Perception of Teachers and Learners on the Utilization of the Science Supplementary Learning Videos (SLV) in Masbate Province

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ABSTRACT

This study specifically determined the perception of STE teachers and learners on the supplementary learning videos along content, engagement, convenience, and technical barriers. This study also examined the impacts of SLVs among STE teachers and learners of SDO Masbate Province. The research methodology for this study involved purposive sampling comprised of five (5) students and five (5) teachers from Science, Technology and Engineering (STE) implementing schools who had experienced using the supplementary learning videos provided by the Masbate Province Division. The data collection process began with the development of research instruments, including interview tool. The interview questions focused on four preconceived themes: content, convenience, engagement, and technical barriers, as well as the assessment of the impacts of the supplementary learning videos on student learning. The researchers used a semi-structured interview approach to allow for in-depth data collection, including follow-up questions. The interview was administered through face-to-face interviews. Data reliability and privacy were ensured through consent from the respondents, and strict adherence to ethical guidelines. The findings include four emerging themes highlighting the perceptions of the STE students and teachers on the use of SLVs namely: responsive instructional materials, aesthetic appeal, user-friendliness, and accessibility. Two emerging themes were determined on the impacts of SLVs, namely: complementary to existing instruction; and, instructional aid. The results were significant to teachers, learners, school administrators and future researchers to give awareness and best practices to have immersive learning experience utilizing the supplementary learning videos.

Keywords: Science Technology and Engineering, Science Supplementary Learning Videos, Perceptions, Impacts

INTRODUCTION

The era of digitalization caused several sectors to undergo significant transformations including the educational sector prompting teachers to adopt to various learning modalities. The integration of technology in education created significant changes with distance learning (DL) emerging as a prominent approach that allows learners to learn through self-paced modules and videos even without face-to-face interaction. Distance learning (DL) is a type of distance education where students learn through offline using self-paced modules and videos that are delivered remotely and online learning through several digital platforms used in education. This shift towards digitalization learning platforms provided flexibility for learners, enabling them to balance their studies with their other responsibilities at home.

However, most students were constrained by many challenges and struggles in complying with the tasks using it as revealed by the study of Aguilos and Bustillo (2022). These include internet connectivity problems, inadequate learning resources, difficulty understanding the module contents and assessment instructions, overloaded remote learning tasks, poor learning environment, and mental health problems. It was further supported by a study conducted by the Philippine Normal University wherein it was found that the use of printed modules as a mode of distance learning during the new normal had some disadvantages for students with learning difficulties. The study found that students struggled with understanding the instructions and the content of the modules,

which made it difficult for them to complete their assignments. Similarly, science teachers of DepEd- Masbate Province Division received modules from the students with incomplete answers and there were a few which were unanswered during the retrieval phase of distance learning based on the consolidated reports of the schools' BE-LCP. This had been the scenario during the first year of implementation of distance learning in Masbate Province Division. Thus, video lessons together with printed materials were provided during the second year of its implementation to address students' learning difficulties.

The Department of Education SDO-Masbate Province has implemented Science Supplementary Learning Videos (SLV) as part of its initiative to address learning gaps among learners and improve the educational outcomes. This video learning materials were made and validated by the key teachers from Masbate Province Division and were given to the learners as part of the solutions to reducing the learning gaps through video learning materials.

This initiative can be supported by Goh, et al. (2019), in which it was emphasized that video lectures can improve student engagement, motivation, and learning outcomes in distance learning settings. Furthermore, Lee and Lim (2018) showed that video-based learning can increase student engagement, critical thinking, and knowledge retention in distance learning. A 2015 study conducted by software company Kaltura concluded that 93% of teachers believe that the use of educational videos improves the learning experience. This strategy is believed to have a positive impact among learners in the modular distance learning, which then can be applied in today's time in which blended learning is given emphasis in the teaching and learning process especially in times of unprecedented scenarios.

