MULTIMEDIA EDUCATION, SELF DETERMINATION AND LEARNERS' ENGAGEMENT IN REMOTE DISTANCE LEARNING ENVIRONMENT

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Abstract

The study aimed to determine the relationship of multimedia education, self- determination and learners' engagement in a remote distance learning environment.

The research adopted the descriptive correlational design which includes the 100 out of 154 teachers and se 100 learners of the 10 schools in Dapdapan District under the Division of San Pablo City during the school year 2021-2022. A four-part survey questionnaire was utilized in order to determine and interpret the respondents' perception on multimedia education, self-determination and learners' engagement in a remote distance learning environment.

The results revealed that, there is a positive significant relationship between the multimedia education and the learners' engagement in terms of digital literacy, innovation, multimedia education, and technology management. And a positive significant relationship exists between the respondents' self-determination and the learners' engagement in terms of autonomy, competence and relatedness. Therefore, hypothesis stating that there is no significant relationship between the multimedia education and learners' engagement in a remote distance learning environment was not sustained. Likewise, the null hypothesis stating there is no significant relationship between respondents' self-determination and learners' engagement in remote distance learning environment is not sustained. The result of the Levene's test for equality also reveals that there is a significant difference in the perceptions of the teachers and the learners.

Keywords: *multimedia education   remote distance learning   learners' engagement self*-determination   new-normal

1. Introduction

Education is a process that involves the acquisition of knowledge, understanding, valuing, growing, caring, and behaving in a variety of settings. It can occur "when you sit in your house, when you travel, when you lie down, and when you rise." (Chazan, 2022)

Twenty first (21st) Century Education refers to the skills, technologies and insights that leading-edge educators are using to create learning systems that are better suited to the emerging challenges of the 21st century. Therefore, the emphasis tends to be on new approaches which transcend and outperform older methods of teaching and learning, putting the pressure on educational systems around the world to employ new technology to teach pupils the knowledge and skills they will need in the twenty-first century. Education is at the crossroads of powerful and fast changing educational, technical, and political factors that will define educational systems around the world for the rest of this century. Many countries are attempting to modify the teaching/learning process in order to better prepare students for an information and technology-based society. Multimedia offers a variety of effective methods for changing today's isolated, teacher-centered, text-bound classrooms into rich, student-centered, interactive learning environments. Schools must embrace new technologies and a multimodal approach to teaching and learning. (Ghavifekr, &Rosdy ,2015)

The need for innovation in teaching with the use of multimedia is even more aggravated by the critical global incident that happened when schools closed in most countries last March 2020. It affected over one billion students or 98 % of the worlds' student population. As a result, school education has changed, with the emerging needs of the use of technology for remote teaching and learning. This transition posed challenges to both schools' students and teachers. (UNESCO, 2020)

The World Bank Educational Practice (2020) said that the extended school closures are loss to learning that may further be a loss in human capital and eventually diminish economic opportunities. Affected countries pursued different ways in order to mitigate the loss of learning, one of this is trying alternative delivery to cope with the crisis, thus adapting to this new culture through remote learning.

Dorn et.al (2020) said that the COVID 19 pandemic resulted to the closure of schools all around the world which posed enormous difficulties to educational institutions and had negative impact on the students. Education throughout the world particularly, online schooling is transformed. They also said that this will be long term and resurgent. It is undeniable that the future of education in this phase of the pandemic must be rethought in many ways.

Different publications frequently examine the consequences of digital interventions for both the student and the instructor or trainer, and they are of particular interest to a specific set of designers and teachers interested in technology aided learning. However, the world is currently witnessing an enormous global movement toward remote distance learning. This isn't just a particular interest group; it's the entire population of learning facilitators, many of whom will have had little time to learn about digital technologies in order to leave the physical classroom and continue to give the finest educational experience possible online. (Greener, 2021)

Greener (2021) also mentioned that Remote learning, a term commonly used in schools and institutions' strategic advice for 2020–21, simply refers to learning that takes occur while the student and instructor are not in the same area at the same time. As a result, both synchronous (live) and asynchronous (at various times) learning activities may be included. This may appear to be a straightforward distinction, yet it is frequently misinterpreted. Some university colleagues and students appear to have difficulty distinguishing between distance and time. This is reasonable, given how digital technologies have blurred the line between near and far; we may be physically separated yet still see and converse in real time, which isn't the traditional definition of "remote."

