

The Effects of Technological-Based Strategies on the Level of Learning Skills of Junior High School Students in Social Studies

Kiana Marcefia Loreign Limen, Llanhara D. Cuevas, Bel Patrice Tisuela

Bachelor of Secondary Education, Tanauan Institute, Inc.

DOI: <https://doi.org/10.47772/IJRISS.2026.100500322>

Received: 02 May 2026; Accepted: 07 May 2026; Published: 30 May 2026

INTRODUCTION

The integration of technology in education has significantly transformed traditional teaching methods, offering new avenues to engage students and enhance their learning experiences. This research, titled "The Effects of Technological-Based Strategies on the Level of Learning Skills of Junior High School Students in Social Studies," seeks to explore how technology-based teaching methods influence students' learning skills, particularly in the context of Social Studies. As Social Studies encompasses critical thinking, historical analysis, and understanding of societal issues, technology can provide interactive and engaging ways to foster these skills.

The need for this study arises from the increasing prevalence of digital tools in classrooms and the potential of technology to address challenges such as student disengagement and content retention in Social Studies education. While much research has focused on the general impact of technology in education, there is a gap in understanding its specific effects on learning skills in Social Studies for junior high students. This research will help bridge this gap by providing insights into how digital tools can enhance students' abilities to comprehend, analyze, and synthesize historical and social information. Studies such as Okojie et al. (2006), which highlighted the positive effects of multimedia on student engagement, and Thomas & O'Bannon (2007), who emphasized the effectiveness of interactive tools in Social Studies, support the potential benefits of technology in this subject area. Furthermore, Dooly & Sadler (2016) found that technology enhances critical thinking in the social sciences, reinforcing the need to explore how these tools can improve learning outcomes in the junior high school context.

THEORETICAL FRAMEWORK

This study is supported by theories to help the researchers locate the factors that link the effectiveness of Technological-Based strategies on the level of Learning Skills of Junior High School Students in Social Studies to assist the researchers in making generalization and pertinent research findings.

Albert Bandura's Social Learning Theory is the theory that will direct to this investigation. According to Albert Bandura's Social Learning Theory, people pick up knowledge from one another by modeling, imitating, and observing. This process is made easier by technology, which offers peer collaboration platforms, virtual classrooms, and social media networks where students may interact and evaluate peers and teachers. In addition to building a feeling of community, collaborative tools such as Google Classroom, discussion boards, and group project platforms enable students to learn from one another asynchronously or in real time.

Bandura's Social Learning Theory offers an insightful perspective on technology-based teaching methods. Teachers can establish enriched learning settings where students gain knowledge from both their own and other people's experiences by utilizing digital technologies that promote social interaction, observation, and teamwork. Technology may enhance the social components of learning when properly included, making it a potent tool in both conventional and online learning environments.

According to the social learning theory, people pick up new skills by watching and copying the actions of others. This phenomenon was named *observant learning* by Bandura. In other words, learning does not require actual experience of anything. A live observation—that is, a real person modeling or doing the behaviour—is not always necessary for observational learning to take place. It can also occur from seeing fiction or real-life personalities in films, TV shows, video games, etc. (Becton Loveless, 2024).

The second theory that will support this study is Technological Pedagogical Content Knowledge (TPACK) framework by Mishra and Koehler is a model designed to help educators integrate technology into their teaching effectively. Developed by Punya Mishra and Matthew J. Koehler, TPACK builds on Lee Shulman's concept of Pedagogical Content Knowledge (PCK), expanding it to include the intersection of technology with pedagogy and content. The TPACK framework emphasizes the integration of three core domains—technology, pedagogy, and content knowledge—and how these areas intersect to support meaningful learning through technology.

The TPACK framework states that certain technical tools are most effective in teaching and assisting students in developing a deeper, more comprehensive comprehension of the subject matter. Thus, within the TPACK framework, the three categories of knowledge—TK, PK, and CK—are integrated and recombined in different ways. While pedagogical content knowledge (PCK) describes the connection between pedagogical methods and specific learning objectives, technological pedagogical knowledge (TPK) describes the linkages and interactions between technology tools and specific pedagogical practices. Finally, technical content knowledge (TCK) explains how learning objectives and technology interact and intersect. These triangulated areas then make up TPACK, which recognizes that educators are operating in this complicated domain and takes into account the relationships among all three areas (Kurt, 2019).

Teachers can use the TPACK framework as a guide to carefully incorporate technology into their lessons, making sure that it complements the material being taught as well as their teaching strategies. Teachers may design rich learning experiences that engage students, encourage collaboration, and improve their comprehension of difficult subjects by establishing a balance between their technological, pedagogical, and content knowledge. In the end, the TPACK framework assists educators in utilizing technology as an essential element that improves teaching and learning rather than as an independently component.

Additionally, the Connectivism by George Siemens and Stephen Downes, this theory focuses on how technology shapes how individuals learn in an increasingly digital and connected environment. Connectivism highlights the value of networks, relationships, and digital resources in promoting learning when it comes to technology-based teaching methods. It questions individual-centered, traditional learning models and emphasizes the distributed, collective character of knowledge and learning in the digital era. According to this theory, one doesn't learn individually but rather socially. This indicates that students benefit from shared perspectives, ideas, and experiences and learn more efficiently when they engage with others. Additionally, they feel more comfortable voicing their own opinions. As a result, the approach promotes active student participation in the educational process. In contrast to traditional learning, students create information via their interactions with others rather than having it imparted to them by the teacher (Pappas, 2023).

In the digital age, networked learning is crucial, according to connectivism theory. It highlights that learning is a continuous, collaborative activity that includes interacting with people and using online resources. To help students navigate this networked environment and create an interactive, self-directed learning environment, technology-based solutions are crucial. Connectivism teaching methods will continue to be essential in educating students for a world that is becoming more interconnected and information-rich as education develops.

Additionally, Piaget's Constructivism learning theory. In Piaget's perspective, games represent a method to acquire new information, a means to build and enhance knowledge and skills, a method to merge thought and action, and a crucial factor in children's cognitive growth (Zhong, 2019).

Also, Kolb's theory of experiential learning has impacted the comprehension of learning in immersive Virtual Reality. Prior studies support Virtual Reality's capacity to facilitate experiential learning. Virtual Reality experiences that provide immediate feedback and significant interactivity, like the ability to pick up and interact with objects discovered in a virtual setting, facilitate active experimentation (Kwon, 2018; Brocke et al., 2021).

Lastly, the Bloom's Taxonomy by Benjamin Bloom in 1956. In this theory it encourages more profound learning and analytical reasoning among students by offering a systematic framework for educational goals. By classifying cognitive abilities into levels of hierarchy, Bloom's Taxonomy assists teachers in creating lessons, activities, and evaluations that progress from simple memorization to higher-order thinking (Ajayi, 2024).

RESEARCH PARADIGM

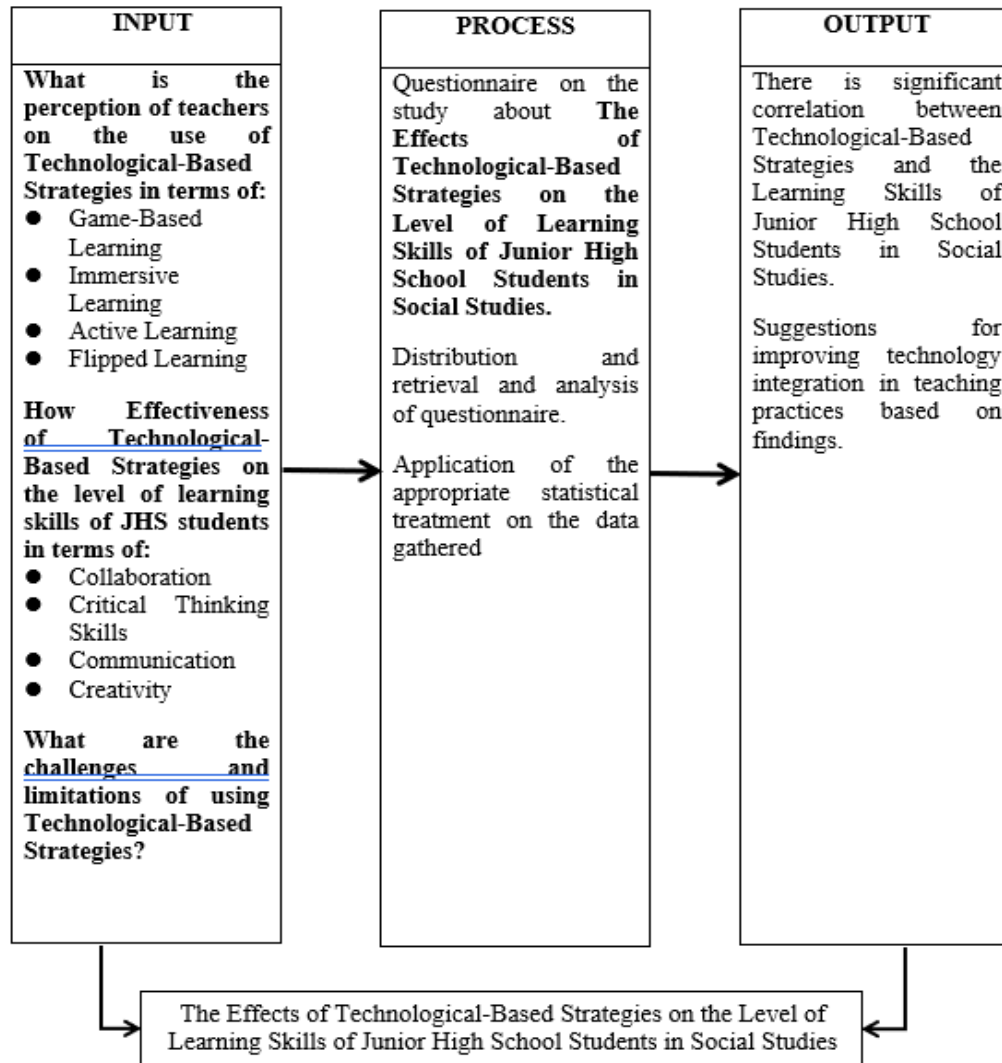


Figure 1. Research Paradigm

The first box (input) contains the respondents' profiles and information related to the researcher's dependent and independent variables. Details of which are specified in the researchers' statement of the problem.

The second box contains the survey questionnaires that are all a part of the researchers' stated method for gathering data. To assess the effects of technology on junior high school students' social studies learning abilities, the researchers decided to split the questionnaire into two components.

The third box (Output) displays the significant correlation between the effects of technology on junior high school students' social studies learning abilities.

The cycling arrows that connect the boxes (input-process-output) shows the process in the effects of technological-based strategies on the level of learning skills of junior high school students in social studies.

STATEMENT OF THE PROBLEM

This study aims to investigate the effects of technological-based strategies on the level of learning skills of

Specifically, the study will answer the following questions:

1. What is the perception of the respondents on the use of technological-based strategy in teaching junior high school students in terms of;

- 1.1 game-based learning;
- 1.2 immersive learning;
- 1.3 active learning; and
- 1.4 flipped learning?
2. What is the level of learning skills of junior high school students in terms of;
 - 2.1 collaboration;
 - 2.2 critical thinking skills;
 - 2.3 communication; and
 - 2.4 creativity?
3. Is there a significant relationship between the technological-based strategy and the learning skills of junior high school students?
4. Based on the result of the study, what is the recommended technological-based strategies to increase the learning skills of junior high school students.

SIGNIFICANCE OF THE STUDY

This study is beneficial to the following:

To the Students. This study highlights how the use of technology can foster a more dynamic and participatory learning environment, allowing them to collaborate with peers, develop critical thinking skills through interactive activities, and communicate ideas more effectively.

To the Teachers. The study provides teachers with information about how various technology methods and instruments, including flipped classrooms, game-based learning, and immersive learning, might improve their teaching practices. These techniques may be used by teachers to improve the engagement, interest, and suitability of their classes for a variety of learners.

To the Parents and Guardians. The study gives parents and guardians a better knowledge of how technology might improve the education of their children. Parents may better understand the importance of technology in their children's education by studying how digital strategies and instruments foster abilities like creativity, critical thinking, collaboration, and communication.

To the School Administrators. The study emphasizes how technology may encourage student participation, critical thinking, creativity, and teamwork. With this knowledge, administrators can support a technologically advanced learning environment that supports a variety of learning styles and improves academic results by promoting the use of digital tools and resources.

To the Future Researchers. The study can inspire future research on how various technological tools can be integrated into other subject areas, beyond Social Studies, to assess their impact on learning outcomes. Researchers can explore the broader implications of technology use across disciplines.

HYPOTHESIS

Based on the statement of the problems, the hypothesis is drawn. There is no significant correlation between technological-based strategies and the level of learning skills of the junior high school students.

SCOPE AND LIMITATIONS OF THE STUDY

This study is mainly focused on the Effects of Technological-Based Strategies on the Level of Learning Skills of Junior High School Students at Selected Public Schools in Tanauan City, Batangas. The researchers will limit the study to 42 Social Studies Teachers ages 20-60 above years old.

DEFINITION OF TERMS

The following terms are defined operationally to facilitate easy understanding of the study:

Active Learning. Active learning is an instructional approach that actively engages students in the learning process, encouraging them to take responsibility for their learning through activities and exercises.

Collaboration Skill. Collaboration skill refers to the ability to work effectively and harmoniously with others to achieve common goals. These include problem-solving, cooperation, and communication skills that allow individuals to listen to others, share their ideas, and play to each other's strengths in a group environment.

Communication. Communication is the process of exchanging information, ideas, thoughts, or feelings between individuals or groups. It can occur through various channels, including verbal, non-verbal, written, and digital forms.

Content Knowledge (CK). Content Knowledge (CK) refers to the teachers' understanding of the subject matter or discipline they are teaching. It encompasses the facts, concepts, theories, principles, and ideas that make up a particular area of knowledge, such as mathematics, science, history, language, or the arts.

Creativity Skill. Creativity Skill refers to the capacity to come up with new ideas, solutions, or methods for issues. These abilities involve using creative thinking, creativeness, and unconventional thinking to opportunities or obstacles in a variety of disciplines.

Critical Thinking Skill. Critical Thinking Skill refers to the ability to analyze, evaluate, and interpret information in a logical, objective, and systematic way. It involves questioning presumptions, taking into account other viewpoints, and coming at well-reasoned conclusions based on logic and facts rather than feelings or biases.