The study of Galatsopoulou, et al. (2022) revealed that students have positive attitudes toward video-based learning, and all factors were significantly related to the intention of use. Bantillo (2024) utilized video lessons as part of the instructional materials provided to the learners and it was found effective in enhancing the students' conceptual understanding, critical thinking skills, creative thinking skills and interest towards Physics. Richardson et al. (2021) found that the majority of students had positive perceptions of online learning, including video lessons, during the new normal. They appreciated the flexibility and convenience of learning from home and felt that they were able to stay on track with their coursework. Wang and Chen (2021) examined the effectiveness of video lessons in online learning and found that students had positive perceptions of video lessons, including their usefulness in explaining complex concepts and improving engagement. Additionally, Utami and Oktaviani (2021), found out that students had positive experience when using video as medium in teaching and learning English as a foreign language.

Moreover, a study conducted by the University of Santo Tomas (UST) in the Philippines found that students perceived video lessons as more effective in terms of learning compared to printed modules. However, the perception of students towards video lessons varies, depending on several factors such as their age, socioeconomic status, and previous experience with remote learning. For some students, video lessons were a welcome change as they found it easier to manage while for others it was a struggle to understand the video itself.

Since there is no existing study in the division about the perception of STE learners and teachers on the utilization of SLV, it is in this light that the researchers came up with the idea to conduct such a study. The data gathered from this study can be used by the Curriculum Instruction Division, video lessons developers and editors, principals, and teachers to identify the strengths and weaknesses of the originally crafted video lessons by key science teachers in the Division during the new normal. Thus, the information obtained can be used to improve the quality of video lessons and make them more engaging and effective based from the learner's and teachers' perceptions. In this way, it can be ensured that the quality education which is considered essential for all people of any age group, race, and religion can be given emphasis for a more meaningful and engaging learning experience among learners.

The study aimed to determine STE students' and teachers' perceptions on the developed supplementary video lessons, along content, engagement, convenience, and technological barriers; and assess the impacts of video lessons in promoting student learning during the implementation of distance learning. The respondents of this study were the STE students and teachers who have experienced utilizing the supplementary video lessons in the Division of Masbate Province. Moreover, this study covered supplementary science video lessons that were

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created during the implementation of distance learning and was conducted to STE learners and teachers who have experienced utilizing supplementary science video lesson.

Statement of the Problem:

The study aimed to determine the perceptions of Science, Technology, and Engineering (STE) teachers and students on the utilization of supplementary learning videos (SLV).

Specifically, this study sought to find answers to the following problems:

1. What are the perceptions of science, technology, and engineering (STE) learners and teachers on the supplementary video lessons along:

a. content;

b. engagement;

c. convenience; and

d. technical barriers?

2. What are the impacts of SLVs in promoting student learning?

Scope

This study focused on the Science, Technology, and Engineering teachers' and learners' perceptions on the utilization of supplementary learning videos. This study was conducted among 10 STE learners and teachers from grades 7 to 10 of STE schools who have experienced utilizing supplementary video lessons provided by DepEd SDO Masbate Province. The study covered the perceptions of science, technology, and engineering (STE) learners and teachers on the supplementary learning videos along content, engagement, convenience, and technical barriers. Furthermore, the study determined the impacts SLVs in promoting student learning.

The data gathered from this study served as basis for future improvement and enhancement of the developed and will be developed supplementary video lessons that will help improve quality and effectiveness in teaching science subjects in Masbate Province Division.

This study did not cover the newly established STE implementing schools specifically during the implementation of distance learning and those STE learners and teachers who have not experienced utilizing the supplementary video lessons as part of the teaching and learning process.

MATERIALS AND METHODS

This part presents the materials and methods applied in this qualitative study. This includes the sampling method, research design, data collection and analysis.

Sampling Method

The respondents of the study are five (5) teachers and five (5) students from STE implementing schools who have experienced utilizing the supplementary learning videos of Masbate Province Division as part of the teaching and learning process. Purposive sampling method was employed in the conduct of the study to ensure that only the STE teachers and students who have experienced utilizing the supplementary learning videos were part of the study.

Research Design

This study employed qualitative research design. Bhandari (2020) provided a definition of qualitative research as the process of gathering data and analyzing textual, video, or audio materials obtained from participants in order to gain insight into thoughts, experiences, and concepts. The study utilized qualitative approach in which the respondents participated in an interview. Responses from the interview were transcribe for analysis.