As a result, the dependency to multimedia tools surges with the demand for the dependency with technology in this new normal phase of education. In order to use such a distribution approach, you must have some knowledge of multimedia and the students' experience in such learning environment (Debajyoti et al.,2020). From the 1990s forward, the term "multimedia" took on a whole new connotation, as Satellites, PCs, sound, and video capabilities were combined to create new media. With the advancements in hardware and software, there is a lot of promise. These advancements have the potential to produce better learning environments, taking students' individual specific demands into account. (Atiku,2021)

In the Philippines, The Department of Education has established a delivery method that may be tailored to each learner's needs, regardless of whether or not remote learning is available in their location. According to DepEd Undersecretary Nepomuceno Malaluan, the modality has three types: Modular Distance Learning, where written modules will be distributed to students who do not have access to devices or the internet; DepEd Commons, an online learning network designed to promote alternative learning delivery methods, which students with internet access can use; and TV and radio-based teaching, where educational materials and instructions will be broadcast. The education department has introduced DepEd TV, software that turns self-learning modules into video lessons that can be accessed through IBC13 and Solar Learning Outlets for TV and radio-based instruction. It contains "teacher-broadcasters" who have been trained on how to give classes successfully using pre-recorded films (Cantiga, 2020).

But as these changes are unprecedented and lack preparation, challenges in both sides of the institution and the students and parents arise. Such challenges would be equity gaps, students' security and safety, quality of learning compromised and poor assessment results (Winthrop, 2020). Khalaif et. al (2020) agreed with this stating that COVID-19 crisis negatively influenced student engagement in emergency remote learning because of the emerging new challenges during the learning process.

According to World Bank (2020) children's engagement with remote learning is generally low where parents or caregivers lack any type of education, adding that in several countries, these children were three-to-four times less likely to engage in a learning activity compared to households where parents have tertiary education, as seen in the Philippines and Peru.

Student engagement is defined as students' active participation in educationally successful activities as well as their dedication to educational goals and learning. It is a critical gateway to highly valued educational outcomes such as academic accomplishment (Christenson et al., 2012).

Prior the pandemic, educators were already integrating multimedia learning in their daily classroom discussion and throughout the years it has been proven that it helps improved the students' performance. This is the same with the students' engagement in class as it is one of the crucial parts of the discussion. But with this sudden shift in education paradigm leading to remote learning, the researcher thinks it is our responsibility to study how Multimedia Education and Self-Determination contribute to Learners' Engagement in a Remote Distance Learning Environment.

2. Literature Review

2.1. Multimedia Education

The shift towards remote learning also causes the dependency on multimedia in learning surges. Today's educational technologists often hear and discuss the word "multimedia." Multimedia, is the utilization of a range of educational elements in a single presentation, including audio cassettes, slides, transparencies, filmstrips, motion pictures, still photos, animation, and text. He went on to say that they are a mix of media that are used to convey knowledge to kids. Multimedia-based learning impact the development and increase the socio-emotional and language development of children. The teacher may take the creative approach by enabling children to visualize the shape of an object presented in multimedia-based learning. Multimedia learning can take the form of games, videos for learning, and interactive PowerPoint. (Yafie et.al,2021)

2.2. Self- Determination Theory

Self- Determination Theory explains the dynamics of human need, motivation, and well-being in a social setting. According to the theory, everyone has three universal and psychological demands that drive them to act or not act: autonomy (feeling self-governed and endorsed), competence (feeling competent and effective), and relatedness (feeling connected, loved, and interacting). Students are actively motivated to engage in learning tasks when pedagogical design appropriately fulfills these psychological needs. Students are more likely to participate in learning in classrooms that satisfy these three psychological demands. (Chui, 2021)

2.3. *Learners' Engagement*

According to Abou- Khalil et. al (2021) For children and instructors in developing nations, who have few resources, the adjustment from classroom to remote learning has been particularly difficult and frustrating. Low internet connectivity, limited access to technology, limited resources, and a lack of financial support are all major barriers to synchronous interactions and learners' engagement in online education. This is important because engaging students is critical to reducing their feelings of isolation and maintaining their desire to learn, satisfaction, and academic achievement.