Flipped Learning. Flipped Learning is an educational strategy where the traditional model of instruction is reversed. Instead of learning new content during class and doing homework afterward, students first learn new material on their own, often through videos, readings, or online resources.

Game-Based Learning. Game-Based Learning is an educational strategy that incorporates game elements and principles to enhance learning experiences. It involves using games or game-like environments to engage students, motivate them to learn, and help them develop specific skills or knowledge.

Immersive Learning. Immersive Learning is a teaching strategy that involves fully immersing students in a subject or experience in order to facilitate more effective learning. This can be achieved through various techniques such as simulations, virtual reality, and experiential activities.

Information and Communication Technology (ICT). Information and Communication Technology (ICT) is a term that describes the many technological tools and resources used to create, store, transmit, share, and exchange information.

Learning Skill. Learning Skill refer to the abilities and techniques that enable individuals to acquire, retain, and apply knowledge effectively. These skills are essential for processing information, solving problems, and adapting to new learning situations.

Pedagogical Knowledge (PK). Pedagogical Knowledge (PK) refers to a teacher's understanding of the methods, strategies, and approaches used to facilitate learning and manage a classroom. It involves knowledge about how

to teach effectively, how to assess students, and how to create an environment that promotes student engagement, motivation, and development.

Technological-Based Strategies. Technological-Based Strategies refers to the process of improving teaching, learning, and problem-solving via the use of technological tools, resources, and applications. In order to increase productivity, engagement, and results, these strategies use digital technology into several areas of education or business.

Technological Knowledge (TK). Technological Knowledge (TK) refers to a teacher's understanding of technology tools, resources, and systems and how to effectively use them in the classroom. This knowledge includes familiarity with a wide range of digital tools, software applications, online resources, and educational technologies that can support teaching and enhance student learning.

Technological Pedagogical Content Knowledge (TPACK). Technological Pedagogical Content Knowledge (TPACK) is a framework that defines the knowledge teachers need to integrate technology effectively into their teaching.

Virtual Reality (VR). Virtual Reality (VR) is a computer-generated simulation or recreation of a three-dimensional environment that can be interacted with using special electronic equipment, such as VR headsets, gloves, or controllers.

REVIEW OF RELATED LITERATURE AND RELATED STUDY

This chapter provides an overview of previous research on knowledge sharing and networks. It introduces the framework of the study that comprises the main focus of the research described in this thesis.

Related Literature

Foreign

Digital game-based learning is an innovative approach that harnesses the power of computer and video games to enhance the educational experience for students. By integrating educational content and learning principles into interactive games, educators can create a dynamic and engaging 21st century classroom environment. This method allows students to learn in a way that is both fun and effective, promoting better retention of information and increasing overall engagement with the material. Digital game-based learning provides a unique opportunity for students to develop critical thinking skills, problem-solving abilities, and collaboration skills while also having fun and staying motivated to learn. With the advancements in technology, teachers can leverage this approach to create personalized learning experiences that cater to the individual needs and preferences of each student, ultimately leading to improved academic outcomes and a more inclusive and dynamic classroom environment. (Coffey, 2017).

Game-based learning is an innovative educational approach that seamlessly blends theoretical content with interactive gameplay to engage and motivate students. By harnessing the power of games, educators can create immersive learning experiences that encourage exploration and critical thinking. This method not only facilitates the understanding of complex concepts but also enables students to achieve targeted learning outcomes in a fun and stimulating way. Through this dynamic approach, learners are able to delve into challenging learning environments, apply knowledge in practical scenarios, and develop essential skills such as problem-solving, collaboration, and decision-making. Ultimately, game-based learning provides a unique opportunity for students to experience dynamic and engaging educational experiences that foster curiosity, creativity, and a love for learning. (Chen et al., 2018).

In their study, Hwang et al. (2016) emphasized the importance of incorporating fantasy, curiosity, challenge, and control into educational computer games to enhance student engagement and learning outcomes. Fantasy refers to the immersive scenarios and worlds created within the games, captivating students and sparking their imagination. These fantastical elements not only pique students' interest but also make learning more enjoyable

and memorable. By transporting learners to new and exciting virtual environments, educational computer games can motivate students to actively participate and explore new concepts with enthusiasm. Ultimately, the integration of fantasy helps to maintain students' focus and increase their overall learning efficiency.

Pho and Dinscore (2015) conducted a study on game-based learning and concluded that while it may not be inherently superior to traditional learning approaches in terms of educational potential, it does have a unique ability to significantly enhance student motivation and engagement with the subject matter. The interactive and immersive nature of games can captivate students' attention and make learning more enjoyable and memorable. By incorporating elements of competition, collaboration, and problem-solving, game-based learning has the potential to not only increase student interest in the material being taught, but also foster a more dynamic and interactive learning environment. Additionally, the instant feedback and rewards system in games can provide students with a sense of achievement and progress, motivating them to continue learning and improving. Ultimately, while game-based learning may not be a one-size-fits-all solution, it certainly offers a valuable tool for educators to enhance student learning experiences.

A study conducted by Kucher (2021), have established that students are better able to retain knowledge learned through game-based approaches than that encountered through other learning approaches, but that this is dependent on the domain in question; interdisciplinary topics that require skills such as critical thinking, interpersonal communication, and debating are those that are associated with the greatest game-based learning advantage.

Virtual Reality (VR) is often understood not as a singular concept but as part of a broader continuum, which is increasingly referred to as Extended Reality (XR). This continuum encompasses a range of immersive technologies that combine elements of both the real and virtual worlds. On one end, Virtual Reality represents a fully immersive, computer-generated environment where users are completely removed from their physical surroundings. In the middle, technologies like Augmented Reality (AR) overlay digital content onto the real world, allowing users to interact with both real and virtual elements simultaneously. Mixed Reality (MR) extends this idea further, enabling virtual objects to interact with and respond to the real-world environment in real-time. On the opposite end of the spectrum, there are technologies that capture or enhance real environments, such as 360-degree video or simulations of physical spaces. The term "Extended Reality" (XR) serves to unify all these experiences, emphasizing that Virtual Reality exists within a larger and evolving landscape of immersive technologies, where the boundaries between the real and the virtual are increasingly fluid and interconnected (Scavarelli et al. 2021).

In their study conducted in 2024, Alazmi and Alemtairy explored the effectiveness of virtual reality (VR) technology in enhancing the learning outcomes of middle-school students in the field of social studies. By comparing the academic achievements of students who received VR-based instruction to those who were taught through traditional methods, the researchers uncovered significant improvements in the former group. This innovative approach not only engaged students in immersive and interactive learning experiences but also facilitated a deeper understanding and retention of historical events, cultural concepts, and geographical knowledge. The findings of this study highlight the promising potential of VR technology in revolutionizing the education system and promoting academic excellence among students of all ages.

In their comprehensive study published in 2024, Dau et al. delved into the transformative potential of Virtual Reality (VR) in educational settings. Through a rigorous systematic review, the researchers underscored how VR technologies can facilitate the creation of immersive shared virtual spaces that enable students to collaborate on shared tasks and objectives. Within these virtual environments, students are able to engage in meaningful interactions, fostering a sense of community and enhancing their collective problem-solving skills. By leveraging the capabilities of VR, educators can provide students with unique opportunities to cultivate social and cognitive skills in a collaborative and engaging manner, ultimately enriching their learning experiences.

Despite its benefits, implementing immersive learning in social studies presents challenges. Hamilton et al. (2020) highlighted that while Virtual Reality provides users with high-fidelity graphics and immersive content that can enhance engagement and understanding, there are concerns regarding the lack of research on its efficacy in improving learning outcomes. Furthermore, there is a need to develop effective pedagogical frameworks that

can fully leverage the potential of Virtual Reality in social studies education. Without such frameworks, educators may struggle to integrate this technology into their curriculum in a meaningful way, potentially limiting its impact on student learning. Therefore, a more thorough investigation into the intersection of immersive learning and social studies education is necessary to address these challenges and unlock the full potential of this innovative approach.

According to Gargano and Throop (2017), swift advancements in technology and innovation make the possibilities for authentic learning experiences endless, and therefore should be developed further. In other words, the technology used in our daily lives has the potential to recognize and fix some of the education sector's biggest obstacles. The use of ICT in education enables students to learn independently, develop problem-solving skills and allows educators to enhance the conventional face-to-face learning experience.

The integration of Information and Communication Technology (ICT) in the educational curriculum, particularly in subjects like geography, history, and other social sciences, has significantly enhanced the learning experience for students. Through the use of digital tools and resources, students are able to engage in self-regulated learning, where they have the autonomy to explore topics at their own pace and depth. This individualized approach to learning allows students to focus on areas they find most challenging or interesting, leading to a more meaningful understanding of the subject matter. Additionally, ICT has facilitated collaboration among students, enabling them to work together on projects, share ideas, and learn from each other's perspectives. This not only enhances their social and communication skills but also fosters a sense of community within the classroom. Furthermore, the use of technology has also strengthened the relationship between teachers and students, as educators can provide personalized feedback, guidance, and support through online platforms and communication channels (Miralles-Martínez et al., 2019).

Amin (2019) emphasizes the crucial role that technology plays in transforming the landscape of language teaching and learning. With the proliferation of digital tools such as computers, phones, tablets, and laptops, educators are provided with a plethora of resources to enhance ESL education. These devices can be effectively utilized to create engaging and interactive lessons that cater to the diverse learning styles of students. Additionally, online platforms like Kahoot, Google Classroom, and YouTube Edu have become instrumental in supplementing traditional classroom instruction and providing students with access to a wealth of educational content. With the integration of technology into language education, teachers are able to facilitate more personalized and adaptive learning experiences for their students, ultimately fostering greater language proficiency and fluency.

More specifically, technology engages students behaviorally (more effort and time spent participating in learning activities); emotionally (positively impacting attitudes and interests towards learning); and cognitively (mental investment to comprehend content). Whether technology is integrated during class time or after school hours, students are given more opportunities to interact with instructors, collaborate with peers and engage themselves in the learning process. Specific technology examples that have been shown to enhance student engagement include web-conferencing software, blogs, wikis, social networking sites and digital games (Schindler et al., 2017).

The flipped classroom approach is defined as 'everything that was traditionally done in the classroom is now done outside the classroom and vice versa' (Asiksoy and Özdamli, 2016). However, simply changing the order of teaching and learning activities is not enough to describe this educational approach. Therefore, Bergman and Sams tried to define the flipped classroom approach systematically (O'Flaherty et al., 2015). As they defined, the flipped classroom approach is a technology-supported educational approach that consists of two components: (1) Individual and direct computer-centered education outside the classroom through video lectures and (2) Group interactive activities inside the classroom (Mellati et al., 2015a; Mangaroska and Giannakos, 2019). Specifically, this definition emphasizes the need to use educational video in learning outside the classroom.

In their 2015 study, Al-Fadhli and Al-Harbi delved into the intricate relationship between collaborative learning strategies, digital tools, and the development of students' collaboration skills. Through the utilization of cutting-edge collaborative platforms and popular social media platforms, the researchers aimed to unravel how these innovative approaches could not only create a conducive environment for joint learning but also enhance the

cultivation of essential teamwork abilities among students. The study meticulously examined how the integration of collaborative learning strategies and digital tools transformed the traditional classroom dynamic, allowing students to engage in collaborative tasks seamlessly and effectively. By leveraging the power of technology, students were able to engage in real-time collaboration, irrespective of physical distance, fostering a sense of connectivity and shared purpose among learners. Additionally, the utilization of collaborative platforms enabled students to access a wealth of resources, participate in interactive discussions, and receive timely feedback from peers and instructors, thereby enhancing their overall learning experience.

Garrison and Akyol (2015) delve deeply into the intricacies of the Community of Inquiry (CoI) framework, which is a theoretical model used to understand and improve the quality of online and blended learning experiences. Through their research, they highlight the crucial role that technology plays in fostering collaboration skills among learners in these settings. They emphasize how technology serves as a powerful tool for facilitating meaningful interactions and engagement in educational contexts, ultimately enhancing the overall learning experience for students.

Kim & Seo, (2017) explored the impact of technology-mediated collaborative learning tools, such as Google Docs and online discussion platforms, on enhancing students' collaborative skills and academic performance. By delving into the effects of these innovative educational resources, the researchers aimed to uncover the extent to which these digital platforms contributed to fostering a more engaging and interactive learning environment.

In their 2020 study, Martínez and Martín seek into the impact of virtual learning environments and technology-mediated collaboration on the development of teamwork and collaboration skills within virtual teams. Their research shed light on how utilizing these tools can effectively enhance the overall dynamics and effectiveness of virtual teams by facilitating communication, cooperation, and coordination among team members. By exploring the role of virtual learning environments in this context, the study underscored the critical link between technology-supported collaboration and the success of virtual teamwork endeavors.

In his study conducted in 2015, Hsu delves deeply into the various avenues through which technology can serve as a cornerstone in the development and refinement of critical thinking prowess and problem-solving aptitude. By embarking on a comprehensive examination of this subject matter, Hsu eloquently emphasizes the profound importance of embracing a wide spectrum of educational resources, such as immersive simulations, dynamic online dialogues, and interactive multimedia materials, with the overarching goal of nurturing and honing these fundamental cognitive competencies among students.

In their comprehensive review published in 2023, Lee and Chen seek into a wide range of studies spanning the years 2015 to 2023. These studies focus on evaluating the impact of educational technology interventions on the development of critical thinking skills in educational settings. This encompasses diverse contexts, encompassing both K-12 education and higher education systems. Lee and Chen's review aims to provide a thorough examination of how these interventions have contributed to the enhancement of critical thinking abilities among students across various educational levels.

In his 2021 study, Gee, J. P., delves deep into the multifaceted ways in which game-based learning technologies, encompassing simulations, puzzles, and strategy games, play a pivotal role in fostering the development of critical thinking skills among learners across various educational settings and age groups. Through the interactive and immersive nature of these virtual tools, students are provided with a dynamic platform that ignites their problem-solving abilities, hones their decision-making prowess, and refines their analytical thinking faculties. By offering learners the opportunity to navigate complex scenarios and engage with real-world challenges in a risk-free environment, game-based learning not only enhances cognitive skills but also nurtures creativity, adaptability, and collaborative spirit, setting a solid foundation for lifelong learning and success in an increasingly digital-driven world.