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Data Collection and Analysis

Upon the approval of the Schools Division Superintendent on the proposal of the study, the development of research instruments such interview tool to be given to the respondents followed.

Set of validators were selected to evaluate the validity of the developed interview tool. The interview questions focused on the four (4) preconceived themes, namely: content, convenience, engagement, and technical barriers along on the assessment of the impacts of supplementary learning videos in promoting student learning. The researchers employed semi-structured interview to allow follow up questions to the respondents for a more in-depth data. Adams (2015) purported that semi-structured interviews are ideal for a variety of important activities, particularly when some of the open-ended questions require follow-up inquiries. The survey questionnaire for the demographic profile of the respondents was developed by the researchers subject for validation by the experts.

The semi-structured interview and survey questionnaires were administered to the respondents through face to face for STE implementing schools. Consent to gather data from the respondents was given higher consideration to ensure the privacy of the data of the respondents.

The responses of the participants were analyzed through coding and thematic analysis. Emerging themes were identified and discussed in this study.

RESULTS AND DISCUSSION

In this study on STE teachers' and learners' perceptions of supplementary learning videos, the preconceived themes were content, engagement, convenience, and technical barriers. The researchers used these themes as a framework to guide their analysis.

During the analysis, four (4) emerging themes had been identified from the perceptions of teachers and students in the use of SLVs and two (2) emerging themes were identified on the impacts of SLVs, going beyond the initial preconceived themes. These emerging themes were not originally anticipated but became evident through the examination of the data. Both preconceived themes and emerging themes contribute to the overall findings and interpretations of the study, providing a comprehensive understanding of the participants' perceptions. Here are the emerging themes of this study:

Perceptions on the supplementary video lessons

Responsive Instructional Materials

Self-learning videos (SLVs) have gained popularity as an additional educational resource, offering learners freedom and convenience in accessing instructional content. Nevertheless, the efficacy of SLVs relies on various pivotal criteria, including the quality of the material, visual components, textual delivery, employment of green screen, and audio excellence.

In this study the STE learners find the supplementary learning videos (SLVs) easy to understand due to the simplicity of the content.

"I clearly understand the lessons since some of my fellow students' parents are busy, so they were not taught by their parents that is why these videos were really of great help…" (L1)

"The SLVs that we watched are good because the lessons were discussed in detail and with visualization that is why we easily understand the lesson. It just needs some activities that are a little bit difficult to challenge students." (L2)

"It made teaching a little easier because of the supplementary videos that can be given to the learners with the concepts clearly discussed." (L3)

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The study revealed that learners find learning easy through the SLVs. Based form the learners' responses, it can be denoted that concepts were easily understood with the help of the supplementary learning videos. These results are parallel to that of the findings of Warschauer (2006) and Spektor-Levy and Gronot-Gilat (2012) highlighting the better performance of learners exposed to computer technology than those learners who are merely exposed with traditional teaching. However, it's important to note that while simplicity can be helpful for certain learners such those in the regular program, it may not be suitable for learners at more advanced level like those in the STE program.

On the other hand, the STE teachers noted that some topics lacked the necessary content depth particularly for Science, Technology, and Engineering (STE) learners.

"Also, some contents need to be discussed deeper for us." (L4)

The SLVs based from the conducted interview failed to explore in sufficient details for some STE concepts, which highlights the need for separate SLVs for STE learners which is more thorough and comprehensive in their coverage, ensuring that each topic is adequately explained and explored to provide a deeper level of understanding for STE learners. It must be tailored to meet the needs of STE learners by incorporating more in-depth explanations, advanced examples, and practical applications specific to the STE field. Furthermore, it has to include additional resources, such as supplementary readings or links to external references, to further support STE learners in expanding their knowledge beyond the videos. This supports the findings of Pleasants, Tank and Olson (2021) requiring teachers to provide instructional activities that are closely aligned with scientific subject to enable students to apply and enhance their comprehension of relevant concepts specially for science, technology, and engineering students.