2.4. Remote Learning

Remote learning refers to synchronous or asynchronous instruction provided in a place outside the classroom. Synchronous learning means that students are connected to learning experiences where a teachers' immediate feedback is possible. Asynchronous or self-directed learning means that students can learn at their own pace and chosen time. Remote learning takes

an array of forms ranging from paper-based take-home packages to online platforms. Remote learning is also possible through a variety of different channels, such as mobile phones, television, radio, and tutors. Remote learning allows students and teachers to stay connected and engaged with the curriculum while working from their homes. (World Bank, 2021)

2.5 Conceptual Framework

The research was anchored on the concept as proposed by Khan in 2015. Multimedia Aided Teaching (MAT) has altered the teaching and learning process. Lessons are more effective and clearer when delivered in this manner. MAT's strength is its multisensory capabilities, as it engages many of the learners' senses. Multimedia is an innovative and effective teaching and learning tool since it stimulates students to study while also assisting them in comprehending the subject presented. It aids teachers in efficiently delivering information to students.

This supports the Multimedia Learning Theory of Mayer and Moreno in 2003. It states that a major issue for instructional designers is that meaningful learning might include a large amount of important cognitive processing, while the cognitive resources of the learner's information processing system are severely limited. As a result, multimedia training should be organized to avoid cognitive strain that is unnecessary.

Similar to the cognitive theory of multimedia learning, which suggests that multimedia can help students who are having trouble learning. The cognitive theory of multimedia learning claims that using multimedia can improve learning. This necessitates teachers and/or students selecting acceptable words and images, then arranging them. Words and pictures are separately transformed into unambiguous mental models, which are then linked together and combined with existing information. (Castro-Alonso et al., 2021)

It is also related to Self-determination theory (SDT), proposed by Deci and Ryan (2020). It is a macro-level theory of human motivation that aims to explain the dynamics of human need, motivation, and well-being within a social context. The theory suggests that all individuals possess three universal and psychological needs autonomy such as feeling self-governed and self-endorsed; competence which includes feeling competent and effective; and relatedness like feeling connected, loved, interacted that move them to act or not to act. Individuals experience greater psychological well-being through the satisfaction of these three psychological needs, and conversely feel highly fragmented, isolated, and reactive when their needs are not met. Student engagement has been mostly seen as an outcome of motivational processes; fostering different types of motivation is an energy source that activates students to be engaged in learning activities. Therefore, it lies within the domain of SDT.

Another concept is from Tang et. al, 2021. They proposed that student engagement has mostly been conceptualized as a multidimensional construct. The main dimensions of student engagement have included emotional engagement, cognitive engagement, and behavioral engagement. In line with the work engagement literature, school-work engagement has also been conceptualized as energy, dedication, and absorption in studies/school. However, the most dominant perspective on student engagement during the past decade has been the concept of multidimensional engagement, including aspects such as emotions, cognitions, and behaviors. Emotional engagement encompasses the positive affective reactions and attitudes attributed to school activities, such as flow experiences, enjoyment, liking, belonging, and happiness. Cognitive engagement refers to the degree to which students exert the mental effort needed to under-stand complex ideas and master difficult skills, and the extent to which students show a desire to go beyond the requirements, including willingness to do high-quality work. Behavioral engagement describes students' participation in classroom and school activities and includes attention, concentration, and on-task behavior, and broader patterns of participation such as attending extracurricular activities and school.

3. Hypotheses

The following hypotheses were posited in the study:
H1. There is no significant relationship between the multimedia education and learners' engagement in a remote distance learning environment.
H2. Risk management practices are not significantly related to augmenting organizational performance in public elementary schools.
H3. There is no significant difference between the perception of the teachers and the learners in terms of Multimedia Education and Self-Determination in a remote distance learning environment.

4. Methodology

The descriptive correlation survey method was used in this study. The researcher utilized a survey questionnaire as the primary source of gathering data from the respondents in order to determine and interpret the relationship between multimedia education, self-determination and learners' engagement in a remote distance learning environment. The respondents of the study included the 100 teachers and selected pupils of the 10 schools in Dapdapan District under the Division of San Pablo City during the school year 2021-2022.

The survey- questionnaire was divided into four parts: The first part consists of the profile of the respondents. The second part consists of Multimedia Education related questions. The third part of the questionnaire covers the level of self- determination. The fourth part of the questionnaire shows the student engagement related questions.