Larrabee (2019) seeks into the significance of technology in fostering critical thinking abilities across both K-12 and higher education settings. He elaborates on the various ways in which educational software, interactive simulations, and digital problem-solving tools can be effectively incorporated into classroom instruction to enhance students' cognitive skills and analytical reasoning capabilities. By exploring the intersection of

technology and education, Larrabee sheds light on how these innovative tools not only engage learners but also provide them with hands-on experiences that facilitate deeper learning and understanding.

In their thorough investigation, Mikropoulos and Natsis (2018) meticulously delved into a multitude of scholarly works to shed light on the transformative potential of virtual reality (VR) technology in nurturing the vital skill of critical thinking among students. Through their extensive review, the researchers articulated how VR stands as a promising educational tool capable of revolutionizing learning experiences by providing students with fully immersive and interactive environments. By simulating scenarios where learners are actively engaged in hands-on activities, VR serves as a catalyst for stimulating critical thinking faculties.

In their recent study published in 2021, Lee, K., and Lee, J. seek into the intricate role played by modern digital communication technologies in enhancing the oral and written communication skills of English as a Second Language (ESL) students. The focal point of their research rested on exploring how tools such as video conferencing platforms and chat applications bring about a transformative influence on English as a Second Language learners, empowering them to effectively articulate their thoughts and ideas, thereby enhancing their overall language proficiency. Lee and Lee's study meticulously examined how these digital tools not only bridge the gaps in communication faced by English as a Second Language students but also facilitate substantial improvement in their abilities to express themselves with confidence and clarity.

McKeown, J., & Van Lier, L. (2020) seek into the multifaceted realm of e-learning platforms such as Moodle and Blackboard, illustrating the pivotal role these platforms play in providing students with diverse opportunities to not only refine but also amplify their communication proficiencies. These platforms are instrumental in fostering a dynamic learning environment where students engage in a spectrum of activities, including participatory online lectures, interactive peer discussions, and collaborative assignments.

Rahimi, M., & A. M. Bakar, K. (2018) conducted a thorough evaluation to explore the effectiveness of utilizing various online collaboration tools such as Google Docs, Slack, and Zoom in enhancing students' proficiency in both written and verbal communication skills as they progress over time within educational settings. Their findings shed light on the positive impact these digital platforms have on students' ability to effectively express their thoughts, ideas, and opinions in a coherent manner through written assignments and verbal presentations.

Liu and Chen (2017) seek into the exploration of how a range of digital tools, including online discussion forums, video blogs, and multimedia presentations, can play a significant role in improving the communication abilities of university students. By scrutinizing the impact of these tools on communication skills enhancement, the researchers highlight the crucial connection between technological resources and educational outcomes in the university setting.

Kayworth, T. R., and Leidner, D. E. (2015) seek into the intricate mechanisms through which various communication technologies, such as video conferencing and instant messaging, play a pivotal role in enhancing communication proficiency within virtual teams. Their comprehensive analysis sheds light on the profound impact these technologies have in bridging geographical barriers and fostering collaboration in the increasingly interconnected globalized work environments.

In his 2021 publication, Gee, J. P. seeks into the transformative potential of game-based learning environments as powerful tools for fostering creative thinking among students. Through the incorporation of problem-solving challenges, simulations that demand critical thinking, and platforms that allow for unique creative expression, Gee highlights how Game Based Learning can serve as a dynamic catalyst in shaping students' cognitive skills and nurturing their innovation capacities.

In the study conducted by Tan and Newell (2020), the exploration of technology's incorporation into arts education aimed to seek into how it influences the development of students' creative expression and problem-solving skills. By focusing on the utilization of digital art tools and interactive platforms, the research shed light on the intricate relationship between technology and the enhancement of students' artistic capabilities.

Sawyer, R. K. seeks into the transformative potential of educational technology platforms like virtual reality (VR) and digital games to not only facilitate but also amplify students' creativity through the cultivation of collaborative skills and innovative thought processes. By immersing students in these interactive environments, these cutting-edge tools provide dynamic opportunities for learners to engage with content in a way that encourages exploration, experimentation, and problem-solving.

In their 2019 study, Hämäläinen and Vähäsantanen seek into the realm of educational innovation, specifically focusing on the deployment of digital tools to nurture and cultivate the creative problem-solving capabilities of students. The research explores the impact of online collaboration tools and various digital resources on fostering creativity within educational environments, shedding light on how these technologies can serve as catalysts for unleashing students' imaginative potential and enhancing their ability to think innovatively.

In their 2017 publication, "The Progress of Creativity in the Modern Workplace," Amabile and Pratt seek into the intricate ways in which technology has significantly transformed the environment where creativity thrives within organizations. By examining the impact of digital tools and various platforms, their research sheds light on how these technological advancements have revolutionized the landscape of innovation and problem-solving practices in today's business world.

Local

In the research conducted by Abenes and colleagues in 2020, they delved into the evaluation of how digital Game Based Learning influences students' understanding of Physics. Through their meticulous analysis, the researchers determined that the incorporation of Game Based Learning into educational settings yielded promising results. The study highlighted the potential of Game Based Learning as an effective educational approach that can be implemented in a structured manner.

In their research conducted in 2022, Tinambunan and colleagues delved into the impact of Game-Based Learning (GBL) on enhancing students' levels of motivation and academic achievements specifically in a Science 9 class at Valencia National High School. Employing a quasi-experimental methodology, their study revealed noteworthy results indicating that the incorporation of Game-Based Learning (GBL) tools such as Kahoot and Ed puzzle within the context of the 7E learning cycle significantly contributed to improvements in both student motivation and academic performance.

In the study conducted by Derasin et al. (2023), the researchers delved into a thorough investigation to compare the effects of implementing digital gamification with conventional educational techniques on the academic achievement of students in mathematics. Their extensive quasi-experimental research, which took place at Bantayan National High School, shed light on the notable difference in performance outcomes between students exposed to gamified learning and those engaged in traditional learning methods. The findings unveiled a compelling trend indicating that the integration of gamification strategies in the academic curriculum could remarkably boost students' mathematical skills and understanding, surpassing the outcomes attained through conventional instructional practices.

The University of the Philippines Open University (UPOU) has been at the forefront of integrating immersive technologies into education. In 2020, it hosted the third session of its Edu-Hack podcast series titled "Pedagogical Potentials of Immersive Technologies," featuring experts who discussed the applications of immersive technologies in education. Furthering its commitment, UPOU's OpenTalk 27 in 2022 focused on "Developing Immersive Learning Programs for Higher Education through Augmented Reality (AR), Virtual Reality (VR), and beyond." This session highlighted the benefits, limitations, and potential applications of these technologies in teaching and learning.

The exposure to a flipped classroom resulted in a more significant improvement in understanding of concepts in a biology class as observed by Malto, Dalida, and Lagunzad (2018). This enlightening study further emphasized that the students' engagement with this adaptive teaching approach elicited a remarkable shift in their overall perception and receptivity towards learning, fostering a more positive attitude towards academic challenges. Through this comprehensive exploration, the research underscored the far-reaching potential of the

flipped classroom model as a multifaceted tool for nurturing holistic learning experiences and elevating student performance across various disciplines.

The flipped classroom model, where students engage with learning materials outside class (via online videos or digital resources) and use class time for active, collaborative learning, has shown promise. A study in the Philippines found that this model can be particularly effective in enhancing the understanding of complex subjects like science. This is particularly true when teachers use digital resources, such as educational videos or interactive platforms, and foster student collaboration through tools like peer instruction and online forums (DepEd Tambayan).

Santos, M. J., & Gomez, A. B. (2015) conducted a detailed investigation to explore the impact of technology tools like learning management systems (LMS) and collaboration platforms on the development and improvement of students' collaborative learning skills within the educational context of Philippine public schools. Their study seek into the ways in which these tools play a crucial role in facilitating communication, interaction, and cooperation among students, ultimately leading to enriched collaborative learning experiences.

Lopez & Medina (2017) delve deeply into an in-depth exploration aimed at uncovering and analyzing the multifaceted ways in which technology-based collaborative learning platforms serve as a central mechanism in not only facilitating but also nurturing the development and augmentation of collaborative skills among educators actively engaged in various professional development initiatives within the education landscape of the Philippines. By offering a nuanced perspective on the intricate interplay between technology and collaborative learning, the authors shed light on the pivotal role played by these platforms in fostering a conducive environment for teachers to cultivate and refine their collaborative competencies through participation in structured educational programs.

By embracing technology as a tool for collaboration, teachers are able to cultivate essential skills that are vital for their professional growth and success. Moreover, the study provides valuable insights into how the adoption of such platforms can help bridge geographical barriers, connect educators from diverse backgrounds, and create a supportive community of practice. Overall, Lopez and Medina's (2017) research underscore the significance of technology in empowering teachers to collaborate effectively and equipping them with the necessary skills to thrive in an ever-evolving educational landscape in the Philippines.

In their work published in 2020, Cruz and Tan seek into the practices of K-12 educators in the Philippines as they leverage various collaborative technologies, including shared digital documents and video conferencing tools, to enrich their collaborative teaching efforts. The study explores how these tools are utilized by teachers to foster closer collaboration among themselves and with their students, ultimately enhancing the overall teaching and learning experience.

Reyes, T. P., & Garcia, M. L. (2021) explore the utilization of social media platforms such as Facebook and Twitter within Philippine educational institutions to enhance collaborative learning experiences, facilitate effective communication channels, and foster the sharing of innovative ideas among students. The study sheds light on how these platforms are being leveraged as powerful tools to encourage interactive engagement, enable seamless networking opportunities, and promote a dynamic learning environment where students can actively participate, exchange thoughts, and collaborate on various academic endeavors.

In their 2023 study, Aquino and Tan seek into the ways organizations in the Philippines leverage collaborative technologies, such as project management tools and shared platforms, to enhance teamwork dynamics and boost the overall efficiency of project-based assignments. Their insightful research sheds light on how these digital tools not only streamline communication processes but also facilitate better coordination among team members, leading to more successful project outcomes.

In their comprehensive study carried out in 2015, De La Cruz and Santos delve deeply into the multifaceted strategies surrounding the integration of various technology tools. These tools, which span from interactive online simulations to specialized educational apps and a wide array of digital resources, are meticulously selected and strategically deployed to cultivate and amplify the development of critical thinking abilities among

university students in the specific setting of the Philippines. Through their in-depth analysis, De La Cruz and Santos meticulously examine how each of these technological resources is thoughtfully designed and utilized to not only facilitate learning but also to foster and enhance the students' capacity for critical analysis and problem-solving.

In their study published in 2016, Reyes and Tan investigate the optimal usage of various digital tools, including interactive software and online collaboration platforms, in the educational setting of Philippine classrooms. Their primary objective is to shed light on the transformative potential of these technological resources in enhancing students' critical thinking abilities and problem-solving competencies. By exploring the integration of these tools within the educational framework, the authors aim to highlight the significant impact they can have on fostering a more engaging and dynamic learning environment.

In their 2017 study, Hernandez, V. T., and Medina, A. R., explored the impact of utilizing learning management systems (LMS) such as Moodle and Google Classroom to enhance students' critical thinking abilities. Throughout their research, they extensively analyzed how these digital platforms offer students a broader range of resources and tools to foster deep contemplation and an enriched engagement in inquiry-based learning processes. By utilizing these advanced technologies, students are provided with unique opportunities to interact with educational content in a more immersive and interactive manner, thereby promoting a more profound level of understanding through self-driven exploration and intellectual curiosity.

In their comprehensive study published in 2023, Aquino, J. P., & Cruz, M. A. explore the groundbreaking use of virtual reality (VR) within the realm of STEM education. Their study not only sheds light on the utilization of VR technology but also explores the myriad ways it can be skillfully integrated to enhance the critical thinking abilities of students across various educational settings. Through a series of comprehensive analyses and case studies, Aquino and Cruz provide a comprehensive overview of how VR can serve as a powerful tool to augment students' problem-solving skills and foster a deeper understanding.

Ramos, T. F., & Reyes, N. P. (2021) study into the intricate functionalities of game-based learning platforms, emphasizing the pivotal role played by popular tools like Kahoot! and Quizlet. Through their research, they highlighted how these platforms serve as more than just educational resources; rather, they serve as dynamic catalysts that ignite and nurture critical thinking abilities in students, encouraging active engagement and intellectual development.

Dela Cruz, E. A., & Solis, M. T. (2017) conducted a comprehensive study focusing on the utilization and impact of online collaborative tools, such as Google Docs, Padlet, and Edmodo, within the educational context. Their study shed light on how these digital platforms contribute to enhancing collaborative learning experiences and facilitating communication among students and educators. Moreover, in their subsequent research published in 2019, Flores and Rojas delved into the intricate landscape of technology's role in improving communication skills within distance learning settings. Through their study, they explored how the integration of technological tools can bridge gaps in virtual communication, fostering more efficient and engaging interactions in the realm of online education.

In their 2020 study, Tan, S. M., and Villa, C. P. explored the implementation of e-portfolios within teacher education programs in order to enhance the written and verbal communication abilities of Filipino educators. The research placed a particular focus on how the utilization of e-portfolios could facilitate the development of reflective practices among teachers, encouraging them to continuously evaluate and improve their communication skills. Santos, M. A., & Velez, C. A. (2021) study into the exploration of the effectiveness of widely used video conferencing tools such as Zoom and Google Meet. Their research focuses on understanding the impact of these digital platforms on enhancing the communication skills of college students.

In their 2023 study, Rodriguez, L. M., & Cruz, J. F. explore the impact of utilizing technology tools, including project management software, communication platforms, and instant messaging apps, on the enhancement of communication skills among Filipino professionals engaged in both internal and external business communications. Dela Cruz, N. A., & Villanueva, R. A. (2018) study deeply into the positive impact of diverse mobile applications, such as drawing apps, music composition tools, and video production apps, on fostering

and nurturing the creativity of Filipino students across a spectrum of educational environments. Their research sheds light on how these technological tools not only act as facilitators but also as catalysts for igniting innovative thinking and artistic expression among the students.

In their comprehensive study conducted in 2023, Villanueva and Garcia delved into the strategies adopted by businesses operating in the Philippines to harness the power of technology in cultivating a culture of creativity and fostering innovative solutions. Dela Cruz and Villanueva (2018) delved into the impact of mobile applications on fostering creative expression and enhancing learning among Filipino students. They specifically examined the role of various mobile apps, including drawing and music composition apps, in facilitating the creative process and promoting meaningful educational experiences.

