**Perceived Effects of Short-Form Content on Learning Competencies Among G12 STEM Students in HSU**

A research proposal submitted to the College of Innovative Teacher Education Higher School ng UMak (CITE-HSU)

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Practical Research 2

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**Table of Contents - Gabe and Ced**

**List of Tables  
  
List of Figures**

**CHAPTER 1**

**INTRODUCTION**

**Rationale**

The rapid advancement of digital technology has profoundly reshaped the educational landscape, introducing innovative methods for learning and knowledge dissemination. Among these developments, short-form content—popularized by platforms such as TikTok, Instagram Reels, and YouTube Shorts—has gained significant traction, particularly among younger generations. While these platforms are predominantly used for entertainment, their potential to impact educational outcomes is an emerging area of interest (Anderson, 2021; Mullaney, 2023). Given the increasing popularity of short-form content, understanding its role in education is essential, especially in fields such as Science, Technology, Engineering, and Mathematics (STEM) (Saul, 2019).

This research seeks to explore the perceived effects of short-form content on the learning competencies of STEM students at HSU (Higher School of UMAK). By examining students' perceptions of the motivational and educational value of such content, this study aims to uncover both the advantages and limitations of incorporating short-form content into STEM curricula (Anderson, 2021).

Digital technology has become an integral part of modern education, significantly influencing how students learn and how educators teach. The widespread use of digital tools, e-learning platforms, and educational apps has made knowledge more accessible, enabling learners to engage with content in diverse formats and facilitating more flexible, personalized learning experiences (Mayer, 2005). A 2021 survey by the Pew Research Center found that 95% of teenagers in the U.S. have access to smartphones, with over 80% using digital devices to access educational content at least once per week (Pew Research Center, 2021). This trend is also prevalent in institutions like HSU, where students increasingly utilize digital tools for supplementary learning and content review (Pew Research Center, 2021).

At the Higher School ng UMak, the incorporation of digital learning platforms has already been adopted in various forms, from online course materials to interactive simulations used in laboratory courses. However, the integration of short-form content specifically tailored for STEM subjects remains underexplored (Saul, 2019). This research aims to address this gap by investigating the potential benefits of short-form content in engaging students, enhancing their understanding of complex topics, and developing essential 21st-century skills such as critical thinking and problem-solving (Mayer, 2005).

Short-form content, typically defined as video clips lasting less than 60 seconds, has become a dominant mode of communication and content consumption on social media. Platforms like TikTok and YouTube Shorts offer unique opportunities to deliver educational content quickly, with the potential to reach millions of users (Dignan, 2023). As of 2023, TikTok boasts over 1 billion active users globally, with a significant portion of its audience aged 16 to 24 (Smith, 2023). The use of these platforms among the student population at HSU suggests that short-form content could serve as an effective medium for educational purposes, particularly in reaching STEM students who may already be familiar with these platforms for entertainment (Smith, 2023).

Research indicates that short-form content can positively influence learning by capturing attention, improving content retention, and enhancing motivation. For example, Giannakos et al. (2021) found that students who engaged with microlearning modules—short, focused bursts of content—demonstrated better understanding and recall of information compared to traditional lecture formats. At HSU, where students often face challenges in balancing academic requirements with extracurricular activities, short-form content could offer an efficient way to learn STEM subjects, enabling students to revisit key concepts multiple times and access learning materials at their convenience (Giannakos et al., 2021).

Short-form content also capitalizes on the principles of social learning theory, which emphasizes learning through observation and imitation (Bandura, 2001). At HSU, incorporating TikTok-style videos or YouTube Shorts as part of classroom assignments or supplementary learning materials could help bridge the gap between theoretical knowledge and real-world application, thus making STEM subjects more relatable and engaging (Bandura, 2001).

STEM education remains a cornerstone of modern society, vital for developing a skilled workforce capable of driving innovation (National Science Foundation, 2022). However, STEM fields continue to face challenges in engaging students, particularly at HSU. Some common issues include the perceived difficulty of STEM courses, low motivation, and high dropout rates in related programs. According to a report from the HSU Registrar's Office (2023), over 30% of students who initially enroll in STEM courses switch to other disciplines by the end of their sophomore year. This trend is consistent with broader national statistics that suggest difficulties in maintaining STEM student retention (National Science Foundation, 2022).

These challenges are often exacerbated by traditional teaching methods, which rely heavily on textbooks and lectures, making it difficult for students to engage with the material actively. STEM subjects, which often involve complex theories and abstract concepts, may seem intimidating without interactive or visually appealing learning aids. The integration of short-form content at HSU could address this issue by simplifying abstract concepts through animations, real-world demonstrations, and brief explanatory videos. Such an approach could help students grasp the core principles of STEM subjects more effectively and encourage continued interest in these fields (Dignan, 2023).

Additionally, short-form content could play a role in addressing diversity and inclusivity challenges within HSU's STEM programs. Educational influencers on platforms like TikTok, such as @thephysicsgirl and @sciencemom, have made significant strides in making STEM subjects accessible and appealing to a broader audience, including women and underrepresented minority students (Smith, 2023). Implementing similar approaches at HSU may contribute to a more inclusive learning environment, inspiring a diverse range of students to pursue and persist in STEM fields (Dignan, 2023).

Incorporating short-form content into the STEM curricula at HSU could revolutionize traditional teaching approaches, making them more interactive and tailored to students' learning preferences. Short-form videos can simplify complex concepts, such as Newtonian mechanics or chemical reactions, through visuals, animations, and step-by-step demonstrations. This format not only aids comprehension but also allows for more flexible learning, as students can revisit content multiple times at their own pace (Mayer, 2005).

At the Higher School ng UMak, educators might explore assignments where students create short-form videos explaining scientific principles or solving math problems. This practice would encourage deeper engagement with the subject matter, as students need to fully understand the concepts to explain them concisely (Giannakos et al., 2021). Moreover, allowing students to share their videos with peers fosters a collaborative learning environment where students can learn from one another (Bandura, 2001).

A pilot program could be introduced at the STEM strand, where students in introductory physics courses use TikTok-style videos to present lab experiment results or explain theoretical concepts. Similar initiatives have shown promising results at other universities, such as the University of Sydney (2022), where the use of YouTube Shorts in physics courses led to a 15% improvement in exam scores. This indicates that adopting short-form content at HSU has the potential to enhance learning outcomes and provide a modern, student-centered educational experience (University of Sydney, 2022).

This research aims to assess how short-form content affects various learning competencies at HSU, including collaboration, communication, creativity, critical thinking, problem-solving, and personal growth.

Communication: Short-form content requires concise communication, as information must be conveyed within a limited time. This skill is particularly valuable in STEM fields, where complex concepts need to be explained to diverse audiences (Mayer, 2005). Assignments at HSU that involve creating short educational videos can help students develop these communication skills.

Creativity: Encouraging students at HSU to produce their own content allows for creative expression. This can involve integrating visual effects, storytelling, or animation to explain complex scientific ideas, promoting innovative approaches to problem-solving (Dignan, 2023).

Critical Thinking and Problem-Solving: When HSU students engage with short-form videos presenting real-world problems, they are prompted to think critically about how to apply their knowledge. This aligns with problem-based learning methodologies, which are effective in developing problem-solving skills (Giannakos et al., 2021).

Personal Growth: Engaging with short-form content at HSU can boost students' digital literacy and confidence in using technology. By creating and evaluating digital content, students also develop skills that are increasingly important in the modern workplace, such as digital communication and content creation (Saul, 2019).

While integrating short-form content into STEM education at HSU presents many potential benefits, there are limitations to consider. One significant concern is the risk of superficial learning. Short-form content may encourage students to prioritize quick information consumption over deep understanding (Dignan, 2023).

To prevent this, educators should use short-form videos as supplements to more in-depth coursework rather than replacements. Assignments should also be designed to promote critical engagement with the material, such as requiring students to create content that demonstrates thorough understanding (Mayer, 2005).