The researcher first consulted her adviser, subject specialist, and the other members of the panel of examiners regarding the questionnaire before it was actually administered to the respondents. Validation of the questionnaire was undertaken to make

sure that the items were clear and well understood by the respondents. The questionnaire was checked and validated by the external and internal panel of validators with relevant experiences and knowledge regarding the topic of the study.

Upon the approval of the external panel a reliability test of the instrument was done with a sample population of 30 teachers and 30 learners as the respondents. The reliability of the instrument was measured using Cronbach's Alpha.

After the approval of the contents of the questionnaire and the reliability test, the researcher sought permission from the coordinating District Supervisor of Dapdapan District to conduct the study. After which, the researcher personally asked permission from the school heads of the ten selected schools. The distribution and administration of the survey questionnaire immediately followed.

The accomplished questionnaires were retrieved, tallied, summarized, and submitted to the authorized faculty for the statistical treatment of data.

5. Results and Discussion

Table 1. Perceived Multimedia Education

Indicators	Teacher			Learner		
	Mean	SD	VI	Mean	SD	VI
1. Digital Literacy	4.77	.404	HP	3.92	.959	SP
2. Innovation	4.28	.587	SP	3.81	0.998	SP
3. Multimedia Resources	4.37	.650	SP	3.95	.980	SP
4. Technology Management	4.35	.606	SP	3.95	.980	SP
Overall	4.44	0.562	SP	3.91	0.979	SP

Legend: 5.0-4.50 Highly Perceived (HP) 4.49-3.50 Substantially Perceived (SP) 3.49-2.50 Moderately Perceived (MP)2.49 - 1.50 Slightly Perceived (SP)1.49-1.0 Not Perceived (NP)

The table above shows the respondents perceived multimedia education in terms of digital literacy. It shows that the teachers are "Highly Literate" in utilizing computers and technology. The table also shows us that the learners are "Literate" using computers. This implies that most of the respondents are capable and well-equipped in terms of using the technology around them specifically the computer and software applications that are used in our day-to-day life as the education shifted from face-to-face to distance remote learning due to the pandemic. This also implies that despite the diverse socio-economic status of their families they are still able to learn the basic skills they need in order to survive in this unprecedent change. Learners today have access to the Internet, either at low or high speeds, from home or from internet cafes, and the need software skills to find information sources, manage their relevance and validity, process them efficiently, and assist in helping solve problems related to their academic improvement program.

The table shows that most of the respondents perceived multimedia education in terms of Innovation as "Substantially Practiced". It also presents that learning through online games has the lowest mean in both the teachers and the learners through this it can be inferred that although lesson gamification is an effective innovation in delivering and is being utilized by some of the teachers in the district, not all learners and teachers were able to cope up to this trend. This is because not all schools have access to applications and materials needed to pursue such innovation, in addition to this not all learners always have access to these materials. This implies that new ways and innovative strategies in order for the learners to be engaged in the teaching learning process despite the sudden shift of the educational paradigm were made and being implemented by their teachers and the schools themselves. This also implies that through these innovations despite the different factors such as the location of their school, internet connections and many other that may hindrance their learning in this new normal education they were still given the supports that they need in order to learn.

The table also shows that most of the respondents perceived multimedia education as to multimedia resources as "substantially perceived". It shows most of the respondents have cellular phone or tablets that they use during class. The table also shows that although modules are and can be uploaded to google classroom, some learners does not have access or the capacity to access google classroom. This implies that although teachers and learners have access to different multimedia resources most of the learners only have cellular phones that they use in communicating with their teachers through Facebook messenger. Therefore, their access to online resources such as google classroom is limited and only few are able to. Some schools in the district that are located in far areas don't even have signals to access online platforms like this.

The table above shows that the respondents' perceived technology management in multimedia education as "Substantially Perceived". This implies that not all learners enrolled in Dapdapan District has access to strong internet connection. Example of this are the learners of School A although this remote part of the city now has access to the electricity, their internet signals are still poor and unstable. Learners only rely on the weekly printed modules that are being distributed by the teachers. The result also implies that orientations on ICT integration although practice needs to be re-introduced to stakeholders. This also implies that attempts to bridge the gap caused by the pandemic in our educational system are being made and practiced by the department.

