
1	1.00 – 1.74	Strongly Disagree	Very Low

Table 5 exhibits the level of Digital Instructional materials in terms of multimedia. It can be gleaned that the respondents strongly agree that the multimedia of digital instructional materials increases learning effectiveness, it gained the highest (M=3.67, SD=0.56). Similarly, respondents strongly agree that the multimedia of the digital instructional materials of empowerment technologies learning competencies though it received the least (M=3.52,

SD=0.52). Overall, the level of Digital Instructional materials characteristics in terms of multimedia attained the grand mean of 3.60 and was interpreted as Very High.

Table 6. Level of Digital Instructional Materials Characteristics in terms of Interactive

STATEMENT	Mean	SD	Remarks
The interactive nature of the digital instructional materials…			
encourages students' engagement for better performance.	3.65	0.51	Strongly Agree
makes the learning process enjoyable.	3.75	0.45	Strongly Agree
can accommodate different learning styles.	3.59	0.52	Strongly Agree
develops the ability to integrate knowledge from different subjects.	3.60	0.54	Strongly Agree
develops cooperation in a group.	3.63	0.52	Strongly Agree
Grand Mean	**3.64**		**Strongly Agree**
Interpretation	**Very High**		

Legend:

Scale	Range	Remarks	Interpretation
4	3.25 – 4.00	Strongly Agree	Very High
3	2.50 – 3.24	Agree	High
2	1.75 – 2.49	Disagree	Low
1	1.00 – 1.74	Strongly Disagree	Very Low

Table 6 exhibits the level of Digital Instructional materials in terms of their interactive nature. It can be gleaned that the respondents strongly agree that the interactive nature of the digital instructional materials makes the learning process enjoyable, it gained the highest (M=3.75, SD=0.54). Similarly, respondents strongly agree that the interactive nature of the digital instructional materials of empowerment technologies learning competencies though it received the least (M=3.59, SD=0.45). Overall, the level of Digital Instructional materials characteristics in terms of interactive nature attained the grand mean of 3.64 and was interpreted as Very High.

Table 7. Level of Digital Instructional Materials Characteristics in terms of Accessibility

STATEMENT	Mean	SD	Remarks
The accessibility of digital instructional materials…			
promotes independent learning.	3.61	0.64	Strongly Agree
helps expose students to the knowledge shared around the globe.	3.68	0.47	Strongly Agree
they can be accessed 24 hours a day.	3.35	0.52	Strongly Agree
The lesson and content are more accessible. (CHANGE)	3.55	0.51	Strongly Agree
promotes student-centered learning and collaboration.	3.48	0.50	Strongly Agree
Grand Mean	**3.53**		**Strongly Agree**

Interpretation		**Very High**	

Legend:

Scale	Range	Remarks	Interpretation
4	3.25 – 4.00	Strongly Agree	Very High
3	2.50 – 3.24	Agree	High
2	1.75 – 2.49	Disagree	Low
1	1.00 – 1.74	Strongly Disagree	Very Low

Table 7 exhibits the level of Digital Instructional materials in terms of accessibility. It can be gleaned that the respondents strongly agree that the interactive nature of the digital instructional materials helps expose students to the knowledge shared around the globe, it gained the highest (M=3.68, SD=0.64). Similarly, respondents strongly agree that the accessibility of the digital instructional materials of empowerment technologies learning competencies though it received the least (M=3.48, SD=0.47). Overall, the level of Digital Instructional materials characteristics in terms of accessibility attained the grand mean of 3.53 and was interpreted as Very High.