Moreover, the quality and accuracy of user-generated content on platforms like TikTok and YouTube can be variable. Educators at HSU must guide students in evaluating the credibility of online content and teach them how to create high-quality educational materials (Smith, 2023). Integrating digital literacy training into STEM curricula can help students discern reliable information and develop effective digital communication skills (Mayer, 2005).

In conclusion, the increasing prevalence of short-form content presents a unique opportunity to enhance STEM education at HSU by aligning teaching methods with students' learning preferences. The incorporation of platforms such as TikTok, Instagram Reels, and YouTube Shorts into STEM curricula has the potential to improve student engagement, motivation, and competency development in areas such as collaboration, communication, and problem-solving (Saul, 2019; Mullaney, 2023).

This research aims to provide insights into the perceived effects of short-form content on learning competencies, ultimately guiding educators and policymakers at HSU in leveraging digital innovations to prepare students for the demands of the modern world.

**Theoretical Framework**

This theoretical framework informs our research about how short form content impacts learning abilities of STEM students at HSU. Using current theories and models, we want to understand the various factors in this relationship.

The present study is based on **Cognitive Load Theory (CLT)** and **Multimedia Learning Theory (MLT).**

**Cognitive Load Theory (CLT)**

CLT says that human cognition consists of limited working memory and long term memory. The thesis of this theory states that extraneous cognitive weight is reduced to make learning more efficient. It is hypothesized that short form content would facilitate STEM students more effectively learn and retain more memories, because short form content minimizes cognitive load relating to learning and retention.

* **Reference:** Sweller, J. (1988). Cognitive Load During Problem Solving: Effects on Learning. Cognitive Science, 12(2), 257-285.

**Multimedia Learning Theory (MLT)**

The learning is optimized when the information is presented in both visual and verbal format, as asserted by MLT. MLT is aligned with short form content, which makes use of multimedia elements repeatedly; short form content consists of engaging, concise, and multimodal learning experiences.

* **Reference**: Mayer, R. E. (2009). Multimedia Learning (2nd ed.). Cambridge University Press.

Merging these theories creates a robust framework for examining the effects of short-form content on the learning abilities of STEM students at HSU.

**Conceptual Framework**

| **INPUT** | **PROCESS** | **OUTPUT** |
| --- | --- | --- |
| **Short-Form Content (SFC) Definition:**   * **Brief, easily digestible educational materials.** * **Examples: TikTok educational clips, YouTube Shorts, Instagram Reels, LinkedIn Learning bites.** * **Attributes: Concise, visually engaging, rapid information delivery.** * **STEM Students (HSU) Demographics: Age, gender, year of study, academic background.** * **Learning Needs: Complex problem-solving, analytical skills, critical thinking. Technological Tools** * **To Platforms: TikTok, YouTube, Instagram, Khan Academy.** * **Access to Devices: Smartphones, tablets, laptops.** | **Engagement with SFC**   * **Frequency of Use: Occasional vs. habitual.** * **to Interaction: Liking, sharing, commenting, or passively watching.** * **To Purpose: Entertainment, quick learning, concept reinforcement.** * **Learning Methods to Blended Learning: Combining SFC with traditional study methods.** * **Self-paced Learning: Quick revision via short videos.** * **Collaborative Learning: Sharing SFC with peers for group studies.** | **Surface Learning: Basic information acquisition.**   * **Deep Learning: Reinforcement of previously acquired knowledge.** * **Skill Acquisition: Learning coding tricks, problem-solving shortcuts, etc.** * **Perceived Positive Effects** * **to Increased Engagement: Higher interest in learning.** * **Improved Retention: Short bursts of information aid memory recall. Concept Simplification: Easier understanding of complex topics. Perceived Negative Effects** * **Superficial Understanding: Lack of depth in topics.** * **Reduced Attention Span: Difficulty focusing on detailed content. Neutral or Mixed Effects** * **No Significant Impact: Some students may experience little to no improvement.** |

| **FEEDBACK** |
| --- |
| **Adapting Study Habits Increased Use of SFC:**   * **Using more SFC if beneficial to Balancing SFC with Traditional Learning:**    + **Using SFC as a supplement.** * **Teacher Intervention Incorporation of SFC in Curriculum:**    + **Including curated content in lessons** |

In this study, we'll focus on the Input stage of the Input-Process-Output model, where we specify the relevant variables to be measured. Short-Form Content in our study refers to a defined instructional content retrieved from the platforms of TikTok, YouTube Shorts, and Instagram Reels. Such information is created with an intention to be imbued with density of information and brevity and visually oriented. This is widely used by a cross-section of learners in the STEM fields at HSU, who have diverse learning needs that require problem-solving, critical thinking, and a development of technical competencies. Indeed, these students rely on technology to deliver content; in most cases, the content is delivered as short videos accessed using their smartphones and laptops. It sets up a context in which one understands how these learners interact with short-form content and its relevance to educational needs.

In the Process stage, this research will find out how students engage and process short-form content. We have looked at factors like the frequency at which students access such content, the context of its consumption among students whether casually or a structured study regimen, and finally the purpose for which they do it. For instance, do students use short form videos for entertainment, quick revision, or in-depth learning?. It further expands upon how Short Form Content is integrated into the broader learning methodologies of students by inquiring whether it serves to complement traditional methods of study, known as blended learning, or as the primary source for self-paced review. Attention has been paid toward assessing whether this content affects cognitive engagement, which may allow for surface as well as deep learning in addition to enhancing the acquisition of skills pertaining to specific tasks.

The Output stage evaluates perceived effects of Short Form Content on the capability of the student to learn. It encompasses positive effects such as engagement, retention and comprehension of complex ideas on one hand and negative effects like superficial understanding and lack of concentration on the other. In addition, some students even claimed that they experienced neutral or mixed effects where they reported with minimum impacts coming from Short Form Content.

**Statement of the Problem**

This study aims to determine the Perceived Effects of Short-Form Content on Learning Competencies Among STEM Students in HSU.The following questions are expected to be addressed in this study:

1. What are the perceptions on short-form content among STEM Students in terms of:
   1. Content
   2. Motivation
   3. Purpose
2. What are the positive and negative effects of short-form content among STEM Students ?
3. What are the benefits and drawbacks of integrating short-form content in the educational learning process?
4. How does exposure to short form content affect the students' in terms of:
5. Collaboration
6. Communication
7. Creativity and Innovation
8. Critical Thinking
9. Cultural and Global Citizenship
10. Managing Information
11. Problem Solving
12. Personal Growth and Well-Being

**Significance of the Study**

This research holds significant implications for the field of education, particularly STEM education. By investigating the perceived effects of short-form content on the learning competencies of STEM students, this study contributes to a growing body of knowledge on the potential of digital technology to enhance educational outcomes.

The findings of this research can inform educators, policymakers, and curriculum developers in several ways:

**Students:** This study will help students understand how short-form content can enhance their learning experience in STEM subjects. By identifying the specific effects on skills such as problem-solving, critical thinking, and collaboration, students can make more informed decisions about incorporating short-form content into their study habits, ultimately improving their academic performance.

**Teachers:** The research will provide teachers with insights into how short-form content impacts student engagement and competency development. With a better understanding of how students interact with this content format, teachers can tailor their instructional methods to foster a more engaging and effective learning environment, promoting the growth of key academic and practical skills.

**Parents:** Helps parents understand how short-form content influences their children's STEM learning and guide them in balancing online educational resources.

**University of Makati:** Aids the university in enhancing STEM education by leveraging short-form content insights.

**Community:** Raises awareness of the impact of short-form content in education, encouraging a proactive approach to its use in enhancing student learning.

**Future Researchers:** The study can identify areas for future research on the impact of short-form content on student learning, including longitudinal studies and investigations into specific learning outcomes.

Overall, this research has the potential to contribute to a more effective and engaging STEM education experience for students, ultimately preparing them for success in the digital age.

**Definition of Terms**

This section outlines key terms used in the research, providing a clear understanding of each concept as it pertains to the study.

**Short-Form Content -** Any digital content that runs less than 60 seconds to 10 minutes long, which students consume through different types of platforms like TikTok, YouTube Shorts, and Instagram Reels, among others. It is short, consumable, and easy to understand, for the most part.