Table 2. Level of Self- Determination

Indicators		Teacher			Learner		
		Mean	SD	VI	Mean	SD	VI
1.	Autonomy	4.67	0.38	VHSD	4.1	0.934	HSD
2.	Competence	4.168	0.68	HSD	3.73	0.966	HSD
3.	Relatedness	4.56	0.466	VHSD	4.27	0.972	HSD
Overall		4.466	0.509	HSD	4.03	0.957	HSD

Legend: 5.0-4.50 Very high Self-Determination (VHSD) 4.49-3.50 High Self-Determination (HSD) 3.49-2.50 Moderate Self-Determination (MSD) 2.49 -1.50 Low Self-Determination (LSD) 1.49-1.0 Very Low Self-Determination (VLSD)

The table above shows that Self-determination in terms of Autonomy was perceived by the teachers as "Very High Self-Determination". It also shows that the perception of the students in self-determination as of autonomy is "High Self-Determination". The result implies that despite of the pandemic, the respondents especially learners were given the sense of feeling in control of their own behaviors and goals. This is the extent to which an individual perceives their actions as originating within themselves, even if an action is at the request of others. This may be connected to their current learning modalities considering that all schools under the district is using modular learning modality. The learning modalities that the learners in the district allow them to feel that they are able to participate and performed task independently since the printed answer sheet and modules are distributed and retrieved weekly. Teachers in schools encouraged their learners to ask questions thru different mode of communication specially during their online kumustahan, thus allowing the learners that they are ready to do their task. The table also shows that the respondents perceived self-determination in terms of competence as "High Self-Determination". This implies that despite the current situation of our educational system and dependency to technologies the learners feel the need to gain mastery of their task and learn new skills. This also implies that the teachers provide their class with enough motivation and experience in order for the learners to stay engage despite the remote distance learning environment. The result also shows that, despite having a lot of freedom in modular modalities the learners still prefer learning inside the classroom. It was easier for the learners to learn if they are inside the classroom and can directly have an interaction with their classmates and teachers. The Department of Education has foreseen such issues in regard with the modular learning. Thus, with the current situation of the pandemic and restrictions are being lift up, the department issued Deped Order no. 17, s. 2022 known as progressive expansion of face-to-face classes. The Deped Order has the guidelines on how to properly execute the face-to-face classes. The table shows that self-determination in terms of relatedness was perceived by the learners as "High Self-Determination". The table also shows that the teachers perceived self-determination as to relatedness as "Very High Self-Determination". This implies that despite being in a remote distance learning environment the learners still feel the sense of belongingness and attachment towards their class and everybody around them. This also implies that the teachers were able to give their learners the assurance that they need in order for them to feel that they belong to the group. Most school in the district conducts weekly online kumustahan, wherein the teachers meet online with their learners using the most convenient ways of communication, mostly using messenger room. The teachers will then discuss the lessons on the modules, interact with the learners by asking them questions and allowing them to contribute to the lesson.

Table 3. Level of Learners' Engagement

Indicators		Mean	SD	VI
1.	Behavioral Engagement	4.24	0.934	HE
2.	Cognitive Engagement	4.1643	0.8485	HE
3.	Emotional Engagement	4.0983	0.8342	HE
Overall		4.16753	0.87225	HE

Legend: 5.0-4.50 Very high Engagement (VHE) 4.49-3.50 High Engagement (HE) 3.49-2.50 Moderate Engagement (ME) 2.49 -1.50 Low Engagement (LE) 1.49-1.0 Very Low Engagement (VLE)

Table shows that learners' engagement in terms of behavioral engagement is perceived as "High Engagement". This implies that despite the current situation of the educational system the learners are still willing to participate in school and social activities. Learners are still excited to participates in different programs and strive hard to do well in school by participating in their online kamustahan and finishing their learning task on time. This also implies that teachers are able to create and provide activities that will enhance the learners' behavioral engagement examples of such activities are performance tasks using the learners' favorite social media flatforms, having online contest like quiz bee, poster making and a lot more activities, that kept learners remain engage.