The need to have a separate SLVs for STE is based on the understanding that STE subjects often require a more in-depth exploration of concepts and practical applications. By having dedicated SLVs for STE learners, teachers can provide content that is more comprehensive, thorough, and aligned with the specific needs of STE education. This approach ensures that each topic is adequately explained and explored, promoting a deeper level of understanding. Additionally, incorporating more in-depth explanations, advanced examples, and practical applications specific to the STE field supports the idea of enhancing the learning experience for STE learners. By going beyond surface-level explanations and incorporating advanced content, teachers can challenge STE learners and help them develop a deeper understanding of complex STE concepts. This approach fosters critical thinking, problem-solving skills, and prepares STE learners for higher education and future careers in STEM fields.

The need to develop separate SLVs specifically designed for STE learners will require additional effort among the teachers in researching and curating content that aligns with the STE program's depth and complexity. Teachers must also consider incorporating advanced examples, practical applications, and supplementary resources to enhance the learning experience for STE learners. Moreover, this will offer STE learners the opportunity to engage with content that aligns with their program and provides a deeper understanding of STE concepts. The inclusion of advanced examples and practical applications can help them connect theoretical knowledge with real-world scenarios, developing their interest and motivation in the subject matter being taught. Furthermore, school administrators will need to support teachers in creating separate SLVs for STE learners. This may involve providing resources, professional development opportunities, and collaboration with experts in the STE field. Administrators must also ensure that the curriculum and resources are aligned with the needs of STE learners, allowing for a more comprehensive and effective learning experience.

Aesthetic Appeal

Studies have shown that technology has the potential to enhance student motivation, attitude, engagement, and self-confidence, while also boosting organization and study skills (Carver, 2016). This study work analyzed the perspectives offered by STE learners and teachers to enhance the engagement of SLVs through improving the visual appeal, text, clarity an audio quality.

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Both learners and teachers noticed poor visual elements and textures of the SLVs. There were low-resolution images, pixelated visuals, inadequate use of graphics and animations, green screen disturbances, font inconsistency, and ambient noise that can negatively impact engagement with the SLVs. There was a general lack of visual depth and a need to further improve these elements to make SLVs more engaging, effective creating a more immersive learning experience.

"It could be better if the use of the green screen will be cleaner to let the learners stay focus on the lesson being discussed and not be disturb by any unnecessary glitches of the video. Also, it would be better if the video is not pixelated specially when the internet connection is poor, so if its blurred already it will become even blurred to the extent that the texts will not be readable anymore to the learners. Use of better fonts to really engage the learners, make the text a little bit bigger, improve the background and make the video more interactive with more visualization." (L5)

Improving engagement through visualization and texture emphasizes the significance of creating visually appealing and immersive SLVs. Upgrading cameras, lighting equipment, and production tools can enhance the visual quality of the videos, resulting in sharper images, improved graphics, and animations. By incorporating more appealing visuals and utilizing textures or tactile elements, the SLVs can capture learners' attention and make the learning experience more visually interesting and engaging. This can be supported by the studies of Goh, et al (2019) which emphasized that video lectures can improve student engagement, motivation and learning outcomes enhancing the students' critical thinking and knowledge retention in distance learning.

Similarly, addressing issues related to text and fonts is crucial to optimize engagement. Mayer (2014) reiterated how visual media, such as illustrations, photos, graphs, maps, animations, videos, slides, and text, are used to improve student attention and engagement with video lectures. Using legible fonts and consistent font sizes ensures that the text is easy to read and comprehend. Adequate color contrast between the text and the background enhances readability and prevents distractions. Molnar (2017) highlighted the importance of the size of the visual media affecting the way in which learners process information and ultimately be engaged in the lecture. This includes size issues with text which are too small which negatively affects the comprehension levels of the learners (Sanchez & Goolsbee, 2010). By improving the readability of the text, learners can better focus on the content being presented in the SLVs, leading to increased engagement and understanding.

Regarding green screen disturbances, ensuring a clean and accurate keying result is essential. Inconsistencies in the green screen setup can distract learners and hinder their focus. By implementing even and balanced lighting, eliminating shadows, and using high-quality software for chroma keying, the SLVs can provide a seamless viewing experience. A clean separation between the subject and the background allows learners to concentrate on the educational content without disruptions, enhancing their engagement.