**Perceived Effects -** How STEM students at HSU feel or think short-form content affects their learning capabilities. This covers both positive and negative perspectives.

**Learning Competencies -** The backbone of the knowledge and skills that students pursuing STEM studies are expected to gain, including teamwork, problem-solving, and critical thinking-things that characterize the core of academic success as well as preparation for life.

**Content -** What the information or material covered in short-form content is all about-educational value, relevance to STEM topics as a whole, and accuracy.

**Motivation -** The willingness or intent of learners in the STEM arena to engage with information in a short form. This word encapsulates how the shortness of the content impacts their willingness to learn or take up other learning endeavors.

**Purpose -** The intention or role that is supposed to be served from the application of short-form content to the learning process. It can include anything from pure enjoyment to the reception of a new piece of information or skill.

**Positive Effects -** Advantages of short-form content to the student as he studies from STEM: Engagements, ease of information acquisition, and an enhanced creative experience in studying.

**Negative Effects -** The possible negative effects of short-form content include reduced attention span, information overload or distraction from deeper learning

**Integrating Short-Form Content -** The process of integrating short-form content into the framework. It includes its role, for instance, within the classroom, assignments, or supplemental learning materials.

**Collaboration -** The ability of the students to efficiently collaborate in group environments or activities, and how short-form content encourages or discourages teamwork.

**Communication -** The means of communication through which students can communicate ideas and information. This will include both verbal as well as digital. These include clarity, articulation, and digital fluency as introduced by short-form content.

**Creativity and Innovation -** The ability of the students to be innovative, come up with new ideas, or do things in a creative way. This will define how short-form content fosters or suppresses creative thinking as well as imagination.

**Critical Thinking -** Analysis, evaluation and judgment of content or situations. Immersion of students to short forms of content that determines their development of critical analysis.

**Cultural and Global Citizenship -** Knowledge and awareness of cultures and their importance in a globalized world. How students comprehend different perspectives by short-form content.

**Control of Information -** Students' ability to group, categorize and make use of information received from the short forms of content for their school work, as well as how they decide what sources are credible and which are not.

**Critical Thinking -** The way short-form content impacts the ability of the students to find solutions to academic or real-life problems and how it facilitates or hinders students' problem-solving capacities.

**Personal Development and Wellness -** The overall development and wellness of students' self-awareness, mental health, emotional equilibrium, and other aspects of personal life balance are impacted by the short-form content, with specific regards to contribution toward personal life balance.

**CHAPTER 2**

**METHODOLOGY**

**Research Methodology**

This chapter outlines the techniques to carry out the study. It Included the sampling design, data gathering, study design, data sources, and statistical tools for data analysis.

**Research Design**

In order to ascertain the effects of short-form content on HSU grade 12 STEM students as well as the advantages and disadvantages of their involvement with it, the study modified the descriptive-exploratory technique. Aggarwal and Ranganathan (2019) emphasized that the descriptive approach plays a vital role in observational studies because of its simplicity and adaptability. Researchers can examine variable variability using this method without necessarily identifying underlying causes or connections. Exploratory approaches, according to Helmold (2019), concentrate on measuring variables in order to characterize, forecast, and occasionally affect occurrences. This thorough but flexible approach to study is effective for dealing with complex and dynamic issues. This approach will help the study to explore and describe the perceptions of the students.

**Sources of Data**

The data of the study was collected from STEM (Science, Technology, Engineering, and Mathematics) students in Grade12 at University of Makati, found in the NCR. The study looked at how Grade 12 STEM students perceived short-form content. A random sample of 188 STEM students was chosen to complete the survey. Respondents were chosen at random in order to gather information from STEM Students in Higher School ng Umak enrolled for the A.Y. 2024-2025.

STEM students enrolled in the Grade 12 HSU STEM strand for A.Y. 2024-2025.

Table 1. Distribution of Respondents according to their section.

| **Section** | **F** | **%** |
| --- | --- | --- |
| 12-01 STM | 11 | 5.85 |
| 12-02 STM | 11 | 5.85 |
| 12-03 STM | 10 | 5.32 |
| 12-04 STM | 12 | 6.38 |
| 12-05 STM | 10 | 5.32 |
| 12-06 STM | 11 | 5.85 |
| 12-07 STM | 10 | 5.32 |
| 12-08 STM | 10 | 5.32 |
| 12-09 STM | 11 | 5.85 |
| 12-10 STM | 10 | 5.32 |
| 12-01 HCP STM | 14 | 7.45 |
| 12-02 HCP STM | 11 | 5.85 |
| 12-03 HCP STM | 11 | 5.85 |
| 12-04 HCP STM | 10 | 5.32 |
| 12-05 HCP STM | 10 | 5.32 |
| 12-06 HCP STM | 10 | 5.32 |
| 12-01 DA-STM | 16 | 8.51 |
| **Total** | 188 | 100.00 |

Table 2. Distribution of Respondents according to their gender

| **Sex** | **F** | **%** |
| --- | --- | --- |
| Female | 68 | 36.17 |
| Male | 120 | 63.83 |
| **Total** | 188 | 100.00 |

Table 3. Distribution of Respondents according to their age.

| **Age** | **F** | **%** |
| --- | --- | --- |
| 16 | 1 | 0.53 |
| 17 | 156 | 82.98 |
| 18 | 28 | 14.89 |
| 19 | 3 | 1.60 |
| **Total** | 188 | 100.00 |

**Instrumentation and Data Collection**

### **Instrumentation**

The instrument used for data collection is a **survey questionnaire** designed to gather demographic information from Grade 12 STEM students at HSU. The survey includes items related to section, gender, and age, aligning with the variables shown in the tables.

### **Data Collection**

The data was collected through a structured survey distributed to Grade 12 STEM students enrolled in the HSU STEM strand for the academic year 2024-2025. The survey was conducted in a controlled environment, either in person or digitally, to ensure a high response rate and accuracy of self-reported data.

1. **Distribution and Response**:
2. The questionnaire was distributed to all enrolled Grade 12 STEM students across different sections.
3. Participation was voluntary, with assurances of confidentiality to encourage honest responses.
4. **Recording and Verification**:
5. Responses were carefully recorded, with each response linked to the appropriate section, gender, and age category.
6. For data accuracy, responses were reviewed and verified, ensuring each participant’s data aligns with the class enrollment records.
7. **Data Processing**:
8. Collected data was tabulated to calculate frequencies (F) for each category, as shown in Tables 1, 2, and 3.
9. Percentages were then computed to provide a clear understanding of the distribution of respondents across sections, gender, and age.

**Validity & Reliability**

The research instruments used in this study underwent a thorough validation process to ascertain their usability in obtaining accurate data regarding the perceived impacts of short-form content on the learning skills of HSU STEM students. The instruments' initial draft was created by consulting the body of research on short-form material and digital learning. These experts provided extremely thorough criticism, emphasizing each aspect's importance to the goals of the study as well as its content and clarity. Specific suggestions were given to improve the questions' wording, expand the items' scope, and make them more pertinent to the goals of the study while bolstering content validity. This review was incorporated into a revised second draft, which was subsequently reviewed by the same experts. Minor changes have been suggested at this evaluation stage, and it has been determined that the updated document satisfies the fundamental validity requirements. The iterative review procedure made sure that the instruments would closely match the study topics. In order to evaluate the tools' inter-rater reliability, a second reviewer examined a sample of qualitative data to ensure that the interpretations were consistent. It resulted in a lengthy, multi-step validation and reliability process that improved the measures' consistency and clarity, ensuring that they would accurately and consistently reflect STEM students' impressions of the brief material and how it affected their capacity to learn.

**Ethical Consideration**

The participants were properly informed of the objectives, procedures, and possible risks involved before granting their consent to participate in the study on the perceived effects of microcontent on the learning competencies of students at HSU. Therefore, the study adhered to the principle of voluntary participation, which states that participants can leave the study at any moment without facing any consequences. In order to protect privacy and comply with RA 10173 (Data Privacy Act of 2012), the collected data was anonymized. This meant that participant identities were kept private and that no personal information was connected to their responses. Through intentional tactics used by the researchers, the data collection method also took into account reducing any potential discomfort or harm to participants. To make sure the data collected were accurate and legitimate, a validated technique was employed, which supported the study's findings. To ensure complete representation, the study was planned to be a part of a large STEM student body from various academic programs. It clearly presented its findings without being swayed by the data and, as a result, without manipulating it. Following the study, a summary of the results would be provided as a token of gratitude for the participants' time and work.