This table shows that the learners' engagement in terms of cognitive engagement was perceived as "High Engagement". This implies that the leaners are able to comprehend new ideas, and master intellectually challenging skills amidst the situation. They try to understand the lessons using their prior knowledge through careful reading and connecting these lessons on their own experiences. This also implies that because they're cognitively engage to the lesson the teachers are able to provide activities that will challenge the cognitive ability of these learners.

The table shows that the respondents perceived learners' engagement in terms of emotional engagement as "High Engagement." The general result shown in this table implies that learners show positive emotional reactions to their classmates, teachers and everybody around them. It shows that despite being in a modular learning modality they still feel the emotions they would normally feel during examinations. It also implies that learners look forward into receiving new answer sheets and joining their

online kamustahan to see their classmates and teachers and interact with them. Lastly, the table also shows us that despite the learners' positive perspective on their emotional engagement they still prefer to learn in a face-to-face learning environment than in a remote distance learning environment. This may be due to the emotional comfort that a classroom gives us when we are learning.

Table 11. Relationship between Multimedia Education and Learners' Level of Engagement

Multimedia education	Level of Learners' Engagement			
	Behavioral	Cognitive	Emotional	Overall learner's engagement
Digital Literacy	.475**	.502**	.381**	.474**
Innovation	.607**	.629**	.599**	.639**
Multimedia Resources	.645**	.715**	.693**	.714**
Technology Management	.562**	.600**	.527**	.589**
Overall Multimedia Education	.633**	.676**	.609**	.669**

**. Correlation is significant at the 0.01 level (2-tailed).
Verbal Interpretation of r-values: $\pm$1.0-Perfect positive +/- association; $\pm$0.8 to $\pm$1.0-Very strong +/- association; $\pm$0.6 to $\pm$0.8-Strong +/- association; $\pm$0.4 to $\pm$0.6-Moderate +/- association; $\pm$0.2 to $\pm$0.4-Weak +/- association; 0.0 to $\pm$0.2-Very weak +/- or no association

The tables show the result of the test of correlation among the variables of Level of Learners' Engagement being measured in terms of Behavioral, Cognitive and Emotional Engagement (DV) and the perceived Multimedia education with 4 variables (IV). The r-values found in the table show significant findings having 2 asterisks (**) and are verbally interpreted ranging from the weak association value of $\pm$.20-.40 to strong +/- association ($\pm$.6 to +.8). They are being tested at $p<.05$ significant level.
The result implies that there is a significant relationship between multimedia education and learners' engagement and is perceived to have strong positive association. This implies that multimedia education is a necessary factor in promoting learners' engagement. Variables under multimedia education such as digital literacy, innovation, multimedia resources, and technology management are all crucial in learners' engagement in a remote distance learning.
Because of the imposition of social constraints during the unknown COVID-19 Pandemic, the only communication and social activities are inevitably substituted with digital platforms, including learning activities, stakeholders' grasp of digital literacy has been increasingly vital recently. Similar to this is the conclusions of Sinegar (2022) study, digital literacy has a positive and significant influence on learners' engagement. Innovations that will make the lessons more accessible and easier to understand is also a crucial part in ensuring that the learners are engage in all three levels. If the lessons are made more interactive and accessible the learners will very much likely look forward into the next task, it will be easier for them to master the lesson and therefore they will not feel left out and will have positive interaction with their classmates and teachers. This is similar to the result of Thiry and Hug (2021) study wherein they concluded that equitable student engagement in educationally enriching activities is vital for broadening participation in computing, yet is challenging to maintain in remote environments. Multimedia resources is also significantly important in improving the learners' engagement. Having access to different types of multimedia resources has been proven to enhance the learners' engagement prior to the pandemic. This implies that learners who have access to gadgets, internet connection, and different searching sites have higher tendency to feel excited and enjoy learning, they will master the lesson faster since they are able to have access to video lessons provided by the teachers and they feel more connected during their online kamustahan/ discussion. Technology Management in this shift of educational paradigm is has big effect in ensuring the learners' engagement. The availability of power supply and stable internet connection allows these learners to communicate to their teachers and classmates this way the feeling of being left out is avoided. Having been provided with learning materials such as complete set of modules, additional books, gadgets and additional access video lessons allows the student to understand and master the lesson. Learners' engagement in academic learning tasks, or the lack of it, is a common concern among parents, educators, and researchers. Individual cognitive and motivational resources of pupils can become inert without interaction, having little impact on learning and performance. When these resources become operational through involvement in relevant learning tasks, on the other hand, students' true competencies may be revealed.