In their insightful 2021 study titled "Enhancing creativity among college students in the Philippines," authors Ramos and Mendoza delve deeply into exploring the impact and effectiveness of incorporating various resources such as design software, digital media tools, and collaborative online platforms in enhancing the creative potential of Filipino college students. By conducting a comprehensive investigation, they aim to uncover the intricate ways in which these innovative tools and platforms can act as catalysts in fostering a conducive environment for creative expression and problem-solving among the student community.

Related Studies

Foreign

Research conducted by Elaish et al. (2019) delved into the realm of mobile game application development, shedding light on its potential impact across different academic disciplines. The study identified digital gaming technology, particularly within the mobile game sector, as a promising avenue for fostering a greater interest in learning among individuals. This form of technology has demonstrated a remarkable ability to engage users through interactive and dynamic gameplay experiences.

Furthermore, the integration of digital games into educational settings has garnered widespread acknowledgment for their ability to enhance learning experiences. Specifically, mobile games are at the forefront of this innovation as they seamlessly encompass the idea of learning through play, a methodology widely regarded as a potent tool for fostering deep and substantial learning outcomes (Su et al., 2015). These interactive games not only captivate students' attention but also offer a dynamic platform for them to actively engage with educational content in a fun and immersive manner.

In the modern technological age, the traditional method of simply using chalk and talking to relay information may no longer be as impactful or efficient as it once was in the past. This shift is largely due to the continuous advancements in technology and the expanding reach of global connections that have revolutionized the way we learn and teach. As educational practices evolve and adapt to the changing landscape, there is a growing recognition of the need for teachers to embrace more flexible and creative approaches to engage students effectively. Research by Pazilah et al. (2019) supports this notion, emphasizing that in today's fast-paced world, education must be dynamic and adaptive to meet the diverse learning needs of students. This underscores the importance of incorporating innovative teaching strategies that cater to different learning styles and preferences, fostering a more inclusive and enriching educational experience.

Integrating games in education allows the reaching of instructional goals in a more fun and creative way (Güven & Özerbaş, 2020). Moreover, the use of games in Social Studies instruction allows the integrating games in education allows the reaching of instructional goals in a more fun and creative way. The use of games in Social Studies instruction allows the students to learn by doing, develop a holistic perspective and understanding of concepts, and foster skills and value acquisition students to learn by doing, develop a holistic perspective and understanding of concepts, and foster skills and value acquisition.

Kaplan-Rakowski and Lin (2022) meticulously examined a total of 32 meticulously selected peer-reviewed studies that spanned the academic years from 2015 to 2020. During their extensive review, they found compelling clues pointing towards the potential efficacy of virtual reality (VR) applications in language

acquisition. For instance, their analyses revealed that VR holds promise as a powerful tool for enhancing contextual vocabulary learning among language learners. Additionally, the duo noted that users generally expressed favorable attitudes towards language learning experiences facilitated by VR technologies.

In the study conducted by Bessa (2021), it was discovered that virtual reality (VR) technology has the extraordinary capability to enable learners to immerse themselves in realistic scenarios, thus offering them the opportunity to engage actively in the learning process. By providing a platform to recreate authentic environments virtually, VR not only enhances learners' participation but also fosters a sense of presence that contributes to an optimal learning experience.

Hein, Wienrich, and Latoschik (2021) a comprehensive review exploring the pivotal role that immersive technology plays in the realm of foreign language learning. Through their thorough examination, they shed light on the profound impact Virtual Reality can exert on student behavior and attitudes, which in turn catalyzes a substantial enhancement in language acquisition processes. This observation underscores not only the potential efficacy but also the growing appeal of immersive technology in transforming and revolutionizing conventional language learning paradigms.

In the insightful study conducted by Başar (2022), the focus was on examining into the seamless incorporation of cutting-edge immersive technologies like virtual reality (VR) and augmented reality (AR) within the domain of foreign language education. These innovative technologies pave the way for a whole new realm of interactive and stimulating learning opportunities, thereby fostering a dynamic educational landscape where students have the chance to actively engage and immerse themselves in language learning within simulated real-world scenarios.

According to Chakraborty et al. (2020), selecting the appropriate media for online learning can significantly impact the overall learning outcomes and student engagement levels. Therefore, it is essential for learners to carefully consider the various media options available and their compatibility with the learning objectives. From videos and interactive simulations to virtual classrooms and online forums, the range of media formats can greatly influence the accessibility and effectiveness of the learning materials. By leveraging the right media tools, students can enhance their understanding of complex concepts, foster collaboration with peers, and receive timely feedback from instructors.

Huang et al. (2023) proposed integrating video tutorials as a key component of a systems programming course implemented in a flipped classroom setting, with the aim of fostering greater engagement among students and encouraging a deeper level of interest and participation in the learning process. By strategically incorporating video-based instructional materials into the curriculum, the objective is to create a more dynamic and interactive learning environment that aligns with the diverse learning styles and preferences of students.

Flipped learning, a methodology gaining recognition in higher education, is being increasingly embraced due to its potential to provide a cost-effective and student-centered approach that can effectively cater to the rising enrollments seen in academic institutions today. The study conducted by Zou et al. (2020) highlights the significance of implementing such a transformative teaching model in higher education settings. This innovative pedagogical method not only supports the sustainability of academic institutions in the face of expanding student populations but also emphasizes the importance of prioritizing student engagement and an interactive learning experience over the conventional lecture-based approach.

Moreover, the implementation of a flipped classroom not only fosters student collaboration but also provides numerous opportunities for interactive teacher-student interactions throughout the learning process, as emphasized by Güler et al. (2023). This innovative approach to teaching and learning not only aids in the development of critical thinking abilities but also cultivates essential teamwork and problem-solving skills that are vital in real-world scenarios, as highlighted in the research by Sevillano-Monje et al. (2022). By flipping the traditional classroom model, students are encouraged to take a more active role in their education, promoting deeper engagement and understanding of academic concepts.

In their research study published in the year 2022, researchers Lai and Bower delve into a detailed examination on the beneficial integration of technological resources in educational environments. Their study focuses on how this integration can effectively enhance students' collaborative competence, paving the way for a more interactive and engaging learning experience. By exploring the potential of technology as a tool to foster collaboration among students, Lai and Bower shed light on innovative ways to cultivate skills crucial for success in today's interconnected world.

Dabbagh and Kitsantas (2021) study into the multifaceted impact of technology on fostering collaborative learning environments. Specifically, they analyze how technologies such as social media and collaborative platforms can revolutionize communication dynamics and teamwork within educational settings. Their comprehensive analysis extends to the innovative utilization of platforms like social media and collaborative tools, showcasing how these technologies have the power to revolutionize traditional educational settings.

Lee, D. L. and Park. M. Y. conducted a comprehensive examination into the effects of a multitude of technology tools, including widely used platforms like Google Docs and Wikis, on the intricate dynamics of teamwork and collaboration. Through their meticulous research, they discovered compelling evidence supporting the notion that these digital tools serve as catalysts in encouraging team members to engage actively and contribute meaningfully, ultimately leading to a significant boost in the overall efficiency of collaborative endeavors.

Lee and Park (2022) study into the ways in which collaborative technologies, like shared project management tools and communication platforms, play a crucial role in boosting teamwork and fostering better collaboration skills within professional settings. Additionally, in their 2018 study, Manca and Ranieri delved into the educational realm to investigate the integration of social media platforms and various digital tools within classroom settings to enhance collaborative learning experiences.

Dede, C., & Richards, J. (2020) study into the profound effects that the incorporation of digital tools such as wikis, collaborative writing platforms, and online forums can have on fostering collaborative skills among both students and educators. Through their insightful analysis, Dede and Richards provided valuable insights into the powerful collaboration that emerges when innovative digital tools are harnessed to promote collaboration, communication, and mutual learning experiences among students and educators alike.

In their recent study in 2022, Hartley, R. E. and Olson, N. L. study into the intricate correlation between the development of critical thinking skills and the incorporation of artificial intelligence (AI) technologies within the realms of educational environments. Moore and Fisher study into the impact of technology-driven strategies within STEM education. They specifically focus on the role of simulations and interactive learning tools in fostering critical thinking skills among students. Morgan and Ríos (2019) study into the intricate relationship between the utilization of technology and the advancement of critical thinking abilities. With a specific emphasis placed on the influence and effectiveness of digital tools within educational environments, their research sheds light on how students' interaction with technology shapes their cognitive abilities.

In their 2016 research, Bates and McMahon explored the impact of technology on the development of critical thinking skills within various educational environments. By focusing on interactive simulations and problem-based learning tools, they demonstrated how these technological resources play a pivotal role in stimulating critical thinking among learners across diverse educational settings. Through their investigation, Bates and McMahon emphasized the significant role that technology can play in enhancing educational practices, particularly in promoting critical thinking skills among a wide range of students.

In their 2020 study, Vongkulluksn and Daniel focus on examining the impact of incorporating technology within university-level curricula on the enhancement of critical thinking and problem-solving abilities among students. This study into the intricate relationship between technological integration and the cultivation of essential cognitive skills, shedding light on how this intersection shapes students' academic growth and preparedness for real-world challenges.

Resta and Laferrière's 2018 study provided valuable insights into the significant impact that modern online collaborative platforms, such as Google Classroom and Slack, have on bolstering communication skills and

cultivating a sense of teamwork among students in educational settings. By delving into the utilization of these digital tools, the study illuminates how they serve as pivotal mechanisms for enhancing students' ability to effectively interact and collaborate within educational contexts.

Duan and Zhang (2021) focus on examining the significance of mobile technology in enhancing communication proficiency within the business realm, with a specific emphasis on the utilization of email and instant messaging platforms. Through their comprehensive analysis, Duan and Zhang (2021) highlight the transformative potential of integrating mobile technologies in contemporary business practices, illustrating how these advancements enable streamlined communication processes, improved information sharing, and enhanced connectivity on a global scale.

Swan (2021) delves into the innovative ways digital technologies, such as online forums and video conferencing platforms, are harnessed to enhance the acquisition and refinement of communication skills within the unique environment of fully online educational settings. The study highlights the transformative potential of digital technologies in revolutionizing educational practices and shaping the future of communication skills development in digital learning environments.

Gorib, M. A., & Al-Daihani, S. M. (what year?) study into the intricate ways in which AI-driven tools, including chatbots, virtual assistants, and language models, can influence the development of communication skills within the dynamic landscape of workplace environments. Their findings emphasize the importance of embracing these innovative technologies as valuable assets in fostering improved communication practices and fostering stronger professional relationships among individuals in diverse organizational contexts.

In their 2015 study, Dumford and Miller study into the profound influence that online learning technologies have on communication skills, particularly emphasizing how these tools shape student engagement levels and the fostering of collaborative skills within virtual learning settings. This comprehensive investigation sheds light on the intricate dynamics at play in online learning platforms, shedding light on the powerful influence that technology wields on modern educational practices.

Lin, J., & Wang, X. (2022) conduct an in-depth exploration into the impact of digital art creation tools on the development of creativity and the enhancement of artistic expression among students pursuing higher education. Through their research, they aim to shed light on the ways in which these innovative tools shape the creative process and empower students to express their artistic ideas more effectively. Furthermore, Kaufman, J. C., & Beghetto, R. A. (2019) study into a well-rounded exploration of the intricate ways in which technology impacts the cultivation of creativity within educational environments. This illuminating discussion not only highlights the various ways in which technology can spark creativity but also underlines the critical role it plays in nurturing innovative thinking among students.

In their 2020 study, Kuo, Y. F., and Liao, P. Y. study into the exploration of how the infusion of creativity into STEM education is revolutionized through the utilization of cutting-edge technology tools, including simulations and 3D modeling. They investigate how this innovative approach not only bolsters students' problem-solving skills but also nurtures their creative thinking abilities.

Buchanan and Hall (2021) study into the impact of digital technologies within the workplace, particularly focusing on how AI-driven design tools can revolutionize the creative process and improve problem-solving abilities among employees. Their study critically analyzed how these advanced digital tools have the capacity to revolutionize conventional creative processes and significantly enhance the problem-solving skills of employees. Their findings underscored the importance of embracing technological advancements in enhancing workplace dynamics and empowering employees to tackle complex challenges with a newfound level of sophistication.

In their comprehensive discussion published in 2023, Gonsalves and McAuliffe delve into the profound impact of utilizing artificial intelligence (AI) tools within various creative sectors, such as music and visual arts. The authors provide insightful perspectives on how AI tools are serving as catalysts for pushing the boundaries of traditional artistic expressions, paving the way for novel approaches and breakthroughs in creativity.

Local

A study by Liu et al. (2020) examined the use of Quizziz, a game-based formative assessment tool, in enhancing students' self-regulated learning. The research highlighted the benefits of incorporating game-based assessments to increase student engagement and provide immediate feedback. The research outcomes underscore the potential benefits of incorporating innovative assessment methods, such as game-based platforms, to revolutionize traditional educational practices and nurture a more participatory and stimulating learning culture for students.

Garcia (2018) conducted a comparative analysis between computer-based and mobile-based game learning frameworks for preschoolers in the Philippines. The study found that both platforms effectively engaged young learners, with mobile-based games offering greater accessibility. This research serves as a valuable contribution to the pedagogical literature, offering insights that can guide educators and policymakers in leveraging technology to enhance learning experiences for preschoolers.

A concept paper by Eslit (2023) discusses the integration of technology in English language teaching within the Philippine context. The study emphasizes the use of digital games to enhance student engagement and improve language proficiency. It also addresses challenges such as limited resources and the need for teacher training. Through its thorough exploration of these issues, the study paints a comprehensive picture of the opportunities and obstacles intertwined with the integration of technology in English language teaching, thereby offering insights that hold the promise of reshaping contemporary language education practices in the Philippine context towards a brighter, technology-enhanced future.

A study by Valdez, Rivera, and Pabico (2015) examined the implementation of an ICT-AR-based immersive learning system in a Philippine higher education institution. The study found that students engaged with Augmented Reality systems had improved learning outcomes due to the interactive and immersive nature of the technology. This positive shift can be attributed to the captivating and interactive aspects of the technology, which immersed students in a dynamic educational environment.