**CHAPTER 3**

**RESULTS & DISCUSSION**

This chapter presents the results and discussion addressing the research questions outlined in Chapter 1

1. **Perceptions in short form content of stem students in terms of:**

**1.1 Content**

| **Content** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Understanding of short-form content and its uses. | **3.11** | **0.75** | **Highly Knowledgeable** |
| Relevance of short-form content in STEM studies. | **3.04** | **0.77** | **Highly Knowledgeable** |
| Knowledge in applying watched content on a daily basis. | **3.18** | **0.72** | **Highly Knowledgeable** |
| Prevention of fake contents or negative contents. | **3.51** | **0.66** | **Fully Knowledgeable** |
| Control over what you’re watching/preferences. | **3.62** | **0.62** | **Fully Knowledgeable** |
| **Composite Mean** | **3.29** | **0.70** | **Highly Knowledgeable** |

**Legend:** 3.50 - 4.00 (Fully Knowledgeable); 2.50 - 3.49 (Highly Knowledgeable); 1.50 - 2.49 (Slightly Knowledgeable); 1.00 - 1.49 (No Knowledge)

The table illustrates the perceptions of STEM students regarding short-form content based on five key indicators: understanding its uses, relevance to STEM studies, application in daily life, prevention of fake or negative content, and control over viewing preferences. The mean (M), standard deviation (SD), and corresponding remarks are presented for each indicator, with the following results:

Understanding of short-form content and its uses received a mean score of 3.11 (SD = 0.75), indicating that students are "Highly Knowledgeable" in this area. Relevance of short-form content in STEM studies yielded a mean of 3.04 (SD = 0.77), also classified as "Highly Knowledgeable." Knowledge in applying watched content on a daily basis had a mean of 3.18 (SD = 0.72), demonstrating "Highly Knowledgeable" responses from the students. Prevention of fake contents or negative contents achieved a higher mean of 3.51 (SD = 0.66), falling under the category of "Fully Knowledgeable." Control over what you’re watching/preferences received the highest mean score of 3.62 (SD = 0.62), also categorized as "Fully Knowledgeable."

The composite mean across all indicators is 3.29 (SD = 0.70), suggesting that students are "Highly Knowledgeable" about short-form content overall. This data highlights that STEM students have a strong understanding and application of short-form content in their academic and daily contexts, particularly excelling in areas related to preventing fake content and maintaining control over their viewing preferences.

**1.2 Motivation**

| **Motivation** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Understanding your own motivation to watch/drive short-form content | **3.18** | **0.72** | **Highly Knowledgeable** |
| Knowledge of the psychological triggers of why users prefer short-form content. | **3.08** | **0.79** | **Highly Knowledgeable** |
| Familiarity of how short-form content impacts time consumption. | **3.22** | **0.88** | **Highly Knowledgeable** |
| Personalized algorithms encourage watching more short-form content. | **3.27** | **0.72** | **Highly Knowledgeable** |
| Aware of the link between success and short-form content. (creators/watchers) | **3.11** | **0.86** | **Highly Knowledgeable** |
| **Composite Mean** | **3.17** | **0.80** | **Highly Knowledgeable** |

**Legend:** 3.50 - 4.00 (Fully Knowledgeable); 2.50 - 3.49 (Highly Knowledgeable); 1.50 - 2.49 (Slightly Knowledgeable); 1.00 - 1.49 (No Knowledge)

The table presents the perceptions of STEM students regarding their motivation for engaging with short-form content, evaluated through five indicators. The data includes the mean (M), standard deviation (SD), and corresponding remarks, summarized as follows:

Understanding one's own motivation to watch or drive short-form content has a mean score of 3.18 (SD = 0.72), indicating that students are "Highly Knowledgeable" in this aspect. Knowledge of the psychological triggers that explain why users prefer short-form content has a mean score of 3.08 (SD = 0.79), also classified as "Highly Knowledgeable." Familiarity with how short-form content impacts time consumption is reflected by a mean score of 3.22 (SD = 0.88), demonstrating "Highly Knowledgeable" responses. The influence of personalized algorithms in encouraging more engagement with short-form content received a mean score of 3.27 (SD = 0.72), similarly categorized as "Highly Knowledgeable." Awareness of the link between success and short-form content, whether as creators or viewers, achieved a mean score of 3.11 (SD = 0.86), also indicating "Highly Knowledgeable."

The composite mean across all indicators is 3.17 (SD = 0.80), suggesting that STEM students are generally "Highly Knowledgeable" about their motivations for engaging with short-form content. These findings reflect a strong understanding among students regarding the factors driving their consumption of short-form media, including self-awareness, psychological influences, time management, algorithmic personalization, and the connection to success.

**1.3 Purpose**

| **Purpose** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Knowledge on how purpose drives the creation and consumption of short-form content | **3.34** | **0.68** | **Highly Knowledgeable** |
| Short-form videos help relax and unwind quickly. | **3.32** | **0.70** | **Highly Knowledgeable** |
| Use of short-form content to stay connected with current trends and viral moments. | **3.48** | **0.70** | **Highly Knowledgeable** |
| Short-form content serves as a distraction or mental break from daily activities. | **3.39** | **0.78** | **Highly Knowledgeable** |
| Short-form content used to educate and learn academically through videos. | **3.32** | **0.80** | **Highly Knowledgeable** |
| **Composite Mean** | **3.37** | **0.73** | **Highly Knowledgeable** |

**Legend:** 3.50 - 4.00 (Fully Knowledgeable); 2.50 - 3.49 (Highly Knowledgeable); 1.50 - 2.49 (Slightly Knowledgeable); 1.00 - 1.49 (No Knowledge)

The table provides insights into the perceptions of STEM students regarding the purpose of short-form content, analyzed through five indicators. Each indicator is evaluated based on the mean (M), standard deviation (SD), and corresponding remarks, as summarized below:

Knowledge about how purpose drives the creation and consumption of short-form content has a mean score of 3.34 (SD = 0.68), categorized as "Highly Knowledgeable." Short-form videos' role in helping individuals relax and unwind quickly is reflected by a mean score of 3.32 (SD = 0.70), also classified as "Highly Knowledgeable." The use of short-form content to stay connected with current trends and viral moments achieved a mean score of 3.48 (SD = 0.70), indicating "Highly Knowledgeable." The purpose of short-form content serving as a distraction or mental break from daily activities received a mean score of 3.39 (SD = 0.78), also categorized as "Highly Knowledgeable." Lastly, the use of short-form content for academic purposes, such as education and learning through videos, received a mean score of 3.32 (SD = 0.80), similarly classified as "Highly Knowledgeable."

The composite mean across all indicators is 3.37 (SD = 0.73), which suggests that students are generally "Highly Knowledgeable" about the various purposes of short-form content. These findings indicate that students recognize the multifaceted roles of short-form content, including its utility for relaxation, staying updated, mental breaks, and academic learning.