The audio quality of the SLVs plays a significant role in learner engagement. While clear audio and good pronunciation of teachers are appreciated, background noise can be distracting. Cunningham, Fägersten, and Holmsten (2010) emphasized that audio issues happen when students cannot recognize what is being said due to the level of sound, the mechanical nature of speech or some technical issues that make the sound distorted and not hearable to the part of the listeners. With this, studies showed that these issues can disrupt the students' learning process, causing the students to keep on going back and replaying the video over again (Cunningham et al., 2010). Selecting a quiet recording environment and using quality microphones can help eliminate ambient noise, ensuring that the audio remains clear and focused on the educational content. This improvement in audio quality enhances the overall viewing experience and promotes engagement with the SLVs.

SLV visualization and texture improvement would mean investing in upgraded equipment and production tools of the teachers. Molnar (2017) identified in the study the quality issues indicating that poor visual quality of video lectures leads to reduced attention and understanding among learners. Hence, by enhancing the aesthetics of the videos, teachers can capture learners' attention and create a more immersive learning experience. Additionally, teachers should use of legible fonts, consistent font sizes, and sufficient color contrast to enhance the readability of text in the SLVs. This improvement will result to an improved viewing experience by the learners, thus increase engagement. Clear visuals, effective text, and a distraction-free green screen setup contribute to

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increased engagement and understanding. Learners can focus on the content without being hindered by visual or audio distractions, leading to a more enjoyable and effective learning experience.

User-friendliness

Video lessons are transforming education in the current era of technology by offering a smooth and user-friendly learning experience for students (Kaltura, 2021). This interactive style enables students to acquire knowledge at their preferred speed and review concepts as necessary, promoting a more profound comprehension of the subject matter.

The participants of this study emphasized the positive experiences on the use of SLVs who found the those to be easily accessible and user-friendly through their Android phones. This is similar to the results of Richardson, et al (2021) in which they found out that majority of the students had positive perceptions on online learning, including the use of video lessons during the pandemic. The students valued the flexibility and ease of acquiring knowledge from their own home and believed that they successfully maintained progress with their academic assignment.

"What I like about the supplementary learning videos of SDO Masbate Province is that I can just give the link to my learners of the videos and they can immediately watch it as part of their supplementary learning activities about a specific lesson." (L6)

"During the pandemic there is no face-to-face interactions, and there are some lessons that are hard to understand if we only read it through modules. So, it helps a bit in our studies." (L7)

In this study, the convenience of using SLVs through Android phones centers on several key factors. First, the universal nature of Android smartphones ensures that learners have access to SLVs anytime and anywhere. Kim, et al (2012) reiterated that utilizing mobile technologies including social communication capabilities into educational content can enable students to engage in a more collaborative learning environment. With the widespread adoption of mobile devices, learners can conveniently engage with SLVs without being restricted to a specific location or time. This flexibility allows learners to fit learning into their schedules and take advantage of available learning opportunities. Second, the user-friendly interface of SLVs on mobile phones contributes to a seamless learning experience. The SLVs can easily be viewed in the Youtube account of Masbate Province Sci-Connect on Android phones making it easy for learners to search for specific topics with available video lessons effortlessly. The convenience of using SLVs through mobile phones implies the need to optimize the accessibility and usability of Supplementary Learning Videos. This supported the study conducted by Lan and Huang (2012) in which emphasized the increasing expectation among learners to use mobile devices for instructional reasons.

In this case, teachers should ensure that the SLVs offer seamless and user-friendly learning experience. Providing clear instructions and guidance on how to access the SLVs on mobile phones or laptops through the Masbate Province Sci-Connect Youtube Channel or through offline videos can empower learners to engage with the content conveniently and to learn at their own pace and convenience. By utilizing SLVs through their mobile phones/laptop, learners can access educational content whenever and wherever they choose. Valk, Rashid, and Elder (2010) illustrated the potential of mobile phone-facilitated learning to enhance students' access to educational resources and services in developing nations, especially in rural and distant areas. This flexibility allows them to integrate learning into their daily routines, making it more manageable and convenient.