A broader perspective on technology use in Philippine education during the pandemic highlighted by UNESCO underscores the importance of immersive and interactive learning tools. The sudden shift to digital learning due to the pandemic accelerated the use of technologies such as Virtual Reality and Augmented Reality in classrooms, especially in institutions that were previously not as technologically advanced (UNESCO, 2023).

A study by Ugali (2023) examined the correlation between technology integration in educational instruction and students' interest in learning Science 10. The research found that science teachers moderately integrated technology into their teaching, which corresponded with varying levels of student interest, ranging from moderate to high. The study concluded that the extent of technology integration is related to students' interest in learning, suggesting that effective use of technology can enhance student engagement.

Albacete and Banhaw (2019) conducted a qualitative study examining the pedagogical practices of teacher educators in integrating technology into their teaching. Their research identified five key themes: technological tools utilized, reasons for technology integration, perceived advantages, pedagogical practices, and dilemmas encountered. The study emphasized the importance of selecting appropriate technological tools to enhance teaching effectiveness. Additionally, a study conducted in San Jose del Monte City compared the effectiveness of a flipped classroom environment with conventional classrooms for Grade 8 students. It found that the flipped classroom significantly improved academic achievement, especially among students who were previously average or below-average performers. The flipped approach allowed students to learn at their own pace and engage in more interactive, student-centered activities, contrasting with the traditional, teacher-centered methods (Cruz, 2018).

In another study, a flipped classroom approach was implemented in a Grade 7 science class, focusing on topics like solutions, scientific investigation, and properties of substances. The students were provided with online learning materials, which they accessed offline due to limited internet availability, before coming to class for discussions and activities using peer instruction. The study found that students in the flipped classroom group

showed improved engagement and understanding compared to those in a traditional classroom setting (Centeno et al., 2021).

In their comprehensive study conducted in 2023, Lopez, P. A., and Espiritu, C. M. delved into a thorough examination of the utilization of technology as a tool to improve collaborative skills within team-based learning settings across various higher education institutions located in the Philippines. Through their comprehensive investigation, the researchers provided valuable insights into the potential benefits and challenges associated with leveraging technology to enhance collaborative skills, offering a rich tapestry of recommendations and best practices for educators and institutions seeking to optimize team-based learning dynamics in the Philippine higher education landscape.

Mendoza, D. M., & Garcia, R. S. (2022) conduct an in-depth inquiry into the impact of utilizing collaborative online tools on enhancing the quality of group work and fostering student collaboration. Through their comprehensive analysis, Mendoza and Garcia provided valuable insights into the potential benefits and challenges associated with implementing online collaborative tools in the classroom, offering recommendations for how educators can leverage technology to create a more dynamic and interactive learning environment that nurtures creativity, critical thinking, and collaboration skills among students.

In their 2022 study, Santos, R. C., & Dela Cruz, examined the impact of digital platforms such as Google Classroom and Edmodo on promoting collaborative learning within the Filipino high school student population. This study aimed to provide a thorough analysis of the impact these platforms have had on student engagement, interaction, and overall academic performance. Through meticulous examination and data collection, the research findings shed light on the effectiveness of utilizing these innovative tools within the Filipino high school educational system, highlighting the various benefits and challenges associated with their implementation.

Reyes and Lazo (2020) explored the effective utilization of digital tools, such as webinars, online communities, and various social media platforms, aimed at fostering stronger professional collaboration within the community of Filipino teachers. The research delved into the ways in which these innovative technologies could be harnessed to facilitate communication, resource-sharing, and idea exchange among educators, ultimately leading to a more enriched teaching environment

Garcia, S. L., & Hernandez, L. A. (2017) conducted a thorough examination to delve into the profound impact of utilizing online learning platforms on enhancing collaboration skills among Filipino educators. Their study focused on how these platforms play a pivotal role in fostering a dynamic environment where educators can seamlessly share valuable resources and innovative teaching strategies.

In their insightful study published in 2022, Dela Cruz, L. M., and Reyes, M. P. conducted a comprehensive exploration of the intricate relationship between digital literacy and critical thinking skills within the specific academic context of Filipino students. Through a detailed examination and rigorous investigation, the researchers probed deeply into how proficiency in digital literacy plays a pivotal role in fostering and enhancing the development of critical thinking skills among the student population in the Philippines.

Garcia, E. P., & Cruz, A. F. (2019) conducted a comprehensive study to explore the multifaceted ways in which Filipino educators leverage technology to enhance the development of critical thinking skills among their students. Their research delved into the strategic implementation of various digital tools and platforms, such as debate platforms, online research tools, and interactive case studies, aiming to foster a more engaging and interactive learning environment.

Delos Santos, M. L., & Cruz, C. T. (2019) conducted an investigation to discuss deeply the utilization and impact of e-learning tools within the intricate educational framework of various esteemed Philippine universities. Through meticulous research and thorough analysis, they explored how these modern digital tools have been integrated into the educational fabric of these institutions, shedding light on the strategies employed, challenges faced, and the overall effectiveness in enhancing the learning experience for students.

In their 2015 study, Alcaraz and Reyes discuss the multifaceted domain of educational technologies, honing in on the profound impact that digital tools and interactive platforms can have in nurturing the development of critical thinking skills within the context of Filipino higher education. By exploring the transformative potential inherent in these technologies, the researchers shed light on how such innovative tools can serve as catalysts for empowering college students in the Philippines to enhance their analytical reasoning, problem-solving abilities, and overall cognitive aptitude.

Salazar, E. P., & Mendoza, F. J. (2016) explore the impact of various digital tools, including educational apps, online quizzes, and e-learning platforms, on the enhancement of critical thinking skills among high school students in the Philippines. The researchers delved into the effectiveness of these tools in fostering analytical thinking, problem-solving abilities, and decision-making skills within the specific context of the Filipino educational system.

The study conducted by Gonzales, R. T., & Ramos, C. M. (2023) the intricate ways in which various digital platforms, such as email, social media, and collaboration tools, shape and impact the communication skills observed within the dynamic landscape of the Filipino corporate realm. This study highlights the imperative role digital platforms play in molding and reshaping the communication competencies essential for navigating the intricacies of the modern corporate realm in the Philippines.

In their 2019 study, Valdez and Varela conducted research to investigate how the extensive use of mobile communication applications influences the development and practice of interpersonal communication skills among Filipino teenagers, aiming to comprehend the intricate dynamics of digital interactions within this specific demographic group. Through a thorough exploration of various mobile apps commonly utilized by Filipino youths for communication purposes, the researchers examine the behavioral patterns and social implications associated with these digital platforms, shedding light on the ways in which virtual interactions through technology impact face-to-face communication abilities and interpersonal relationships among the younger generation in the Philippines.

Garcia, T. S., & Tan, R. M. (2015) conducted a comprehensive study that delved into the impact and effectiveness of various technology-based learning approaches, such as digital storytelling and multimedia presentations, on the enhancement of communication skills among Filipino students. The findings from their research not only highlighted the benefits of incorporating digital storytelling and multimedia resources into the curriculum but also emphasized the significance of utilizing these methods to create engaging and interactive learning experiences.

De Guzman, P. R., & Reyes, L. P. (2018) conducted a comprehensive study examining the impact of various e-learning platforms, notably Moodle, Zoom, and Skype, on the development of communication skills among Filipino university students in the digital realm. Through their meticulous examination and analysis, the researchers aimed to uncover the nuances and nuances of how these specific platforms contribute to the overall communication proficiency of Filipino students in the digital age.

Tan and Cruz (2018) delve into the perceptions of Filipino students regarding the impact of technology-enabled learning environments on the enhancement of their communication skills. Particularly focusing on online forums, the study explores how students believe these digital platforms contribute to their overall communicative abilities, the research underscores the significance of these digital platforms as facilitators of meaningful interaction and collaborative learning experiences, providing a deeper insight into how technology intersects with communication practices among Filipino students.

The research conducted by Delos Santos, M. C., & Tan, G. A. (2021) emphasizes the impact of mobile learning applications, specifically drawing apps and creative writing platforms, on fostering creativity among Filipino college students. The research underscores how these digital tools not only serve as educational aids but also play a significant role in nurturing innovative thinking and artistic expression among Filipino undergraduates. By exploring the impact of using such technology in an academic setting, the study reveals the positive correlation between mobile learning applications and the development of creative skills among college students in the context of the Philippines.

In their study conducted in 2010, Tan, M. G., and Solis, A. L. examined the impact of technology, specifically digital art tools and multimedia platforms, on promoting creativity within the arts education curriculum for Filipino students. The research undertaken by Tan, M. G., and Solis, A. L. aimed to explore the significant role that technology, including modern digital art tools and diverse multimedia platforms, plays in fostering creative expression and innovation among students in the context of arts education. By focusing on the impact of technology integration, particularly through digital art tools and multimedia platforms, Tan, M. G., and Solis, A. L. sought to offer valuable insights into the ways in which these technological advancements can contribute to the development and promotion of creativity within the arts education framework tailored for Filipino students.

In their 2023 study, Bello and Reyes explore the significant impact of cutting-edge workplace technologies on the creative capabilities of Filipino professionals. The research explores into how design software, virtual brainstorming platforms, and digital marketing tools play a pivotal role in bolstering the artistic and innovative skills of individuals in various industries. The study's findings underscore the vital importance of leveraging such technologies as catalysts for nurturing and honing the creative capabilities of Filipino professionals, ultimately positioning them at the forefront of innovation and artistic excellence in the ever-evolving global workforce.

Gonzales, J. P., & De Guzman, R. F. (2019) highlights the impact of technology-enhanced learning environments on nurturing creativity in Filipino high school students. The study specifically delves into the role of interactive simulations and digital learning apps in promoting innovative thinking and problem-solving skills among these students. Furthermore, the authors underscore the significance of incorporating such cutting-edge technologies into educational settings to empower students to think critically, collaborate effectively, and adapt to the constantly evolving demands of the digital age.

Synthesis

Based on the data and information gathered from different literature and studies both local and foreign, the researcher found some similarities and differences from the previous researchers to the present study.

Innovative learning approaches like game-based, immersive, active, and flipped learning utilize technology to enhance engagement, collaboration, and creativity. Game-based learning integrates educational content into video games, balancing theoretical and interactive elements to improve motivation and knowledge retention (Coffey, H., 2017; Chen et al., 2018). Immersive learning through virtual reality enhances academic outcomes and collaboration but requires robust pedagogical frameworks (Alazmi & Alemtairy, 2024; Hamilton et al., 2020).

Active learning uses ICT to foster self-regulated and collaborative learning, while flipped learning reimagines traditional classrooms by prioritizing interactive group activities during class time (Schindler et al., 2017; Mellati et al., 2015a). Technology-mediated tools like Google Docs and video conferencing boost collaboration and teamwork (Kim, C., & Seo, Y., 2018), while simulations and multimedia resources enhance critical thinking.

Digital platforms improve communication and language skills, especially in ESL contexts (Lee, K., & Lee, J., 2021; Rahimi, M., & A. M. Bakar, K., 2018). Moreover, digital tools and VR encourage creativity by enabling problem-solving and innovative expression (Amabile, T. M., & Pratt, M. G., 2017). These methods demonstrate technology's potential to transform education and develop essential 21st-century skills.

Game-based learning leverages mobile and digital games to create engaging and meaningful educational experiences. Studies highlight that mobile games foster enthusiasm for learning by embodying "learning by playing," an effective method for achieving instructional goals creatively and flexibly (Elaish et al., 2019; Su et al., 2015). This approach enables students to learn by doing, develop holistic perspectives, and acquire skills and values, particularly in subjects like Social Studies (Güven & Özerbaş, 2020). In the context of rapid globalization and technological advancements, integrating games into education is increasingly vital for fostering creativity and adapting to evolving educational needs (Pazilah et al., 2019).

Technology-based tools like learning management systems, collaborative platforms, and social media are effective in fostering collaboration among students and educators (Santos & Gomez, 2015; Lopez & Medina,

2017). These tools facilitate communication, teamwork, and the exchange of ideas, enhancing both teaching and learning experiences.

Digital resources, including learning management systems, virtual reality, and game-based platforms like Kahoot, play a crucial role in developing critical thinking among students (De La Cruz & Santos, 2015; Aquino & Cruz, 2023). These tools encourage analytical problem-solving and interactive learning.

Technological tools like Google Docs, Zoom, and e-portfolios have been instrumental in enhancing written and verbal communication skills among students and professionals (Dela Cruz & Solis, 2017; Santos & Velez, 2021). These platforms provide avenues for collaboration, feedback, and effective interaction.

The integration of digital tools, including mobile applications, design software, and social media platforms, fosters creativity in educational and professional contexts. These tools enable innovative thinking and artistic expression, as evidenced by studies like those of Ramos & Mendoza (2021) and Dizon & Villanueva (2021).

This study differentiates itself from other studies by focusing specifically on teachers as the respondents, rather than students. While most research in the field of educational technology tends to focus on the impact of technology on student learning outcomes, this study shifts attention to the teachers' perspectives and experiences with the integration of technology into their Social Studies classrooms. This teacher-centered approach provides valuable insights into how educators perceive the effectiveness of various technological strategies in enhancing students' learning skills, such as critical thinking, analytical reasoning, and collaboration.

By gathering data from teachers, this study explores the challenges, motivations, and strategies that educators employ when incorporating technology into their teaching practices. Teachers play a pivotal role in selecting, adapting, and utilizing technological tools in the classroom, making their perceptions crucial to understanding the broader impact of technology on learning outcomes. Unlike studies that measure students' performance or directly examine student engagement with technology, this research investigates the educators' views on how technology shapes the development of learning skills in Social Studies. This shift in focus provides a more comprehensive view of the educational ecosystem, recognizing that successful integration of technology depends not just on students' interaction with digital tools but also on teachers' competence, comfort, and pedagogical approaches in using those tools effectively.

Moreover, this study sheds light on the barriers and challenges that teachers face in implementing technology in their classrooms, such as lack of training, limited access to resources, or resistance to change. Understanding these challenges is essential for designing effective professional development programs and providing the necessary support for teachers to feel confident in using technology to enhance student learning. This research also contributes to discussions about teacher readiness and the impact of technology on pedagogy, which are crucial for the successful integration of digital tools in the classroom. Additionally, by focusing on teachers' reflections and strategies, this study highlights the importance of teacher agency in the use of technology. Educators have the power to shape how technology is used in their classrooms, which in turn influences the quality and effectiveness of learning experiences for students. This contrasts with other studies that might focus on student outcomes without considering the underlying role of the teacher in facilitating technology integration.