1. **The Positive and Negative on Short-Form Content**

**2.1 Positive**

| **Positive** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Used to learn more quickly watching short-form content | **3.25** | **0.75** | **Impactful** |
| Making use of short-form content for entertainment | **3.51** | **0.73** | **Impactful** |
| Noticed increase in creativity in certain situations | **3.20** | **0.69** | **Impactful** |
| Have short-form content as a way to acquire information/news | **3.32** | **0.70** | **Impactful** |
| Being able to focus more on one thing | **2.99** | **0.85** | **Impactful** |
| Enhanced Engagement | **3.32** | **0.74** | **Impactful** |
| Improved Info Retention | **3.08** | **0.79** | **Impactful** |
| Flexibility In Learning | **3.27** | **0.58** | **Impactful** |
| Encouragement of Critical Thinking | **3.18** | **0.84** | **Impactful** |
| Increased Collaboration | **2.94** | **0.85** | **Impactful** |
| **Composite Mean** | **3.20** | **0.75** |  |

**Legend:** 3.50 - 4.00 (Highly Impactful); 2.50 - 3.49 (Impactful); 1.50 - 2.49 (Somewhat Impactful); 1.00 - 1.49 (Not Impactful)

The table illustrates the positive impacts of short-form content as perceived by STEM students. Each indicator is analyzed based on its mean (M), standard deviation (SD), and its remark. The results are summarized as follows:

Using short-form content to learn more quickly has a mean score of 3.25 (SD = 0.75), categorized as "Impactful." Utilizing short-form content for entertainment received the highest mean score of 3.51 (SD = 0.73), which is the threshold for being "Highly Impactful." Observing an increase in creativity in certain situations was rated with a mean of 3.20 (SD = 0.69), indicating it is "Impactful." Using short-form content as a way to acquire information or news achieved a mean score of 3.32 (SD = 0.70), similarly categorized as "Impactful."

The ability to focus more on one thing received a slightly lower mean of 2.99 (SD = 0.85), while enhanced engagement in using short-form content was rated with a mean of 3.32 (SD = 0.74), both classified as "Impactful." Improved information retention had a mean score of 3.08 (SD = 0.79), and flexibility in learning was rated at 3.27 (SD = 0.58), both considered "Impactful." Encouragement of critical thinking and increased collaboration scored means of 3.18 (SD = 0.84) and 2.94 (SD = 0.85), respectively, indicating they are also "Impactful."

The composite mean of 3.20 (SD = 0.75) reflects an overall assessment that the positive effects of short-form content on learning, creativity, and engagement are perceived to be "Impactful." These findings highlight the versatility and potential benefits of short-form content in enhancing learning experiences and personal development.

**2.2 Negative**

| **Negative** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Watching short-form content can be very time consuming | **2.99** | **1.07** | **Impactful** |
| Reduce in critical thinking skills | **2.24** | **0.92** | **Somewhat Impactful** |
| Addiction to watching short-form content | **3.06** | **0.90** | **Impactful** |
| Having less resting/sleeping time | **3.06** | **0.87** | **Impactful** |
| Decrease in eyesight / having too much radiation | **3.08** | **0.90** | **Impactful** |
| Superficial Understanding | **2.61** | **0.79** | **Impactful** |
| Distraction & Overload | **3.13** | **0.90** | **Impactful** |
| Dependency on Simplified Info | **2.94** | **0.85** | **Impactful** |
| Reduced Critical Engagement | **2.68** | **0.94** | **Impactful** |
| Inconsistent Quality | **2.68** | **0.94** | **Impactful** |
| **Composite Mean** | **2.85** | **0.91** | **Impactful** |

**Legend:** 3.50 - 4.00 (Highly Impactful); 2.50 - 3.49 (Impactful); 1.50 - 2.49 (Somewhat Impactful); 1.00 - 1.49 (Not Impactful)

The table presents the perceived negative impacts of short-form content based on the respondents' feedback. Overall, the findings reveal several significant concerns, with most issues rated as "Impactful," and the composite mean score indicating a general agreement about these negative effects.

One of the notable issues identified is the time-consuming nature of watching short-form content, which scored a mean of 2.99. This shows that respondents view the excessive time spent on such content as a significant drawback. Similarly, addiction to watching short-form content and having less resting or sleeping time both scored a mean of 3.06, indicating that frequent use can interfere with daily routines and well-being. Another concern is the negative impact on eyesight due to prolonged exposure to screens, which was rated with a mean score of 3.08. This reflects awareness of potential physical health consequences, such as strain on the eyes or radiation exposure. The respondents also highlighted the tendency of short-form content to contribute to distraction and information overload, which received the highest score of 3.13. This suggests that while such content is engaging, it can overwhelm users and reduce their ability to focus. Other issues include dependency on simplified information, with a mean of 2.94, and superficial understanding of topics, rated at 2.61. These indicate that while short-form content is convenient, it might lead to shallow processing of information and an over-reliance on quick, easily digestible formats. The table also points to concerns about reduced critical engagement and inconsistent quality of content, both rated at 2.68, highlighting the potential for such content to limit deeper thinking and provide unreliable information. The only issue rated as "Somewhat Impactful" was the reduction in critical thinking skills, with a mean of 2.24. This suggests that while it is a concern, respondents did not perceive it as severe compared to other negative effects.

Overall, the composite mean score of 2.85 indicates that the negative impacts of short-form content are considered significant. While users recognize the convenience and appeal of such content, the data underscores the need for mindfulness in consumption to avoid its potential drawbacks.

1. **The benefits and drawbacks of integrating short form content**

**3.1 Benefits**

| **Benefits** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Simplified Learning Style / Learning much more easier and faster | **3.36** | **0.68** | **Impactful** |
| Quick access to information, lessons, topics, etc. | **3.48** | **0.59** | **Impactful** |
| Both have visual and auditory mode of learning | **3.62** | **0.49** | **Highly Impactful** |
| Having flexible learning pace | **3.34** | **0.60** | **Impactful** |
| Learning through short-form content is more engaging | **3.18** | **0.75** | **Impactful** |
| Enhanced Engagement | **3.27** | **0.69** | **Impactful** |
| Increased Accessibility | **3.55** | **0.59** | **Highly Impactful** |
| Improved Retention | **3.25** | **0.71** | **Impactful** |
| Encouragement of Active Learning | **3.32** | **0.60** | **Impactful** |
| Diverse Learning Styles | **3.20** | **0.58** | **Impactful** |
| **Composite Mean** | **3.36** | **0.63** | **Impactful** |

**Legend:** 3.50 - 4.00 (Highly Impactful); 2.50 - 3.49 (Impactful); 1.50 - 2.49 (Somewhat Impactful); 1.00 - 1.49 (Not Impactful)

The table highlights the benefits of using short-form content, emphasizing its ability to make learning more efficient and accessible. One of the most impactful aspects is the combination of visual and auditory modes of learning, which allows users to engage with content in multiple ways, making it highly effective. Additionally, the accessibility provided by short-form content is significant, enabling learners to access information quickly and conveniently.

The content’s simplified learning style and its ability to present information in a faster and easier way were also seen as impactful. It offers flexibility in learning pace, making it suitable for various learners. Short-form content is described as engaging and supportive of active learning, helping to retain information better while catering to diverse learning styles.

Overall, with a composite mean of 3.36, the table reflects that these benefits are considered impactful by respondents, underscoring the potential of short-form content to enhance learning experiences effectively.

**3.2 Drawbacks**

| **Drawbacks** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Time constraints leading to lack of context | **3.13** | **0.73** | **Impactful** |
| Getting distracted most of the time | **3.20** | **0.95** | **Impactful** |
| Decreased in critical thinking skills | **2.56** | **0.82** | **Impactful** |
| Inconsistent learning | **2.78** | **0.94** | **Impactful** |
| Curated Overload | **2.82** | **0.85** | **Impactful** |
| Dependency on Simplification | **2.92** | **0.78** | **Impactful** |
| Variable Quality | **2.99** | **0.80** | **Impactful** |
| Shallow Discussions | **3.01** | **0.81** | **Impactful** |
| Inconsistent Learning Outcomes | **2.82** | **0.98** | **Impactful** |
| Impersonal Learning | **2.75** | **0.81** | **Impactful** |
| **Composite Mean** | **2.90** | **0.85** |  |

**Legend:** 3.50 - 4.00 (Highly Impactful); 2.50 - 3.49 (Impactful); 1.50 - 2.49 (Somewhat Impactful); 1.00 - 1.49 (Not Impactful)

The table presents data on the Drawbacks of short-form content as perceived by STEM students, based on the mean (M) scores, standard deviations (SD), and qualitative remarks.

The findings suggest that STEM students recognize several drawbacks of short-form content, particularly its potential to distract and its lack of depth. The issues of variable quality and shallow engagement further highlight concerns about its reliability as a learning tool. These results emphasize the importance of balancing short-form content consumption with other comprehensive and interactive learning methods to address these challenges effectively.