Accessibility

Video lessons hold great potential for teaching, but inconsistent internet availability can be a significant obstacle. Soares et al. (2017) underscores the challenge on connectivity, emphasizing the need for alternative access methods like downloadable lessons.

Slow internet connections and reliance on mobile data for internet access were the challenges faced by the participants of this study. These significantly impact the ability of learners to engage with SLVs effectively.

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"I find some difficulties on accessing the videos due to poor internet connection and some videos are quite blurred." (L8)

"I don't know how to download videos." (L9)

Results of the study showed that one of the barriers hindering the teachers and students in the use of supplementary learning videos was due to poor access to internet connection. This resulted to pixelized videos that are not attractive to the eyes of the learners. Results of this study is similar to that of Hew and Brush (2007) identifying resources (accessibility to internet connection) as one of the factors hindering the effective use video lessons. Dangle and Sumaoang (2020) documented that learners residing in distant places encounter challenges in accessing a reliable and strong internet connectivity, hence impeding their ability to access valuable online information. Furthermore, the lack of knowledge and skills on the utilization of supplementary learning videos contributed to some difficulties experienced by the teachers. This is align with the results of the study conducted by Ertmer (2005) which highlights the second-order barriers which include the knowledge and skills of the teachers and students in the use of technology in the classroom instruction affecting the optimum attainment of effective teaching and learning process.

"... Also, it would be better if the video is not pixelated specially when the internet connection is poor, so if its blurred already..." (L5)

These technical barriers hinder the seamless viewing experience and hinder engagement with the educational content. These results demonstrate how learners and teachers find some technical barriers affecting their teaching and learning experience using supplementary learning videos (SLVs) of SDO Masbate Province. Hence, addressing technical barriers emphasizes the importance of ensuring equitable access to SLVs for all learners, regardless of their internet connectivity limitations.

Impacts of SLVs in promoting student learning

Complementary to existing instruction

Supplementary Learning Videos (SLVs) played a valuable role in complementing the Modular Distance Learning (MDL) modality during the pandemic. Both teachers and learners found these to be valuable tools that facilitated comprehensive and engaging learning experiences. Results of the study indicated that SLVs complement Modular Distance Learning modality and support busy parents during the pandemic.

"I clearly understand the lessons since some of my fellow students' parents are busy, so they were not taught by their parents that is why these videos were really of great help…" (L1)

"The learners while watching the videos are on-task and this can be proven through the results of their formative assessments." (L10)

The study revealed that learners find learning easy through the SLVs. Based form the learners' responses, it can be denoted that concepts were easily understood with the help of the supplementary learning videos. This can be supported by the learners' performances in the assessment tasks provided by the teachers in checking the learners' understanding of the viewed video lessons. These results are parallel to that of the findings of Warschauer (2006) and Spektor-Levy and Gronot-Gilat (2012) highlighting the better performance of learners exposed to computer technology than those learners who are merely exposed with traditional teaching. This flexibility enabled learners to learn at their own pace, reinforce their understanding, and engage in self-directed learning.

Instructional Aid

The second theme emerged describing how the learners find the video lessons helpful in their studies especially during the pandemic when there is no face-to-face interaction between the students and the teacher even with

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only a little supervision from the parents, knowing that not all parents can be able to facilitate the learning process of the learners during pandemic. The SLVs of Masbate Province Division offered visual explanations, demonstrations, and examples that enhanced their learning experiences at home. The combination of MDL and SLVs provided a comprehensive and engaging learning environment, allowing learners to watch videos multiple times, pause, and rewind as needed.

"I clearly understand the lessons since some of my fellow students' parents are busy, so they were not taught by their parents that is why these videos were really of great help…" (L1)

In addition, the convenience of accessing SLVs at any time and from any location added to the flexibility and convenience of the learning process making it favored by the students during the pandemic (Richardson, et al., 2021). For teachers, SLVs served as valuable additional teaching resources to support remote instruction. SLVs expanded the teaching resources, enhanced instructional delivery, and provided flexibility. Teachers utilized SLVs to overcome physical distance barriers and ensure continued educational engagement and quality instruction and enriched learning experiences for the students.