Table 12. The Relationship between Self-determination and Learners' Level of Engagement

Self determination	Level of Learners' Engagement			
	Behavioral	Cognitive	Emotional	Overall learner's engagement
Autonomy	.806**	.769**	.728**	.804**
Competence	.706**	.712**	.735**	.750**
Relatedness	.862**	.822**	.828**	.876**
Overall Self-determination	.846**	.820**	.816**	.866**

**. Correlation is significant at the 0.01 level (2-tailed).
Verbal Interpretation of r- values: $\pm$1.0-Perfect positive +/- association; $\pm$0.8 to $\pm$1.0-Very strong +/- association; $\pm$0.6 to $\pm$0.8-Strong +/- association; $\pm$0.4 to $\pm$0.6-Moderate +/- association; $\pm$0.2 to $\pm$0.4-Weak +/- association; 0.0 to $\pm$0.2-Very weak +/- or no association

The tables show the result of the test of correlation among the variables of Level of Learners' Engagement being measured in terms of Behavioral, Cognitive and Emotional Engagement (DV) and the perceived Self-Determination with 3 variables (IV). The r-value of the overall correlation of Learners' engagement and Self-determination is perceived to have a very strong positive association. This implies that the learners' self-determination has significant effect to their engagement. Student engagement is largely seen as the product of motivational process, the different activities given by the teachers are allowing the students to stay engage to the class. Therefore, the Learners' engagement lies within the domain of self-determination.

Autonomy in learning gives the learners the feeling of in control, which allows to them to behave on their accord without realizing that they are actually being told so. Being in control allows them to be able to learn on their own time and master the lesson. Therefore, they always feel connected to their classmates and teachers. Allowing the learners to have competence not just on themselves but also in their teachers and lesson also boost their engagement. Once that the student knows that he has the ability to be able to master a lesson he will have the confidence to answer all the learning task and join the online discussion thus they engage more.Relatedness is known for being able to feel connected, when the learners feel that sense of belonginess they are more likely to get engage with their teachers and classmates. When a learner feels safe in an environment whether online or face-to-face, they are more at ease in voicing out their opinions.

Table 13. The Difference in the Perception of the Teachers and Learners in terms of Multimedia Education and Self-Determination

	Mean		Levene's Test for Equality of Variances		t-test for Equality of Means			
	Teacher	Learner	F	Sig.	t	df	Mean Diff	Std. Error Diff
Innovation	4.28	3.81	15.926	<.001	-4.055	198	.470	.116
Digital Literacy	4.77	3.92	37.879	<.001	-8.210	198	.855	.104
Multimedia Resources	4.37	3.95	7.379	.007	-3.599	198	.423	.118
Technology Management	4.35	3.95	19.639	<.001	-3.266	198	.367	.112
Overall Multimedia education	4.44	3.91	23.497	<.001	-5.242	198	.529	.101
Autonomy	4.67	4.10	20.599	<.001	-5.676	198	.573	.101
Competence	4.168	3.73	9.133	.003	-3.650	198	.431	.118
Relatedness	4.56	4.27	18.573	<.001	-2.721	198	.293	.108
Overall Self determination	4.466	4.033	19.861	<.001	-4.335	198	.433	.010

To test the difference the perceptions of two groups of respondents, learners and the teachers, the use of an independent samples t test was applied. It is applicable when we want to compare the means of two groups. This test will determine whether two population means are different. This procedure is an inferential statistical hypothesis test, meaning it uses samples to draw conclusions about populations.

The findings of this test are presented in the table above. Results reveal that there is significant difference in the perceptions of the two group of respondents when tested at the significant level of the probability less than .05. If the p-value is less than the significance level (e.g., 0.05), the null hypothesis can be rejected. The difference between the two means is statistically significant. The sample provides strong enough evidence to conclude that the two means of the two groups of respondents are not equal.