The overall composite mean of 2.90 (SD = 0.85) indicates that the drawbacks of short-form content are generally perceived as "Impactful," with notable variability in individual responses.

1. **Exposure to short form content**

**4.1 Collaboration**

| **Collaboration** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Short-form content improves ability to work in group | **2.94** | **0.70** | **Agree** |
| Watching short-form content enhances students’ ability to divide tasks equally in group settings. | **2.94** | **0.70** | **Agree** |
| Short-form videos help students develop trust and better communication within their team. | **3.04** | **0.59** | **Agree** |
| Using short-form content enhances students' ability to adapt to different collaborative working styles. | **3.20** | **0.58** | **Agree** |
| Short-form content improves team decision-making through quick idea evaluation. | **2.99** | **0.63** | **Agree** |
| **Composite Mean** | **3.02** | **0.64** |  |

**Legend:** 3.50 - 4.00 (Strongly Agree); 2.50 - 3.49 (Agree); 1.50 - 2.49 (Disagree); 1.00 - 1.49 (Strongly Disagree)

The table examines the perceived impact of short-form content on Collaboration, focusing on how it influences group work dynamics, communication, and decision-making.

The data suggests that while short-form content moderately enhances various aspects of collaboration, such as communication, adaptability, and task division, its influence is limited. These findings imply that short-form content could be integrated into collaborative efforts but should be complemented with other methods to maximize team effectiveness and engagement.

The overall composite mean of 3.02 (SD = 0.64) indicates that respondents generally agree that short-form content positively impacts collaboration, though the effects are not strongly pronounced.

**4.2 Communication**

| **Communication** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Short-form content improves overall communication competency | **3.04** | **0.70** | **Agree** |
| Short-form content impacts the ability to express complex ideas concisely | **3.01** | **0.61** | **Agree** |
| Short-form content helps students explain their thoughts more clearly | **3.06** | **0.68** | **Agree** |
| Watching short-form videos sharpens students’ active listening skills, improving overall communication. | **3.15** | **0.64** | **Agree** |
| Short-form videos encourage more dynamic and engaging public speaking techniques. | **3.18** | **0.68** | **Agree** |
| **Composite Mean** | **3.09** | **0.66** |  |

**Legend:** 3.50 - 4.00 (Strongly Agree); 2.50 - 3.49 (Agree); 1.50 - 2.49 (Disagree); 1.00 - 1.49 (Strongly Disagree)

The table evaluates the perceived influence of short-form content on Communication, particularly its role in enhancing various communication skills among students.

The findings indicate that short-form content has a moderate but consistent positive effect on various aspects of communication, including competency, clarity, and engagement. These results suggest that integrating short-form content into educational or training settings could serve as a supplementary tool to enhance communication skills, especially in areas requiring concise expression and dynamic delivery.

The overall composite mean of 3.09 (SD = 0.66) suggests that respondents agree short-form content contributes positively to communication skills, though the impact is moderate.

**4.3 Creativity and Innovation**

| **Creativity and Innovation** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Short-form videos provide fresh inspiration for tackling STEM problems creatively. | **3.20** | **0.66** | **Agree** |
| Engaging with short-form content promotes innovative thinking in developing STEM projects. | **3.18** | **0.57** | **Agree** |
| Exposure to short-form content boosts creative problem-solving in STEM tasks. | **3.15** | **0.71** | **Agree** |
| Short-form content allows students to experiment with new tools and platforms to solve problems. | **3.32** | **0.60** | **Agree** |
| Helps students visualize the future impact of their creative solutions. | **3.32** | **0.51** | **Agree** |
| **Composite Mean** | **3.23** | **0.61** |  |

**Legend:** 3.50 - 4.00 (Strongly Agree); 2.50 - 3.49 (Agree); 1.50 - 2.49 (Disagree); 1.00 - 1.49 (Strongly Disagree)

The table highlights the influence of short-form content on Creativity and Innovation, specifically its potential to inspire and develop creative approaches in STEM education.

The findings demonstrate that short-form content positively influences creativity and innovation by offering inspiration, fostering experimentation, and encouraging forward-thinking approaches. These attributes are crucial in STEM fields, where novel and practical solutions are often required. Integrating short-form content into educational practices may be a valuable strategy for stimulating creative and innovative competencies among students.

The overall composite mean of 3.23 (SD = 0.61) suggests a consistent agreement that short-form content supports creativity and innovation in STEM contexts.

**4.4 Critical Thinking**

| **Critical Thinking** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Short-form content influences how STEM students approach problem analysis. | **3.06** | **0.68** | **Agree** |
| Short-form content sharpens students' critical thinking in STEM assignments. | **2.99** | **0.70** | **Agree** |
| Short-form content encourages to challenge assumptions and norms | **3.15** | **0.60** | **Agree** |
| Short-form videos challenge students to compare different problem-solving methods effectively. | **3.18** | **0.72** | **Agree** |
| Short-form videos challenge students to explore multiple perspectives before making decisions. | **3.20** | **0.62** | **Agree** |
| **Composite Mean** | **3.12** | **0.67** |  |

**Legend:** 3.50 - 4.00 (Strongly Agree); 2.50 - 3.49 (Agree); 1.50 - 2.49 (Disagree); 1.00 - 1.49 (Strongly Disagree)

The table provides insights into the influence of short-form content on Critical Thinking among STEM students.

The findings demonstrate that short-form content serves as a valuable tool for enhancing critical thinking in STEM education. By influencing problem analysis, promoting a comparison of methods, and encouraging multiple perspectives, short-form content can prepare students to approach STEM challenges with deeper analytical rigor. This highlights its potential as an educational resource to strengthen critical thinking competencies.

The overall composite mean of 3.12 (SD = 0.67) indicates consistent agreement that short-form content positively contributes to developing critical thinking skills.

**4.5 Cultural and Global Citizenship**

| **Cultural and Global Citizenship** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Short-form content increases awareness of global challenges | **3.48** | **0.55** | **Agree** |
| Short-form content broadened the understanding of cultural diversity | **3.29** | **0.63** | **Agree** |
| Short-form content provides sufficient information regarding cultural and global issues | **3.32** | **0.63** | **Agree** |
| Short-form content influenced senses of global citizenship | **3.27** | **0.54** | **Agree** |
| Short-form content regularly helps students develop their cultural perspective | **3.22** | **0.60** | **Agree** |
| **Composite Mean** | **3.32** | **0.59** |  |

**Legend:** 3.50 - 4.00 (Strongly Agree); 2.50 - 3.49 (Agree); 1.50 - 2.49 (Disagree); 1.00 - 1.49 (Strongly Disagree)

The table presents data on the impact of short-form content on Cultural and Global Citizenship among students.

The data highlights the significant impact of short-form content on fostering cultural and global awareness among students. By providing accessible and engaging platforms for learning about global challenges and cultural diversity, short-form content encourages students to think beyond their immediate environment and embrace a global perspective. As the world becomes increasingly interconnected, the role of short-form content in shaping informed, empathetic, and globally conscious individuals cannot be overstated. Integrating this medium into educational practices could further enhance its potential as a tool for promoting cultural and global citizenship.

Overall, the composite mean of 3.32 (SD = 0.59) confirms consistent agreement that short-form content significantly contributes to cultivating cultural and global citizenship among students.

**4.6 Managing Information**

| **Managing Information** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Effectively use short-form content to summarize or gather key information | **3.34** | **0.56** | **Agree** |
| Short-form content helps improve the ability to filter and organize large amounts of information | **3.39** | **0.53** | **Agree** |
| Easier to prioritize information after consuming short-form content | **3.29** | **0.59** | **Agree** |
| Short-form content aids in managing academic data or resources | **3.22** | **0.63** | **Agree** |
| Short-form content enhances research and information literacy skills | **3.29** | **0.66** | **Agree** |
| **Composite Mean** | **3.31** | **0.60** |  |

**Legend:** 3.50 - 4.00 (Strongly Agree); 2.50 - 3.49 (Agree); 1.50 - 2.49 (Disagree); 1.00 - 1.49 (Strongly Disagree)

The table presents data on the influence of short-form content on students' ability to manage information effectively.