Table 8. Level of Digital Instructional Materials Characteristics in terms of Flexibility

STATEMENT	**Mean**	**SD**	**Remarks**
The flexibility of digital instructional materials…			
provides an opportunity for students to meet and collaborate with peers.	3.68	0.48	Strongly Agree
facilitates the learning process for a variety of student learning styles simultaneously.	3.68	0.49	Strongly Agree
increases the opportunities and options available to learners and gives them control over learning through a variety of learning modes.	3.60	0.57	Strongly Agree
improved learning outcomes resulting from evidence-based and technology-enabled teaching.	3.53	0.56	Strongly Agree
encourages independence and creativity.	3.67	0.56	Strongly Agree
Grand Mean	**3.63**		**Strongly Agree**
Interpretation	**Very High**		

Legend:

Scale	Range	Remarks	Interpretation
4	3.25 – 4.00	Strongly Agree	Very High
3	2.50 – 3.24	Agree	High
2	1.75 – 2.49	Disagree	Low
1	1.00 – 1.74	Strongly Disagree	Very Low

Table 8 exhibits the level of Digital Instructional materials in terms of flexibility. It can be gleaned that the respondents strongly agree that the flexibility of the digital instructional materials provides an opportunity for students to meet and collaborate with peers and facilitates the learning process for variety of student learning styles

simultaneously, it gained the highest (M=3.68, SD=0.57). Similarly, respondents strongly agree that the flexibility of the digital instructional materials of empowerment technologies learning competencies though it received the least (M=3.53, SD=0.48). Overall, the level of Digital Instructional materials characteristics in terms of flexibility attained the grand mean of 3.63 and was interpreted as Very High.

Level of Students' Engagement

Table 9. Level of Students' Engagement in terms of Conceptual Engagement

STATEMENT	Mean	SD	Remarks
The Conceptual Engagement…			
respond to questions with enthusiasm.	3.78	0.41	Strongly Agree
responds accordingly to the nature of the story (by laughing or groaning in good humor).	3.82	0.38	Strongly Agree
devotes time for the activities	3.74	0.44	Strongly Agree
encourages independence and creativity.	3.66	0.48	Strongly Agree
participate in collaborative discussions or activities.	3.74	0.44	Strongly Agree
Grand Mean	**3.75**		**Strongly Agree**
Interpretation	**Very High**		

Legend:

Scale	Range	Remarks	Interpretation
4	3.25 – 4.00	Strongly Agree	Very High
3	2.50 – 3.24	Agree	High
2	1.75 – 2.49	Disagree	Low
1	1.00 – 1.74	Strongly Disagree	Very Low

Table 9 exhibits the Level of Students' Engagement in terms of conceptual engagement. It can be gleaned that the respondents strongly agree that the conceptual framework of the digital instructional materials responds accordingly to the nature of the story (by laughing or groaning in good humor), it gained the highest (M=3.82, SD=0.48). Similarly, respondents strongly agree that the conceptual engagement of the digital instructional materials of empowerment technologies learning competencies though it received the least (M=3.74, SD=0.38). Overall, the Level of Students' Engagement in terms of conceptual engagement attained the grand mean of 3.75 and was interpreted as Very High.

Table 10. Level of Students' Engagement in terms of Critical Engagement

STATEMENT	Mean	SD	Remarks
The Critical Engagement…			
make connections to other ideas and offer insights accordingly.	3.79	0.41	Strongly Agree
uses information in critical thinking and problem solving	3.83	0.38	Strongly Agree
ask in-depth questions that go beyond the material presented.	3.69	0.48	Strongly Agree

complete their tasks and turn it on time.	3.65	0.48	Strongly Agree
able to relate the lesson to students' experiences.	3.75	0.43	Strongly Agree
Grand Mean	**3.74**		**Strongly Agree**
Interpretation	**Very High**		

Legend:

Scale	Range	Remarks	Interpretation
4	3.25 – 4.00	Strongly Agree	Very High
3	2.50 – 3.24	Agree	High
2	1.75 – 2.49	Disagree	Low
1	1.00 – 1.74	Strongly Disagree	Very Low

Table 9 exhibits the Level of Students' Engagement in terms of critical engagement. It can be gleaned that the respondents strongly agreed that the critical engagement of the digital instructional materials uses information in critical thinking and problem solving, it gained the highest (M=3.83, SD=0.48). Similarly, respondents strongly agree that the critical engagement of the digital instructional materials of empowerment technologies learning competencies though it received the least (M=3.65, SD=0.38). Overall, the Level of Students' Engagement in terms of critical engagement attained the grand mean of 3.74 and was interpreted as Very High.