Using the Levene's test for equality of means, the difference in the perception between the teachers and the learners in multimedia education variables and self- determination variables is statistically significant. This implies that, the teachers and the learners have different perspective in terms of innovation. This may be due to the different experiences of the teachers and learners as not all learners have access to the innovations mentioned in the survey. Multimedia resources maybe available at school for the teachers to use but most of the learners specifically those who are in the far areas where signals are limited does not or have very limited access to the multimedia resources mentioned in the instrument specially the online materials. The table also shows that digital literacy has the highest mean difference among the variables. This implies that despite being digital native of the learners the teachers still have more skills than the learners when it comes to computer as they also have more access to those technology.

The result also shows that there is a significant difference in the perception of the teachers and the learners in their level of self-determination. This implies that teachers and learners have different drive in accomplishing their goals. This may be due to the difference of their level of understanding of the situation. Teachers are more oriented as to what is really going on in our educational system while learners are only aware of the general ideas. It shows that although modules allow the learners to feel autonomous in learning they can still feel the pressure of having to multitask if there are too many learning tasks or if they did not manage their time well. Learning on their own terms may have allowed them to feel competence to master new ideas although they still prefer and see learning easier when it is done inside the classroom. The table also shows us that the relatedness has the least mean difference between the two respondents. This implies that despite being in a remote distance learning environment, both the teachers and learners still feel connected to each other.

5. Findings

The study reveals the following findings:

1.   The learners' perceived their multimedia education in terms of digital literacy as "Literate" while the teachers perceive it as "Highly Literate". Multimedia education as to innovation was perceived as "Substantially Practiced". Access to multimedia resources was perceived by the teachers as "Highly perceived" while learners perceived it as "Substantially Perceived". Technology Management was perceived as "Substantially Observed".

2.   The learners' self-determination in terms of autonomy is revealed as "High Autonomy" while the teachers' self-determination in terms of autonomy is perceived as "Very high Autonomy". The result also revealed that the respondents' self-determination as to competence is perceived as "High Competence". It was also revealed in the result that the teachers' self-determination as to relatedness is perceived as "Very high Relatedness" while the learners self-determination as to relatedness is "High Relatedness."

3.   Most of the respondents reveal that the level of learners' engagement in terms of behavioral engagement is manifested as "High Behavioral Engagement". Their Cognitive Engagement was also revealed as "High Cognitive Engagement" while their Emotional Engagement is revealed to be "High Emotional Engagement".

4.   There is a positive significant relationship between the multimedia education and the learners' engagement in terms of digital literacy, innovation, multimedia education, and technology management.

5.   A positive significant relationship exists between the respondents' self-determination and the learners' engagement in terms of autonomy, competence and relatedness.

6.   There is a significant difference between the perception of the teachers and the learners in terms of multimedia education, self-determination and learners' engagement in a remote distance learning environment.

6. Conclusions

Based on the findings of the study, the following conclusion was formulated:

1.   The hypothesis stating that there is no significant relationship between the multimedia education and learners' engagement in a remote distance learning environment was not supported by the findings of the study when the test of correlation was made and therefore not sustained.

2.   Likewise, in the test of correlation between the respondents' self-determination and learners' engagement shows a positive significant relationship therefore the null hypothesis stating there is no significant relationship between respondents' self-determination and learners' engagement in remote distance learning environment is not sustained in the study.

3.   Similarly, the null hypothesis there is no significant difference between the perception of the teachers and the learners in terms of Multimedia Education, Self-Determination and Learners' Engagement in a remote distance learning environment was not supported by the result of the study when levene's test for equality of mean applied, therefore was not sustained.

7. Recommendations

Based on the findings and conclusions presented, the researcher has arrived at the following recommendations:

1.   School Administrator may provide trainings and seminars to update the knowledge of their teachers regarding new trends in multimedia learning and in developing their self-determination to improve the students' engagement in remote distance learning. Thus, providing a deeper orientation about the ICT integration to teachers and other stakeholders. They may also provide necessary equipment and materials needed in making this new innovation such as the gamification of the lesson.

2.   Teacher may attend trainings and seminars in using multimedia and reflect on how their self-determination affects their students to further improve the learners' engagement in a remote distance learning environment. Orient parents and learners regarding programs that involves ICT orientation. They may also look into uploading instructional materials in other platforms that will make it accessible for the learners.

3.   Future researchers may use this study as reference in conducting parallel studies with additional participants and consider studying other aspects of the variables that were not included in the study in order to continue to validate the relationship between multimedia education and self-determination and learners' engagement in a remote distance learning environment.

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