The findings emphasize the importance of short-form content as a tool for managing information. Its ability to summarize, filter, prioritize, and enhance research skills positions it as a valuable resource for students. By integrating short-form content into educational practices, educators can further empower students to excel in a knowledge-driven world.

Overall, the composite mean of 3.31 (SD = 0.60) confirms consistent agreement that short-form content positively impacts students' information management capabilities, with a low standard deviation reflecting minimal variability in responses.

**4.7 Problem Solving**

| **Problem Solving** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Using short-form content to find quick solutions to academic or real-life problems | **3.25** | **0.78** | **Agree** |
| Short-form content helps approach problem-solving with more creativity | **3.18** | **0.65** | **Agree** |
| Short-form content can be a personal tool for self-learning regarding problem solving | **3.29** | **0.66** | **Agree** |
| Relies on short-form content for problem-solving strategies | **3.04** | **0.74** | **Agree** |
| Short-form content influences overall problem-solving efficiency | **3.18** | **0.68** | **Agree** |
| **Composite Mean** | **3.19** | **0.70** |  |

**Legend:** 3.50 - 4.00 (Strongly Agree); 2.50 - 3.49 (Agree); 1.50 - 2.49 (Disagree); 1.00 - 1.49 (Strongly Disagree)

The table presents data on the impact of short-form content on problem-solving abilities among students.

Short-form content is a valuable tool for enhancing problem-solving abilities. Its ability to provide quick, creative, and effective solutions makes it a significant asset for students. However, it is important to cultivate a balanced approach, ensuring that reliance on digital resources complements, rather than replaces, critical and independent thinking.

Overall, the composite mean of 3.19 (SD = 0.70) suggests consistent agreement on the positive impact of short-form content in developing problem-solving skills. The moderate standard deviation reflects variability in how strongly students perceive this impact.

**4.8 Personal Growth and Well-Being**

| **Personal Growth and Well Being** | **M** | **SD** | **Remarks** |
| --- | --- | --- | --- |
| Engaging with content related to personal development or well-being in short-form content | **3.32** | **0.63** | **Agree** |
| Short-form content positively influences emotional or mental health | **3.20** | **0.66** | **Agree** |
| Short-form content motivates to adopt better habits or life practices | **3.20** | **0.66** | **Agree** |
| Short-form content as a tool for self-improvement | **3.25** | **0.71** | **Agree** |
| Short-form content contributes to overall personal growth and well-being | **3.11** | **0.71** | **Agree** |
| **Composite Mean** | **3.21** | **0.68** |  |

**Legend:** 3.50 - 4.00 (Strongly Agree); 2.50 - 3.49 (Agree); 1.50 - 2.49 (Disagree); 1.00 - 1.49 (Strongly Disagree)

The table presents data on the impact of short-form content on Personal Growth and Well-Being among students.

The data highlights the significant role that short-form content plays in promoting personal development and emotional health. Its ability to inspire positive change, improve mental well-being, and encourage healthier lifestyles makes it a valuable resource for students seeking personal growth and self-improvement. As digital media continues to shape our lives, short-form content will remain a crucial tool in supporting and enhancing personal well-being.

Overall, the composite mean of 3.21 (SD = 0.68) indicates consistent agreement that short-form content plays a valuable role in fostering personal growth and well-being among students.

**CHAPTER 4**

**SUMMARY, CONCLUSION & RECOMMENDATION**

**Summary**

This research data shows that in the general perceptions of STEM students, short form content is highly impactful in all domains but both negatively and positively. Students report a significant amount of knowledge about, as well as understanding of, short-form content in terms of how applicable it might be to school and daily life as well as control over preferences for such content. Psychological triggers and personalized algorithms motivate students to interact with content; the students understand its connection to success in both content creation and consumption.

Short-form content is viewed as beneficial to learning, engagement, and creativity, with quick access to information and malleable learning experiences. It encourages teamwork, builds better communication skills and creative thinking in STEM projects. Nonetheless, students also identify some critical downsides, such as time consumption, reduced critical thinking, and dependency on simplified information. Despite its disadvantages, short-length content is widely considered a handy device for self-development, critical thinking, and world citizenship education. Students characterize short-form content as beneficial for emotional well-being and cross-cultural learning.

**Conclusion**

According to the study's findings, learning, engagement, and creativity are all enhanced by short-form content. The majority of students has a strong grasp of short-form information, and by using this, they are better able to comprehend what they are consuming, how they may use it in their everyday lives and at school, and what they appreciate about it. Additionally, students are conscious that they comprehend the information's advantages and disadvantages in terms of their psychological makeup. The majority of students believed that there could be drawbacks to short-form content as well. This includes, but is not limited to, procrastination, distraction, and poor time management. However, they also believed that short-form information had several benefits for them, such as a simpler learning style, increased engagement, a combined visual and aural learning mode, and many more. Additionally, despite its shortcomings, the study indicates that students are highly educated about short-form content and describe it as helpful for education, daily living, and psychological needs.

**Recommendation**

Educational institutions and educators should integrate short-form content into the learning process as a supplementary tool to enhance engagement, creativity, and accessibility to information. However, it is critical to provide guidelines that promote responsible consumption and mitigate the negative effects, such as reduced critical thinking and dependency on oversimplified information. Schools can design workshops or modules to teach students how to balance short-form content consumption with in-depth learning, focusing on developing critical thinking and analytical skills.

Furthermore, researchers and developers of educational platforms should explore ways to utilize short-form content effectively in STEM education, such as creating structured short videos for complex topics while encouraging cross-cultural learning and teamwork. Future research could investigate strategies for balancing the benefits of short-form content with traditional, in-depth educational methods to maximize its impact on learning outcomes and personal development.

**Project Proposal**

**Project STREAMLINE**

**Short-form content’s Transformative Effects on Academic Learning and Engagement**

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**Tagunicar, Ethan Heinrich**

**Target Participants : STEM Students in HSU**

**Rationale**

Due to its constant advancement, digital technology has truly permeated people's daily life in the areas of education and entertainment. The quick spread of short-form videos on platforms like YouTube Shorts, Instagram Reels, and TikTok altered how people communicate and consume information. Therefore, as part of overcoming the difficulty presented by rigorous and complicated academic requirements, this shift gives students more opportunities, especially those pursuing the STEM strand at HSU.

As the new learning tool, short-form material promises to help students by delivering knowledge in an entertaining and timely manner. However, it calls into question how it affects more profound learning characteristics, such as pupils' capacity to retain detailed information, develop a critical thinking mindset, and solve complex problems. Therefore, it is both pertinent and crucial to comprehend how short-form content affects STEM students' learning competencies.

To improve student engagement and introduce critical 21st-century learning abilities, the findings will guide ways for successfully integrating short-form content into STEM instruction. In order to maximize the advantages of new technologies in education, this research will offer practical insights that will assist students in integrating and adjusting to the quickly evolving digital landscape.

**Policy**

This study endeavor complies with the strictest guidelines for academic integrity and ethical behavior. Every participant's rights will be respected, particularly those related to informed consent, voluntary involvement, and confidentiality. Respect for intellectual property, objectivity, and correctness shall be given top priority during the data collecting and analysis process.

In line with its justification, the study intends to investigate how short-form information is considered to impact STEM students' learning competencies. The initiative aims to offer practical suggestions for successfully incorporating digital technologies into STEM education by utilizing the insights gathered from this research. Our goal is to promote a better knowledge of how technology can improve critical thinking, memory, and problem-solving abilities while making sure that all procedures adhere to the academic and ethical standards of the organization.

**Objectives**

**Main Objectives:**

* To examine how STEM students' capacity to remember specific knowledge, cultivate critical thinking, and resolve challenging issues is affected by short-form content.
* To determine the advantages and difficulties of using short-form videos as a teaching tool in STEM education.
* To offer helpful suggestions for the successful incorporation of short-form information into STEM education in order to improve learning abilities and engagement.
* To offer perspectives that maximize the educational potential of new technologies while assisting students in adjusting to the changing digital environment.