Level of Students' Performance

Table 11. Level of Students' Performance Relative to Practical Test

Grading Scale	Frequency	Percentage	Descriptors
90 – 100	117	90%	Outstanding
85 – 89	0	0	Very Satisfactory
80 – 84	13	10%	Satisfactory
75 - 79	0	0	Fairly Satisfactory
Below 74	0	0	Did Not Meet Expectations
Mean	**92.92**	**Interpretation**	**Outstanding**

Table 11 revealed the level of students' performance relative to their practical test. It can be seen that 117 or 90% of the respondents showed an "Outstanding" performance as they attained grades ranging from "90 to 100". While 13 or 10% of them performed "satisfactorily" as they obtained grades ranging from "80 to 84". The mean grade of 92.92 with verbal interpretation of "Outstanding" indicates that the respondents performed beyond excellent satisfactory level in their practical test.

Table 12. Level of Students' Performance relative to Written Test

Scores	Frequency	Percentage	Descriptors
49-60	48	37%	Outstanding
37-48	63	48%	Very Satisfactory
25-36	18	14%	Satisfactory
13-24	1	1%	Fairly Satisfactory

Below 12	0	0	Did Not Meet Expectations
Mean	**45.32**	**Interpretation**	**Outstanding**

Table 12 revealed the level of student's performance relative to their written test. It can be seen that 63 or 48% of the respondents showed a "Very Satisfactory" performance as they attained grades ranging from "37 to 48". While 1 or 1% of them performed "Fairly satisfactorily" as they obtained grades ranging from "13 to 24". The mean grade of 45.32 with a verbal interpretation of "Outstanding" indicates that the respondents performed beyond an excellent satisfactory level in their written test.

Significant Relationship between Components and Characteristics of the Digital Instructional Materials and the Level of Students' Engagement and Performance

Minitab 14 was used in computing the data gathered and treated them statistically using Pearson's Moment of Correlation Coefficient (Pearson's R). The computed p-values were compared to the level of significance at 0.05 to determine the significant relationship between components and characteristics of the digital instructional materials and the level of students' engagement and performance.

Table 13. Significant Relationship between Components and Characteristics of the Digital Instructional Materials and the Level of Students' Engagement

Variables		r-value	Degree of Correlation	p-value	Analysis
Objectives	Conceptual Engagement	0.503	Moderate	0.000	Significant
	Critical Engagement	0.445	Moderate	0.000	Significant
Learning Content	Conceptual Engagement	0.588	Moderate	0.000	Significant
	Critical Engagement	0.707	Strong	0.000	Significant
Learning Activities	Conceptual Engagement	0.730	Strong	0.000	Significant
	Critical Engagement	0.672	Strong	0.000	Significant
Assessment and Evaluation	Conceptual Engagement	0.646	Strong	0.000	Significant
	Critical Engagement	0.641	Strong	0.000	Significant
Multimedia	Conceptual Engagement	0.347	Weak	0.000	Significant
	Critical Engagement	0.340	Weak	0.005	Significant
Interactive	Conceptual Engagement	0.476	Moderate	0.000	Significant
	Critical Engagement	0.572	Moderate	0.000	Significant
Accessibility	Conceptual Engagement	0.494	Moderate	0.000	Significant
	Critical Engagement	0.393	Strong	0.000	Significant
Flexibility	Conceptual Engagement	0.482	Moderate	0.000	Significant
	Critical Engagement	0.554	Moderate	0.000	Significant

**significant at .05 level of significance*

Range	Degree of Correlation
±.0.81 – ±.1.00	Very Strong
±.0.61 – ±.0.80	Strong

±.0.41 – ±.0.60 Moderate

±.0.21 – ±.0.40 Weak

±0.00 – ±.0.20 Negligible

Table 13 revealed the relationship between the components and characteristics of the Digital Instructional Materials and the level of students' engagement.

It can be manifested that the components of the Digital Instructional Materials in terms of objectives, learning content, learning activities and assessment and evaluation convey a *significant* relationship to the level of students' engagement in terms of conceptual and critical engagement as indicated by the obtained r-values ranging from (0.445) to (0.707) with a *moderate to strong degree of correlation* and p-value (0.000) which was lower than the 0.05 level of significance that supports the result of the analysis.