In essence, this research study offers a teacher-driven perspective, providing a nuanced understanding of how technology-based strategies impact students' learning skills from the point of view of those who are directly responsible for implementing these strategies. By exploring teachers' insights, challenges, and strategies, your research adds depth to the literature on technology in education and provides valuable implications for teacher professional development, curriculum design, and policy-making. This focus on educators makes your study distinct, as it offers a more holistic view of the technological integration process and its potential for fostering essential skills in Social Studies.

Based on the data and information gathered from different literature and studies both local and foreign, the researcher found some similarities and differences from the previous researchers to the present study.

Innovative learning approaches like game-based, immersive, active, and flipped learning utilize technology to enhance engagement, collaboration, and creativity. Game-based learning integrates educational content into video games, balancing theoretical and interactive elements to improve motivation and knowledge retention (Coffey, H., 2017; Chen et al., 2018). Immersive learning through VR enhances academic outcomes and collaboration but requires robust pedagogical frameworks (Alazmi & Alemtairy, 2024; Hamilton et al., 2020).

Active learning uses ICT to foster self-regulated and collaborative learning, while flipped learning reimagines traditional classrooms by prioritizing interactive group activities during class time (Schindler et al., 2017; Mellati et al., 2015a). Technology-mediated tools like Google Docs and video conferencing boost collaboration and teamwork (Kim, C., & Seo, Y., 2018), while simulations and multimedia resources enhance critical thinking.

Digital platforms improve communication and language skills, especially in ESL contexts (Lee, K., & Lee, J., 2021; Rahimi, M., & A. M. Bakar, K., 2018). Moreover, digital tools and VR encourage creativity by enabling problem-solving and innovative expression (Amabile, T. M., & Pratt, M. G., 2017). These methods demonstrate technology's potential to transform education and develop essential 21st-century skills.

Game-based learning leverages mobile and digital games to create engaging and meaningful educational experiences. Studies highlight that mobile games foster enthusiasm for learning by embodying "learning by playing," an effective method for achieving instructional goals creatively and flexibly (Elaish et al., 2019; Su et al., 2015). This approach enables students to learn by doing, develop holistic perspectives, and acquire skills and values, particularly in subjects like Social Studies (Güven & Özerbaş, 2020). In the context of rapid globalization and technological advancements, integrating games into education is increasingly vital for fostering creativity and adapting to evolving educational needs (Pazilah et al., 2019).

Technology-based tools like learning management systems, collaborative platforms, and social media are effective in fostering collaboration among students and educators (Santos & Gomez, 2015; Lopez & Medina, 2017). These tools facilitate communication, teamwork, and the exchange of ideas, enhancing both teaching and learning experiences.

Digital resources, including learning management systems, VR, and game-based platforms like Kahoot, play a crucial role in developing critical thinking among students (De La Cruz & Santos, 2015; Aquino & Cruz, 2023). These tools encourage analytical problem-solving and interactive learning.

Technological tools like Google Docs, Zoom, and e-portfolios have been instrumental in enhancing written and verbal communication skills among students and professionals (Dela Cruz & Solis, 2017; Santos & Velez, 2021). These platforms provide avenues for collaboration, feedback, and effective interaction.

The integration of digital tools, including mobile applications, design software, and social media platforms, fosters creativity in educational and professional contexts. These tools enable innovative thinking and artistic expression, as evidenced by studies like those of Ramos & Mendoza (2021) and Dizon & Villanueva (2021).

This study differentiates itself from other studies by focusing specifically on teachers as the respondents, rather than students. While most research in the field of educational technology tends to focus on the impact of technology on student learning outcomes, this study shifts attention to the teachers' perspectives and experiences with the integration of technology into their Social Studies classrooms. This teacher-centered approach provides valuable insights into how educators perceive the effectiveness of various technological strategies in enhancing students' learning skills, such as critical thinking, analytical reasoning, and collaboration.

By gathering data from teachers, this study explores the challenges, motivations, and strategies that educators employ when incorporating technology into their teaching practices. Teachers play a pivotal role in selecting, adapting, and utilizing technological tools in the classroom, making their perceptions crucial to understanding the broader impact of technology on learning outcomes. Unlike studies that measure student performance or directly examine student engagement with technology, this research investigates the educators' views on how technology shapes the development of learning skills in Social Studies. This shift in focus provides a more comprehensive view of the educational ecosystem, recognizing that successful integration of technology depends

not just on students' interaction with digital tools but also on teachers' competence, comfort, and pedagogical approaches in using those tools effectively.

Moreover, this study sheds light on the barriers and challenges that teachers face in implementing technology in their classrooms, such as lack of training, limited access to resources, or resistance to change. Understanding these challenges is essential for designing effective professional development programs and providing the necessary support for teachers to feel confident in using technology to enhance student learning. This research also contributes to discussions about teacher readiness and the impact of technology on pedagogy, which are crucial for the successful integration of digital tools in the classroom. Additionally, by focusing on teachers' reflections and strategies, this study highlights the importance of teacher agency in the use of technology. Educators have the power to shape how technology is used in their classrooms, which in turn influences the quality and effectiveness of learning experiences for students. This contrasts with other studies that might focus on student outcomes without considering the underlying role of the teacher in facilitating technology integration.

In essence, this research study offers a teacher-driven perspective, providing a nuanced understanding of how technology-based strategies impact students' learning skills from the point of view of those who are directly responsible for implementing these strategies. By exploring teachers' insights, challenges, and strategies, your research adds depth to the literature on technology in education and provides valuable implications for teacher professional development, curriculum design, and policy-making. This focus on educators makes your study distinct, as it offers a more holistic view of the technological integration process and its potential for fostering essential skills in Social Studies.

RESEARCH METHODOLOGY AND PROCEDURES

This chapter reveals the methods of research to be employed by the researcher in conducting the study which includes the research design, population of the study, research instrument and its development establishing its validity and reliability, data gathering procedures, and the appropriate statistical treatment of data.

Research Design

This study utilized a descriptive correlational research design to examine the relationship between technological-based strategies and the level of learning skills of Junior High School Students in selected public secondary schools in Tanauan. The design aims to reveal any significant relationships between the variables, providing insights into how technological-based approaches impact students' learning skills in social studies. Learning management systems (LMS), educational apps, and digital technologies give students the chance to practice digital literacy, critical thinking, and teamwork. Technology-integrated learning settings increase metacognitive awareness, encourage active learning, and increase content engagement (Hew, K. F., & Brush, T. 2020).

This study tests hypothesis regarding the effects of technological-based strategies on the level of student's learning skills, seeking to determine the extent to which these strategies contribute to a deeper comprehension of learning skills among Junior High School Students.

Respondents Of The Study

The respondents of the study are 42 Junior High School Social Studies teachers in Selected Public Secondary Schools in Tanauan. One of the vital processes to keep this study successful. All of these participants are selected through random sampling. This sampling method was conducted where each member of a population had the capability to become part of the sample. The respondents and school were chosen by the researchers because they were suitable and applicable to the study.

OVER-ALL TOTAL TANAUAN PUBLIC SCHOOLS	M	F	T
Balele Integrated High School	1	2	3
Tanauan School of Fisheries	0	7	7

Tinurik National High School	1	6	7
Banjo Laurel National High School	0	2	2
Bernardo Lirio National High School	1	10	11
Tanauan City Integrated National High School	1	9	10
Pantay National High School	0	2	2
TOTAL:	4	38	42

Locale Of The Study

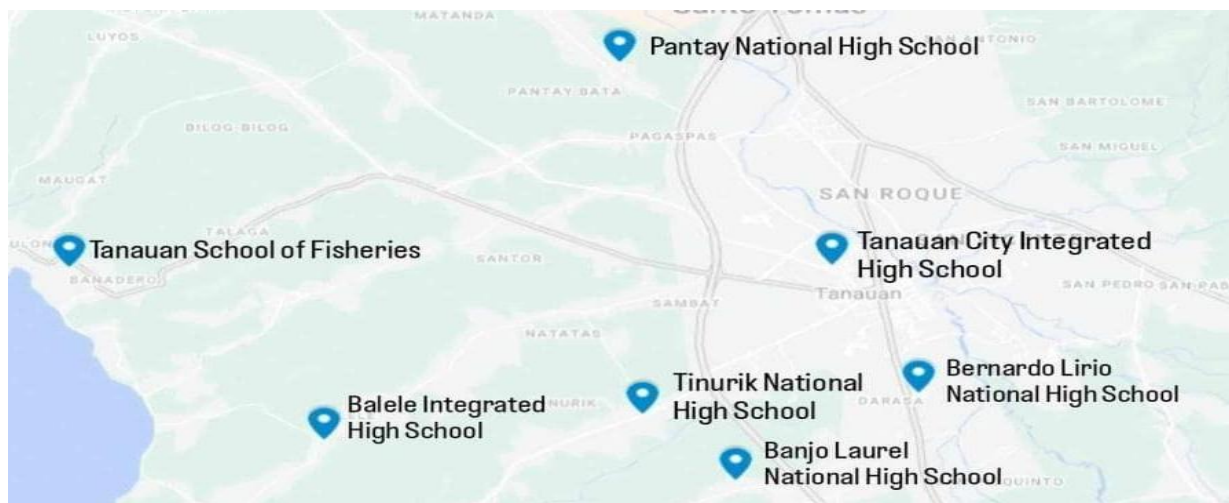


Figure 2. Map Showing the School Used in the Study

This study was conducted in Selected Public Secondary Schools located in the Municipality of Tanauan City.

Sampling Technique

The population of Junior High School Social Studies teachers in Selected Public Secondary Schools are used as respondents. The aim of the study is to determine the Effects of Technological-Based Strategies on the Level of Learning Skills of Junior High School Students in Social Studies.

In selecting the respondents, probability sampling was applied, utilizing a systematic random sampling technique based on Cochran's formula. It is used in surveys to identify the right number of participants/samples. This method is commonly used in surveys to identify the appropriate number of participants or samples, which was determined by the total population size available (Bak-Zabala, 2023). The researchers apply the sampling procedure so that each member of the population has an equal chance of being chosen.

Research Instrument

The survey questionnaire and checklist were used as the main data-gathering instruments. The instrument to be prepared focused on answering the statement of the problem of the effects of technological-based strategies on the level of learning skills of junior high school students in social studies. The questionnaire consisted of eighty (80) questions and was distributed to the respondents.

Part one (1) contained a checklist of demographic information, including age, sex, educational attainment, and years of service. Part two (2) assessed the effectiveness of technological-based strategies on the level of learning skills of junior high school students. The data-gathering instrument was structured as a scale ranging from 1 to 4, where (1) indicates strongly disagree, (2) indicates disagree, (3) indicates agree, and (4) indicates strongly

agree. Part three (3) included a checklist regarding the level of learning skills among students as observed by the respondents. This scale and structure helped the researchers analyze the results of the data-gathering process effectively.

Validity Of The Questionnaire

The researchers created an updated draft of the questionnaire, which was sent to the adviser for feedback. The draft was examined based on its objectives, organization, and content. It was anticipated that some items would be revised to ensure the final version of the instrument met the study's objectives.

Three experts were consulted to validate the questions. The final revised version of the questionnaire was designed to capture the respondents' ideas effectively through the survey. The purpose of the study was to determine the effect of technological-based strategies on the level of learning skills of junior high school students.

After establishing the validity and reliability of the research instrument and obtaining approval of the thesis proposal from the pre-dissertation participants, the researchers sent letters to school principals requesting their assistance in forwarding the research questionnaires to junior high school Social Studies teachers.

Respondents were given adequate time to complete the questionnaire, which was collected personally by the researchers. The researchers then carefully tallied and organized the responses for accurate data analysis.

Reliability Test

The reliability of the research instrument was established to ensure consistency and accuracy in measuring the intended variables. Reliability testing was conducted to assess the internal consistency of the survey questionnaire, which is critical for verifying the dependability of the data collected. This process involved calculating Cronbach's Alpha for each subscale to determine their level of reliability.

Subscales	No. of Items	Cronbach's Alpha	Internal Consistency
Technological-Based Strategy			
Game-Based Learning	10	.934	Excellent
Immersive Learning	10	.934	Excellent
Active Learning	10	.937	Excellent
Flipped Learning	10	.944	Excellent
Learning Skills			
Collaboration	10	.928	Excellent
Critical Thinking Skills	10	.941	Excellent
Communication	10	.942	Excellent
Creativity	10	.966	Excellent

Table 1. Level of Internal Consistency of the Survey Questionnaire

Statistical Treatment Of Data

For meaningful interpretation of the data, the following statistical treatments were applied:

1. Mean: This was applied to determine the responses of the teachers.
2. Standard Deviation: This was used to calculate the dispersion of all teacher responses in the indicators provided for each variable from the mean.
3. Pearson's Correlation Coefficient: This was used to assess the strength and direction of the relationship between the effects of technological-based strategies and the learning skills of junior high school students.

PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter presents the findings of the study in graphical and tabular forms with their respective interpretation.

Part I. The Perception of the Respondents on the Use of Technological-based Strategy in Teaching Junior High School Students

Table 2. 1.1 Perception of the Respondents on the Use of Technological-based Strategy in terms of Game – Based Learning

Indicators	Mean	SD	Interpretation
As a teacher			
1. Game-based learning engages my students effectively.	3.57	0.50	Strongly Agree
2. Using Scrabble can enhance my students vocabulary and it promotes critical thinking skills and teamwork among the students.	3.23	0.76	Agree
3. I observed that my students improved their retention of material through game-based learning.	3.29	0.64	Agree
4. I am confident in implementing game-based learning strategies in my teaching.	3.38	0.79	Agree
5. I receive positive feedback from students regarding the use of game-based learning.	3.45	0.59	Agree
6. I use Quizizz to allow my students review flashcards at their own pace.	2.98	0.87	Agree
7. Game-based learning fosters collaboration and active participation among my students.	3.50	0.59	Strongly Agree
8. Game-based learning improves my student motivation.	3.52	0.67	Strongly Agree
9. Jeopardy is an effective way to teach complex concepts.	3.21	0.65	Agree
10. Role playing can be integrated with collaboration among my students.	3.48	0.59	Agree
COMPOSITE MEAN	3.36	0.11	Agree

Legend: 1.0-1.75-(Strongly Disagree/Not Effective); 1.76-2.50-(Disagree/Less Effective); 2.51-3.25-(Agree/Effective); 3.26-4.00-(Strongly Agree/Highly Effective)

Table 2 reveals the overall mean of 3.36, interpreted as “effective” that the respondents perceived the game-based learning. Indicator one stating that “Game-based learning engages my students effectively.”, got the highest mean of 3.57 with a verbal interpretation of effective while indicator six stated “I use Quizizz to allow my students review flashcards at their own pace.” Got the lowest mean of 2.98 and a verbal interpretation of effective.