**Specific Goals:**

* To examine how students’ critical thinking, memory, and problem solving abilities are affected by short-form content.
* To determine the advantages and disadvantages of utilizing short-form content as a teaching tool in STEM education.
* To create plans for incorporating short-form information into instruction in order to improve student participation.

**Mechanics**

**Phase 1: Make a Research Design**

* **Objective:** To develop an integrated and scientifically valid framework for exploring short-form content effects on the STEM students' learning competency and engagement**.**
* **Methodology**
* **Mixed Methods Approach**
* Combine qualitative and quantitative methods to gather comprehensive data on short-form content's impact on learning.
  + - Quantitative: Pre-and post-tests to measure memory retention, critical thinking, and problem-solving skills.
    - Qualitative: Focus group discussions, interviews, and surveys for insights into student engagement and perceptions.
* **Experimental Groups**
  + Divide participants into two groups for a comparative study:

1. Control Group: Traditional learning materials only.
2. Experimental Group: Incorporate short-form content (e.g., TikTok, YouTube Shorts) alongside traditional materials.

* **Content Analysis**
* Examine the format, length, and presentation of short-form videos related to STEM education. Group content into:
* Concept summaries.
* Tutorials on solving problems.
* Study tips and techniques.
* **Participants**
* Target Population: Students of the STEM strand in HSU.
* Enrolment: Self-service through the online and offline media.
* Statistics: Maintain gender balance, class levels, and class standing.

**Phase 2: Implementation Process**

* **Objective:** To implement the short form in the context of STEM education appropriately and measure its influence on learning competencies, engagement, and solving problems using a well-structured comparative study.
* **Preparation before Study**
  + Short Form Content Development
* Work with teachers and content developers to create STEM-themed short-form videos that are interactive, current, and curriculum-specific.
* Preparations of Participants
* Provide orientation to participants on the objectives, procedures, and expectations of the research. Obtain their informed consent.

* **Study Phases**
  + Baseline Assessment
* Administer preliminary tests on which retention of information, critical thinking, and problem-solving of the participants will be gauged.
* Content Enrichment
* Control group: Use regular lesson plans.
* Experimental group: Lesson plans with related short-cut informative videos.
* **Measuring Engagement**
  + Employ analytics (e.g., video viewership metrics, engagement metrics) to measure learners engagement with the short-form content.

* **After Intervention Measurements**
  + Measure learners using the same analytics tools used in the pre-test to measure the changes in the learner's competencies and engagement metrics.

**Phase 3: Data Collection and Analysis**

* **Objective:** To synthesize, analyze and interpret quantitative and qualitative data to measure the impact of the short-form content on memory retention, critical thinking, and student's engagement levels.
* **Tools**
  + Retention Metrics: Memory Tests and Quizzes
  + Critical Thinking Assessment: Scenarios-based evaluation
  + Engagement Metrics: Survey and analytics on usage metrics
* **Comparative Analysis**
  + Compare results between control and experimental groups to see where there are statistically significant differences.
* **Thematic Analysis**
  + Analyze qualitative data from focus groups and surveys to identify themes about student views and barriers.

P**hase 4: Output and Dissemination**

* **Objective:** Develop actionable recommendation and practical tools that will enable educators to integrate short form content in STEM curricula which are shown to lead to better student engagement and learning outcomes.
* **Recommendations**
  + Devise best practice guidelines on how to effectively incorporate short-form content into STEM curricula.
  + Identify best practices about creating engaging, instructional short-form videos.
* **Practical Tools**
  + Devise a repository of curated short-form videos focused on STEM that are suitable for teachers.
* **Report and Presentation**
  + Publication in academic journals, where concrete findings will be presented at educational technology conferences.

**Phase 5: Ethical Considerations**

* **Objective:** All research activities must be conducted with the utmost ethical standards, respecting rights of participants, their privacy, and data integrity in collection and analysis.
* **Informed Consent**
  + The participants should be informed about their rights and the objectives of the study.
* **Confidentiality**
  + Ensure that participant data are anonymized and stored properly.
* **Neutrality**
  + Guard against bias in information gathering and in interpretation.

**Timeframe**

| **Activity** | **Time Allocation** | **Resources Needed** | **Desired Outcome** |
| --- | --- | --- | --- |
| **Phase 1: Research Design - Methodology** | | | |
| MIxed-Methods Design Planning | 1-2 Weeks | Research tools: Statistical software (e.g., SPSS, Excel), qualitative analysis software (e.g., NVivo). | A structured and balanced methodology that ensures reliable and valid data collection. |
| Experimental Group | 1 Week | Content examples: A repository of short-form videos categorized by type (concept overviews, problem-solving, study hacks). | Well-defined experimental and control groups for comparison. |
| Content Analysis | 1-2 Weeks | Facilitators: Research team to manage the control and experimental groups. | A long, comprehensive content analysis structure that organizes the classification of and evaluation of various forms of short-form content. |
| **Phase 1.2: Research Deasign - Participants** | | | |
| Recruitment and Orientation | 1-2 Weeks | Portal on school websites and social media groups; posters in schools Orientation Materials: Consent forms, participant guide, presentation tools.  Survey forms to ensure that there is a proper mix of respondents. | A diversified representative STEM students at HSU.  Participants that are informed, involved, and committed to the study. |
| **Phase 2: Implementation Process - Pre-Study Preparation** | | | |
| Content Creation for short-form | 2-3 Weeks | Editing Software, such as Adobe Premiere, Capcut professional recording equipment  STEM educators and content creators | High quality short videos that are aligned with the curriculum used for experimental groups |
| Participants Orientation | 2-3 Days | Participant manuals, presentation slides, Q&A sessions | Well informed and prepared participants who oriented regarding the study |
| **Phase 2.1: Implementation Process - Study Phases** | | | |
| Baseline Testing | 1 Week | Pre-test questionnaires, memory quizzes, and critical thinking evaluations. | Collective baseline data on knowledge retention, critical thinking, and problem solving ability among participants |
| Content Integration | 4-6 Weeks | Standard lesson plans for control groups and supplemented lesson plans incorporating videos for the experimental groups.  The analytics software to monitor student video viewing behaviors | Proper content integration of short-form video materials into lesson plans.  Active engagement and participation in experimental groups. |
| Monitoring Engagement | During study phase (4-6 Weeks) | Tools to measure video viewership and interaction metrics.  Weekly feedback forms to capture real-time participant insights. | Real-time data on engagement levels with short-form content. |
| Post-Intervention Assessment | 1 Week | Same tools as baseline testing for consistency | Quantifiable and comparable data to measure changes in knowledge retention, critical thinking, and problem solving. |
| Phase 3: Data Collection and Analysis | | | |
| Data Collection | 2 Weeks | Results from pre-test and post-tests. Recordings of focus groups and responses to surveys.  Statistical and qualitative analysis tools like SPSS and NVivo | Accurate and detailed datasets ready for analysis |
| Comparative Analysis | 1 Week | Statistical software and data visualization tools like Tableau | Differences between control and experimental groups clearly identified |
| Thematic Analysis | 1 Week | Transcripts focus and survey groups. | Overview of student opinions and the qualitative impact of short-form content. |
| **Phase 4: Output and Dissemination** | | | |
| Suggestions | 1 Week | Summations of data, educational frameworks, and stakeholder feedback. | Actionable suggestions for how to integrate short-form content in STEM curriculum |
| Practice Tools | 1 Week | Tools and resources for building a repository.  Cloud-based storage websites such as Google Drive. | Access to free repository of short-form videos in STEM for the educator. |
| Report and Presentation | 1-2 Weeks | Report templates, presentation software such as PowerPoint and Canva | Detailed research reports and presentations to disseminate findings to stakeholders and the scholarly community. |
| **Phase 5: Ethical Considerations** | | | |
| Ethical Considerations | Throughout the project | Clearance from ethics review boards, consent forms from participants and safe storage of data | Ethical compliance and confidence of participants in the research process. |

**Flowchart**