Just the same, the characteristics of the Digital Instructional Materials in terms of multimedia, interactive, accessibility, and flexibility have a *significant* relationship to the level of students' engagement in terms of conceptual and critical engagement as implied by the obtained r-values ranging from (0.343) to (0.572) with a *weak to moderate degree of correlation* and p-value (0.000 and 0.005) which was lower than the 0.05 level of significance that supports the result of the analysis.

Table 14. Significant Relationship between Components and Characteristics of the Digital Instructional Materials and the Level of Students' Performance

Variables		r-value	Degree of Correlation	p-value	Analysis
Objectives	Written Test	0.017	Negligible	0.853	Not Significant
	Practical Test	0.032	Negligible	0.715	Not Significant
Learning Content	Written Test	0.066	Negligible	0.459	Not Significant
	Practical Test	0.078	Negligible	0.381	Not Significant
Learning Activities	Written Test	0.096	Negligible	0.279	Not Significant
	Practical Test	0.007	Negligible	0.937	Not Significant
Assessment and Evaluation	Written Test	0.190	Negligible	0.031	Significant
	Practical Test	0.100	Negligible	0.260	Not Significant
Multimedia	Written Test	0.057	Negligible	0.524	Not Significant
	Practical Test	0.027	Negligible	0.762	Not Significant
Interactive	Written Test	0.023	Negligible	0.793	Not Significant
	Practical Test	0.016	Negligible	0.859	Not Significant
Accessibility	Written Test	0.011	Negligible	0.906	Not Significant
	Practical Test	0.036	Negligible	0.682	Not Significant
Flexibility	Written Test	0.082	Negligible	0.357	Not Significant
	Practical Test	0.087	Negligible	0.329	Not Significant

**significant at .05 level of significance*

Range	Degree of Correlation
±.0.81 – ±.1.00	Very Strong
±.0.61 – ±.0.80	Strong
±.0.41 – ±.0.60	Moderate
±.0.21 – ±.0.40	Weak
±0.00 – ±.0.20	Negligible

Table 14 revealed the relationship between the components and characteristics of the Digital Instructional Materials and the level of students' performance.

It can be manifested that the components of the Digital Instructional Materials in terms of objectives, learning content, learning activities, and assessment and evaluation convey a *significant* relationship to the level of students' performance in terms of Written and Practical Tests as indicated by the obtained r-values ranging from (0.032) to (0.078) with a *nigligible correlation* and p-value (0.000) which was lower than the 0.05 level of significance that supports the result of the analysis.

CONCLUSION

In view of the findings of the study, the researcher concluded the following:

The researcher, therefore, concluded that the level of components and characteristics of the Digital Instructional Materials and the level of students' engagement, the result were significant. This means that the components and characteristics of Digital Instructional Material achieved the target goal of the digital instructional materials. The teacher should take note of the features of the digital instructional materials, which will heighten the students' engagement. Thus, the hypothesis was rejected.

Moreover, the level of components and characteristics of the Digital Instructional Materials revealed that it has no significant relationship with the students' performance. This means that the level of components and characteristics of digital instructional materials should be kept in students' learning. The teacher must consider the needs and interests of students before developing the instructional material. There was no significant relationship between the components and characteristics of digital instructional materials and the level of students' performance in Empowerment Technologies. It implies that students' performance is carried out when it comes to the utilization of the instructional materials. From this, it means that the hypothesis is accepted.

Recommendations

In light of the conclusions, the researcher recommends that:

1. The grade 11 senior high school student must be given opportunity to enhance their performance in Empowerment Technology using the Digital Instructional Materials.

2. Teachers may adapt the developed digital instructional materials to increase the students' performance in Empowerment Technology.

3. Educators may support the dissemination and adaptations of the developed digital instructional materials to help other students to enhance their level of performance.

4. The future researchers may conduct this kind of study to help learners increase their level of performance not only in Empowerment Technologies but also to other subjects that uses digital instructional materials.

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