Chang et al. (2021) suggested that integration of digital games in educational goals and objectives not only inspire the learners but also provides them with an interactive and innovative learning environment.

Table 2 shows that game-based learning is perceived as effective, with an overall mean of 3.36. The highest-rated indicator, "Game-based learning engages my students effectively," received a mean of 3.57, reflecting its strong impact on student engagement. In contrast, the lowest-rated indicator, "I use Quizizz to allow my students to review flashcards at their own pace," had a mean of 2.98, though still considered effective. These results align with Chang et al. (2021), who noted that integrating digital games into educational objectives inspires learners and creates an interactive and innovative learning environment.

Table 3. 1.2 Perception of the Respondents on the Use of Technological-based Strategy in terms of Immersive Learning

Indicators	Mean	SD	Interpretation
As a teacher			
1. It enhances my student’s engagement.	3.48	0.51	Agree
2. I use role-playing in teaching literature to perform their activities to enhance their understanding of themes and emotions through a collaborative performance.	3.60	0.54	Strongly Agree
3. I have used virtual reality in my teaching.	3.36	0.76	Agree
4. I believe students retain information better through immersive learning.	3.55	0.63	Strongly Agree
5. I use interactive story telling to my students to help them learn vocabulary while also improving their listening and speaking skills.	3.31	0.75	Agree
6. I have access to technologies that support immersive learning.	3.57	0.55	Strongly Agree
7. Simulating real-world scenarios can be used across various subjects.	3.53	0.59	Strongly Agree
8. It can help my students practice communication skills in a safe environment.	3.64	0.48	Strongly Agree
9. Immersive learning promotes student collaboration.	3.57	0.55	Strongly Agree
10. Using voice instructions helps my students to improve student response.	3.45	0.59	Agree
COMPOSITE MEAN	3.50	0.09	Strongly Agree

Legend: 1.0-1.75-(Strongly Disagree/Not Effective); 1.76-2.50-(Disagree/Less Effective); 2.51-3.25-(Agree/Effective); 3.26-4.00-(Strongly Agree/Highly Effective)

The overall mean of this table is 3.50, interpreted as “highly effective” that the respondents perceived the immersive learning. Indicator eight stating that “It can help my students practice communication skills in a safe environment.”, got the highest mean of 3.64 with a verbal interpretation of highly effective while indicator five stated “I use interactive storytelling to my students to help them learn vocabulary while also improving their listening and speaking skills.” got the lowest mean of 3.31 and a verbal interpretation of effective.

Immersive technologies in higher education foster active and engaging learning of students. These technologies help visualize complex concepts, create interactive simulations, and allow students to master practical skills in a controlled environment (Karakozov et al., 2020).

The results in this table indicate that respondents perceive immersive learning as highly effective, with an overall mean of 3.50. The highest-rated indicator, "It can help my students practice communication skills in a safe environment," achieved a mean of 3.64, highlighting its strong effectiveness in fostering student communication. On the other hand, the lowest-rated indicator, "I use interactive storytelling to help my students learn vocabulary and improve listening and speaking skills," had a mean of 3.31, though still considered effective. These findings support the view of Karakozov et al. (2020), who emphasized that immersive technologies in higher education enhance learning by visualizing complex concepts and providing interactive simulations in a controlled environment.

Table 4. 1.3 Perception of the Respondents on the Use of Technological-based Strategy in terms of Active Learning

Indicators	Mean	SD	Interpretation
As a teacher			
1. Debates increases my student participation.	3.55	0.59	Strongly Agree
2. I regularly incorporate active learning strategies in my lessons to ensure students' learning.	3.48	0.59	Agree
3. I have observed students becoming more independent through active learning.	3.52	0.59	Strongly Agree
4. Concept map help my students to develop critical thinking skills.	3.67	0.45	Strongly Agree
5. I believe active learning is beneficial for diverse student needs.	3.67	0.45	Strongly Agree
6. I have seen an improvement in my students' academic performance due to active learning.	3.62	0.54	Strongly Agree
7. Active learning allows for more student feedback in real-time.	3.76	0.43	Strongly Agree
8. I have observed that students enjoy active learning activities.	3.62	0.62	Strongly Agree
9. I believe brainstorming enhances student retention of information.	3.76	0.57	Strongly Agree
10. I think active learning creates a more dynamic classroom environment.	3.62	0.63	Strongly Agree
COMPOSITE MEAN	3.61	0.07	Strongly Agree

Legend: 1.0-1.75-(Strongly Disagree/Not Effective); 1.76-2.50-(Disagree/Less Effective); 2.51-3.25-(Agree/Effective); 3.26-4.00-(Strongly Agree/Highly Effective)

Table 4 indicates the total mean of 3.61, interpreted as highly effective. Indicator seven and nine got the highest mean, while indicator two got the lowest mean. The indicator seven and nine got the highest mean of 3.57 in which teachers are strongly agree when active learning allows students for more feedback in real-time and enhances students' retention of information. While the lowest mean got by the indicator two in which regularly incorporating active learning strategies in lessons to ensure students' learning resulting in effective interpretation.

Active learning is effective because it encourages learners to engage with the material and apply it to relevant, real-world scenarios. It is also important to pair active learning with appropriate and timely feedback (Howell, 2021).

The results in Table 4 show that active learning is perceived as highly effective, with an overall mean of 3.61. Indicators 7 and 9, both scoring 3.57, highlight that teachers strongly agree that active learning provides real-time feedback and improves students' retention of information. However, indicator 2, which focuses on the regular incorporation of active learning strategies in lessons, received the lowest mean, indicating that while it is still viewed as effective, its consistent application may need improvement. This supports Howell (2021), who emphasized that active learning is most effective when paired with timely feedback, allowing students to engage more deeply with the material and apply it to real-world contexts.

Table 5. 1.4 Perception of the Respondents on the Use of Technological-based Strategy in terms of Flipped Learning

Indicators	Mean	SD	Interpretation
As a teacher			
1. Flipped learning encourages students to engage with content and apply their knowledge in real-life context.	3.33	0.57	Agree
2. I have seen improved understanding of concepts through flipped learning.	3.21	0.56	Agree
3. I receive positive feedback from students regarding flipped learning.	3.17	0.54	Agree
4. I feel that flipped learning helps to maximize class time.	3.07	0.51	Agree
5. I believe flipped learning promotes collaborative learning.	3.17	0.54	Agree
6. Flipped learning is suitable for all student learning levels and needs of the learners.	3.17	0.66	Agree
7. I think flipped learning enhances critical thinking skills.	3.21	0.65	Agree
8. I believe students are more engaged in a flipped classroom environment.	3.19	0.59	Agree
9. I find that flipped learning improves communication skills among students.	3.29	0.60	Agree
10. I regularly assess student performance in a flipped learning model.	3.12	0.63	Agree
COMPOSITE MEAN	3.19	0.5	Agree

Legend: 1.0-1.75-(Strongly Disagree/Not Effective); 1.76-2.50-(Disagree/Less Effective); 2.51-3.25-(Agree/Effective); 3.26-4.00-(Strongly Agree/Highly Effective)

Table 5 reveals that the highest-rated statement, with a mean of 3.33, is "Flipped learning encourages students to engage with content and apply their knowledge in real-life context.". This suggests that teachers strongly agree that flipped learning effectively fosters practical application and deeper engagement with the material. On the other hand, the statement with the lowest mean, at 3.07, is "I feel that flipped learning helps to maximize class

time." While this still indicates agreement, it highlights a relatively lower level of confidence among teachers regarding the efficient use of time in a flipped learning model. Overall, the composite means of 3.19 reflects a generally positive perception of flipped learning, with all indicators falling within the "Agree" range, suggesting that educators find value in its implementation across various aspects of teaching and learning.

Flipped classroom encourages student collaboration and offers additional chances for teacher-student engagement throughout the teaching and learning process (Güler et al., 2023).

The results in Table 5 indicate a generally positive perception of flipped learning, with an overall mean of 3.19, suggesting that teachers agree with its effectiveness. The highest-rated statement, "Flipped learning encourages students to engage with content and apply their knowledge in real-life context," received a mean of 3.33, showing strong agreement among teachers about its ability to foster deeper engagement and practical application. However, the statement with the lowest mean, "I feel that flipped learning helps to maximize class time," received a mean of 3.07, indicating less confidence in the model's ability to efficiently use class time. This aligns with Güler et al. (2023), who noted that flipped classrooms promote collaboration and enhance teacher-student engagement, although some challenges may remain in optimizing time management.

Part II. The Level of Learning Skills of Junior High School Students

Table 6. 2.1 Perception of the Respondents on the Level of Learning Skills of Junior High School Students in terms of Collaboration Skills

Indicators	Mean	SD	Interpretation
As a teacher			
1. My students work effectively in groups to complete tasks.	3.57	0.59	Strongly Agree
2. Students are willing to share ideas with peers during projects.	3.55	0.55	Strongly Agree
3. Collaborative activities lead to deeper understanding of the material and better work outcomes.	3.61	0.49	Strongly Agree
4. Students take on various roles during group activities.	3.57	0.55	Strongly Agree
5. I regularly assess students' collaborative skills during group tasks.	3.52	0.55	Strongly Agree
6. I observe improved communication among students during collaborative tasks.	3.57	0.50	Strongly Agree
7. I believe collaboration helps build social skills in students.	3.59	0.50	Strongly Agree
8. I notice increased engagement in students during group works.	3.57	0.55	Strongly Agree
9. I feel that my students learn more effectively when collaborating with peers	3.52	0.55	Strongly Agree
10. Collaboration is a key focus in my teaching approach.	3.62	0.51	Strongly Agree
COMPOSITE MEAN	3.56	0.03	Strongly Agree

Legend: 1.0-1.75-(Strongly Disagree/Poor Level); 1.76-2.50-(Disagree/Low Level); 2.51-3.25-(Agree/High Level); 3.26-4.00-(Strongly Agree/Very High Level)

The highest-rated statement in Table 6, with a mean of 3.62, is "Collaboration is a key focus in my teaching approach." This indicates that teachers strongly agree on the importance of collaboration as a central element of

their teaching practices. The lowest-rated statements, each with a mean of 3.52, are "I regularly assess students' collaborative skills during group tasks" and "I feel that my students learn more effectively when collaborating with peers."

While these scores still reflect strong agreement, they suggest slightly less emphasis or confidence in the assessment process and the effectiveness of collaboration in enhancing learning outcomes. Overall, the composite means of 3.56 reflects a very positive perception of collaboration in teaching, with all indicators within the "Strongly Agree" category.

Collaboration leads to the ability of individuals to contribute effectively in groups by involving knowledge, appreciation and problem solving (Scoular, et al.,2020).

The results in Table 6 indicate a very positive perception of collaboration in teaching, with an overall mean of 3.56, placing all indicators within the "Strongly Agree" range. The highest-rated statement, "Collaboration is a key focus in my teaching approach," received a mean of 3.62, showing that teachers strongly prioritize collaboration in their practices. However, the lowest-rated statements, both with a mean of 3.52, reflect slightly less emphasis or confidence regarding the regular assessment of students' collaborative skills and the belief that collaboration enhances learning outcomes. These results align with Scoular et al. (2020), who emphasized that collaboration improves students' ability to contribute effectively in group settings by fostering knowledge sharing, appreciation, and problem-solving skills.

Table 6. 2.2 Perception of the Respondents on the Level of Learning Skills of Junior High School Students in terms of Critical Thinking Skills

Indicators	Mean	SD	Interpretation
As a student			
1. My students demonstrate the ability to analyze information critically.	3.53	0.54	Strongly Agree
2. I provide opportunities for students to solve real-world problems.	3.53	0.55	Strongly Agree
3. I observe students making connections between concepts.	3.53	0.59	Strongly Agree
4. I regularly include tasks that require critical analysis.	3.53	0.55	Strongly Agree
5. I believe critical thinking is essential for success in my subject.	3.56	0.55	Strongly Agree
6. I see improvements in students' reasoning skills over time.	3.56	0.51	Strongly Agree
7. I regularly assess students' critical thinking abilities.	3.61	0.55	Strongly Agree
8. My students ask insightful questions about the material.	3.64	0.55	Strongly Agree
9. I believe critical thinking enhances student engagement.	3.63	0.55	Strongly Agree
10. Students are able to defend their viewpoints with evidence.	2.49	0.50	Disagree
COMPOSITE MEAN	3.46	0.03	Agree

Legend: 1.0-1.75-(Strongly Disagree/Poor Level); 1.76-2.50-(Disagree/Low Level); 2.51-3.25-(Agree/High Level); 3.26-4.00-(Strongly Agree/Very High Level)

The data indicates that the highest-rated statement, with a mean of 3.64, is "My students ask insightful questions about the material," highlighting that teachers strongly agree that critical thinking fosters inquisitiveness in

students. Conversely, the lowest-rated statement, with a mean of 2.49, is "Students are able to defend their viewpoints with evidence," suggesting a notable area for improvement in students' ability to support their arguments effectively.

The composite means of 3.46 reflects an overall positive perception of critical thinking among students, with most indicators in the "Strongly Agree" category, though the lowest mean underscores a gap in applied critical reasoning skills.

Critical thinking imparts students with skills that allow them to reflect, analyze information and make conclusions while examining facts (Murawaski, 2014).

The data indicates that critical thinking is generally viewed positively by teachers, with an overall composite mean of 3.46, suggesting strong agreement with the development of critical thinking skills in students. The highest-rated statement, "My students ask insightful questions about the material," received a mean of 3.64, indicating that teachers believe critical thinking significantly contributes to students' curiosity and inquiry. However, the lowest-rated statement, "Students are able to defend their viewpoints with evidence," with a mean of 2.49, highlights a gap in students' ability to effectively support their arguments with evidence, suggesting an area for improvement in applied critical thinking skills. These results align with Murawaski (2014), who noted that critical thinking helps students reflect, analyze information, and draw conclusions based on evidence.