The overall result of the impact of the developed self-learning videos of SDO Masbate Province provided positive impact on the STE learners and teachers. This finding is similar to Kostereliogl u (2016) and (Ljubojevic et al., 2014) which provided emphasis on the positive effects of using video clips in arousing interest of the learners.

Implications

The findings of this study have several implications for the use of Science Supplementary Learning Videos (SLVs) in education. With the study's results, it can be deduced that there is a need to develop a separate, more in-depth SLVs specifically for Science, Technology, and Engineering (STE) learners. This aligns with the findings of Pleasants, Tank and Olson (2021), who emphasized the importance of providing instructional activities closely aligned with scientific subjects for STE students. Curriculum developers and video content creators should consider the various needs of STE learners when designing supplementary materials. Furthermore, there is a clear implication for enhanced teacher training in the creation and effective use of SLVs. This includes improving technical skills for video production and understanding how to integrate these resources into teaching strategies, as suggested by Carver (2016). On the other hand, the accessibility issues highlighted in the study imply a need for greater investment in digital infrastructure, particularly in rural areas like Masbate Province. This could involve improving internet connectivity and providing students with necessary devices, addressing the challenges identified by Dangle and Sumaoang (2020). Moreover, the varied perceptions of SLVs suggest an opportunity to develop more personalized learning experiences. This could involve creating adaptive video content that adjusts to individual student needs and learning styles, as supported by the findings of Goh et al. (2019) and Lee and Lim (2018).

With this, the positive impact of SLVs on student engagement and understanding implies a need to revise assessment strategies to better align with this mode of learning, potentially incorporating more video-based assessments, as suggested by the study conducted by Kaltura (2015).

CONCLUSION AND RECOMMENDATION

The findings revealed that there were four (4) identified emerging themes in the perceptions of the STE learners and teachers on the utilization of supplementary learning videos (SLVs) of SDO Masbate Province, namely: responsive instructional materials, aesthetic appeal, user-friendliness, and accessibility. Furthermore, it can be concluded that the SLVs impacts to STE teachers and students were complementary to existing instruction and an instructional aid. SLVs complement to the implementation of Modular Distance Learning Modality and is a good support to parents in helping learners learn meaningfully.

Therefore, it is suggested that there should be addition of supplementary learning videos that dealt on other concepts discussed under Science, Technology and Engineering program meeting the needs for in-depth discussion of concepts, the need for enhancement of video lessons in terms of content, visualizations, texture and the consistency of the text, font, use of green screen technology and the audio quality being used in the videos,

provision of offline versions of supplementary learning videos for the use of the learners and teachers specifically for those in the far-flung areas, and conduct of future studies that will determine the impacts of SDO initiated supplementary learning videos to students and teachers in the regular program.

Limitations

The study was limited to a small sample of five teachers and five students. A larger sample size would provide more robust and generalizable results, as suggested by Creswell and Creswell (2017). Moreover, the geographical scope was confined to Masbate Province, which may not be representative of other regions in the Philippines or other countries. This limitation aligns with the findings of Johnson and Onwuegbuzie (2004), who emphasized the importance of considering diverse contexts in educational research. Also, the research was centered on science subjects, and the findings may not be applicable to other subject areas. This subject specificity limits the generalizability of the results, as noted by Hew and Brush (2007) in their study on technology integration in education. The study does not mention a specific time frame, which could affect the reliability of the results if conducted over a short period. This temporal limitation is important to consider, as highlighted by Ertmer (2005) in her research on teacher pedagogical beliefs and technology integration. Furthermore, the study relies heavily on qualitative data. Including quantitative measures could provide a more comprehensive understanding of the impact of SLVs, as suggested by Bhandari (2020) in his introduction to qualitative research. Also,the study does not fully address the potential limitations of the technology used to create and deliver SLVs, which could impact their effectiveness. This technological aspect is crucial to consider, as emphasized by Soares, Pereira, and Silva (2017) in their research on overcoming the digital divide in education.

Conflict of Interest

There is no conflict of interest in this research.

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