Table 8. 2.3 Perception of the Respondents on the Level of Learning Skills of Junior High School Students in terms of Communication Skills

Indicators	Mean	SD	Interpretation
As a teacher			
1. My students express their ideas clearly during discussions.	3.52	0.67	Strongly Agree
2. I provide opportunities for students to present their work.	3.60	0.54	Strongly Agree
3. Students are comfortable asking questions in class.	3.62	0.58	Strongly Agree
4. I regularly assess students' communication skills.	3.64	0.55	Strongly Agree
5. I believe communication skills are essential for success in school.	3.69	0.62	Strongly Agree
6. I encourage students to engage in debates and discussions.	3.47	0.52	Strongly Agree
7. I provide constructive feedback on students' communication skills.	3.60	0.50	Strongly Agree
8. I use role-playing to enhance communication skills.	3.60	0.63	Strongly Agree
9. I believe that effective communication fosters collaboration.	3.54	0.54	Strongly Agree
10. Communication skills are a key focus in my teaching.	3.64	0.48	Strongly Agree
COMPOSITE MEAN	3.60	0.06	Strongly Agree

Legend: 1.0-1.75-(Strongly Disagree/Poor Level); 1.76-2.50-(Disagree/Low Level); 2.51-3.25-(Agree/High Level); 3.26-4.00-(Strongly Agree/Very High Level)

The interpretation of the highest and lowest means from the data highlights the areas of focus and development in teaching communication skills. The highest mean, 3.69, reflects the strong agreement among teachers regarding the essential role of communication skills in achieving success in school. This underscores the belief that communication is foundational to academic and social development.

Conversely, the lowest mean, 3.47, pertains to encouraging students to engage in debates and discussions. While still strongly agreed upon, it may indicate a slightly lesser emphasis or challenge in consistently integrating debates and discussions compared to other strategies like feedback or role-playing. Overall, the composite means of 3.60 demonstrates a strong commitment to fostering communication skills in teaching practices.

The study by Diloyan (2017) effective communication is essential in education. Whether a teacher is instructing a pupil, an effective communication between a parent, coworker, or both is necessary to ensure the success of our students.

The data highlights a strong emphasis on communication skills in teaching practices, with an overall composite mean of 3.60, indicating a strong commitment to fostering these skills. The highest mean, 3.69, reflects teachers' strong agreement on the importance of communication skills for academic and social success, emphasizing their foundational role in student development. On the other hand, the lowest mean, 3.47, relates to encouraging debates and discussions, suggesting a slightly lower emphasis or a challenge in consistently incorporating these activities into teaching. Despite this, all indicators still fall within the "Strongly Agree" category, underscoring the importance of communication skills in education. This aligns with Diloyan (2017), who emphasized that effective communication is critical for the success of students, involving not only teacher-student interactions but also communication with parents and colleagues.

Table 9. 2.4 Perception of the Respondents on the Level of Learning Skills of Junior High School Students in terms of Creativity Skills

Indicators	Mean	SD	Interpretation
As a teacher			
1. I encourage students to think outside the box during projects.	3.67	0.53	Strongly Agree
2. My students demonstrate originality in their work.	3.57	0.50	Strongly Agree
3. I provide opportunities for students to explore their interests creatively.	3.57	0.55	Strongly Agree
4. I observe a variety of creative approaches to assignments.	3.55	0.59	Strongly Agree
5. I provide constructive feedback to enhance students' creativity.	3.69	0.52	Strongly Agree
6. I believe that creativity is essential for problem-solving.	3.67	0.57	Strongly Agree
7. I incorporate arts and creative activities into my teaching.	3.62	0.54	Strongly Agree
8. My students enjoy participating in creative tasks.	3.67	0.48	Strongly Agree
9. I encourage students to express their ideas visually and verbally.	3.52	0.55	Strongly Agree
10. I believe creativity can be developed through practice and feedback.	3.62	0.49	Strongly Agree
COMPOSITE MEAN	3.61	0.03	Strongly Agree

Legend: 1.0-1.75-(Strongly Disagree/Poor Level); 1.76-2.50-(Disagree/Low Level); 2.51-3.25-(Agree/High Level); 3.26-4.00-(Strongly Agree/Very High Level)

The interpretation of the highest and lowest means in the data reflects priorities in fostering creativity. The highest mean 3.69 relates to providing constructive feedback to enhance students' creativity, signifying that teachers recognize feedback as a vital tool for nurturing originality and innovation.

On the other hand, the lowest mean, 3.52, pertains to encouraging students to express their ideas visually and verbally. While still strongly agreed upon, this suggests a slightly lesser emphasis or challenge in implementing this practice compared to others. The composite means of 3.61 confirms a strong overall commitment to promoting creativity in teaching.

Creativity is an important aspect of human development, which is no exception in educational institutions such as schools (Chan & Yuen, 2014). Educational institutions are the right place to develop creative talents and the ability of students to think creatively.

The data indicates a strong focus on fostering creativity in teaching, with an overall composite mean of 3.61, reflecting a commitment to nurturing creativity among students. The highest-rated statement, with a mean of 3.69, highlights the importance of providing constructive feedback to enhance students' creativity, suggesting that teachers view feedback as a critical tool for encouraging originality and innovation. However, the lowest-rated statement, with a mean of 3.52, relates to encouraging students to express their ideas both visually and verbally. While still strongly agreed upon, this score suggests a slightly lesser emphasis or potential challenge in consistently implementing this practice compared to other strategies. Overall, the results emphasize the importance of fostering creativity as a key teaching priority.

Part III. Significant relationship between the technological-based strategy and the learning skills of Junior High School Students

Table 10. Significant relationship between the Game-based Learning and the learning skills of Junior High School Students

Learning Skills of the Junior High School Students in Social Studies	r-values	p-values	Decision and Interpretation
Collaboration	0.4279	0.00136	Reject Ho, the result is significant at $\alpha = 0.05$
Critical Thinking Skills	0.4435	<0.0001	Reject Ho, the result is significant at $\alpha = 0.05$
Communication	0.4221	0.7211	Accept Ho, the result is NOT significant at $\alpha = 0.05$
Creativity	0.4328	0.00032	Reject Ho, the result is significant at $\alpha = 0.05$

Table 10 shows a significant relationship between game-based learning and most learning skills of junior high school students in Social Studies. Specifically, collaboration ($r = 0.4279$, $p = 0.00136$), critical thinking skills ($r = 0.4435$, $p < 0.0001$), and creativity ($r = 0.4328$, $p = 0.00032$) demonstrate statistically significant positive correlations, indicating that game-based learning effectively enhances these skills.

However, communication skills ($r = 0.4221$, $p = 0.7211$) do not show a statistically significant relationship with game-based learning. Although the correlation coefficient suggests a possible relationship, the high p-value indicates that the result is not significant and should not be interpreted as evidence of a meaningful effect.

Surendeleg, et al. (2020) examined the effects of game-based learning on junior high school students, focusing on the development of collaboration, critical thinking, and creativity skills. The study found that game-based learning positively influenced students' collaboration and critical thinking abilities, which aligns with your analysis. In particular, collaborative games encouraged teamwork and problem-solving, while strategic games enhanced students' critical thinking skills. The study also reported improvements in creativity, as students engaged in game-based scenarios that required innovative solutions. However, similar to this finding, the study noted that while game-based learning significantly impacted cognitive and collaborative skills, it did not notably enhance communication skills, suggesting that other strategies may be more effective for improving communication. This research reinforces the value of game-based learning for fostering essential skills such as collaboration, critical thinking, and creativity in junior high school students.

Table 11. Significant relationship between the Immersive Learning and the learning skills of Junior High School Students

Learning Skills of the Junior High School Students in Social Studies	r-values	p-values	Decision and Interpretation
Collaboration	0.7321	<0.0001	Reject Ho, the result is significant at $\alpha = 0.05$
Critical Thinking Skills	0.7772	0.0045	Reject Ho, the result is significant at $\alpha = 0.05$
Communication	0.7065	0.0021	Reject Ho, the result is significant at $\alpha = 0.05$
Creativity	0.7322	<0.0001	Reject Ho, the result is significant at $\alpha = 0.05$

The analysis reveals a significant positive relationship between immersive learning and all learning skills of junior high school students in Social Studies. Collaboration ($r = 0.7321$, $p < 0.0001$), critical thinking skills ($r = 0.7772$, $p = 0.0045$), communication ($r = 0.7065$, $p = 0.0021$), and creativity ($r = 0.7322$, $p < 0.0001$) all exhibit strong correlations with immersive learning. These findings indicate that immersive learning is highly effective in enhancing various essential learning skills, fostering an engaging and impactful educational experience for students.

According to Cheng and Tsai (2020) the impact of immersive learning on various learning skills, including collaboration, critical thinking, communication, and creativity, aligning with the positive relationships found in your analysis. The study highlighted those immersive technologies, such as virtual reality (VR) and augmented reality (AR), significantly enhance students' engagement and cognitive skills by providing realistic, interactive learning experiences. They found that immersive learning environments foster collaboration among students, promote deeper critical thinking, enhance communication, and stimulate creativity by offering experiential learning opportunities that traditional methods cannot. These findings underscore the effectiveness of immersive learning in developing essential skills, particularly in Social Studies and other disciplines that require complex problem-solving and interaction.

Table 12. Significant relationship between the Active Learning and the learning skills of Junior High School Students

Learning Skills of the Junior High School Students in Social Studies	r-values	p-values	Decision and Interpretation
Collaboration	0.4542	<0.0001	Reject Ho, the result is significant at $\alpha = 0.05$
Critical Thinking Skills	0.4441	<0.0001	Reject Ho, the result is significant at $\alpha = 0.05$
Communication	0.4921	<0.0001	Reject Ho, the result is significant at $\alpha = 0.05$
Creativity	0.4327	<0.0001	Reject Ho, the result is significant at $\alpha = 0.05$

Table 12 demonstrates a significant positive relationship between active learning and the learning skills of junior high school students in Social Studies. Collaboration ($r = 0.4542$, $p < 0.0001$), critical thinking skills ($r = 0.4441$, $p < 0.0001$), communication ($r = 0.4921$, $p < 0.0001$), and creativity ($r = 0.4327$, $p < 0.0001$) all exhibit statistically significant correlations with active learning. These results suggest that active learning approaches effectively promote these critical skills, reinforcing their importance in fostering engagement, problem-solving, and innovation among students.

Table 13. Significant relationship between the Flipped Learning and the learning skills of Junior High School Students

Learning Skills of the Junior High School Students in Social Studies	r-values	p-values	Decision and Interpretation
Collaboration	0.6432	0.0021	Reject Ho, the result is significant at $\alpha = 0.05$
Critical Thinking Skills	0.6685	0.0110	Reject Ho, the result is significant at $\alpha = 0.05$
Communication	0.6853	0.001	Reject Ho, the result is significant at $\alpha = 0.05$
Creativity	0.6692	0.0231	Reject Ho, the result is significant at $\alpha = 0.05$

Table 13 shows a significant relationship between flipped learning and the learning skills of junior high school students in social studies. For collaboration, the computed r-value of 0.6432 and a p-value of 0.0021 indicate a significant correlation at the 0.05 level of significance, leading to the rejection of the null hypothesis.

Similarly, critical thinking skills have an r-value of 0.6685 and a p-value of 0.0110, communication skills show an r-value of 0.6853 with a p-value of 0.001, and creativity has an r-value of 0.6692 with a p-value of 0.0231. These results suggest that flipped learning significantly enhances various learning skills, including collaboration, critical thinking, communication, and creativity, among junior high school students.

Hao et al. (2024) explored the integration of project-based flipped classrooms in higher education, showing significant improvement in creativity. Students engaged in real-world problem-solving tasks, enhancing their innovative thinking and application skills.

The results in Table 13 show significant relationships between flipped learning and the development of various learning skills among junior high school students in social studies. The computed r-values for collaboration (0.6432), critical thinking (0.6685), communication (0.6853), and creativity (0.6692) all indicate moderate to strong positive correlations with flipped learning. The p-values for each of these skills (ranging from 0.001 to 0.0231) are all below the 0.05 significance level, leading to the rejection of the null hypothesis. These findings suggest that flipped learning has a significant positive impact on enhancing collaboration, critical thinking, communication, and creativity, highlighting its effectiveness in fostering key learning skills in students.

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions, and corresponding recommendations based on the result of the study.

Summary

This study focused on the effects of technological-based strategies on the level of learning skills of junior high school students in social studies. It involved the participation of 42 Social Studies Teachers from selected public school in Tanauan City.

The study was a descriptive correlational design, and the Technological-Based Strategies and Learning Skills were the main instruments for gathering data. Mean and Pearson Product Moment Correlation Coefficient was used in the statistical analysis of data.

Summary Of Findings

The salient findings of the study are summarized as follows:

1. Teachers perceive game-based learning, immersive learning, and active learning as highly effective, with flipped learning considered effective but less impactful.
2. Immersive and active learning showed the strongest positive outcomes in fostering engagement, retention, and collaboration.
3. Barriers include a lack of training, resources, and varying levels of teacher readiness. Communication skills were less significantly impacted by game-based strategies compared to other skills.

Conclusion

The study found a significant relationship between the technological-based strategies and learning skills of junior high school students. It concludes that technology-based strategies are effective in enhancing the learning skills of junior high school students in Social Studies, particularly in fostering collaboration, critical thinking, and creativity. Immersive and active learning proved to have the strongest impact, while game-based learning showed limitations in improving communication skills.

Teachers perceive these strategies as valuable tools for creating engaging and interactive learning environments, though challenges such as limited resources, insufficient training, and varying levels of readiness hinder full implementation.

However, communication skills do not show a significant relationship with game-based learning, suggesting that this teaching strategy may not strongly impact communication compared to other skills. Overall, game-based learning appears to be a valuable approach for developing critical learning competencies, excluding communication, in junior high school students.

The research underscores the importance of aligning technology with pedagogical and content goals, emphasizing that teacher professional development and institutional support are critical for maximizing the potential of these strategies. Ultimately, the findings highlight the transformative role of technology in education and encourage the continued exploration of innovative approaches to address challenges and enhance student outcomes.

Recommendations

In light of the findings and conclusion of the study, the following recommendations are offered:

1. As students engage with technology, they should focus on developing digital literacy skills. This includes being able to evaluate online sources, use educational platforms responsibly, and navigate digital environments effectively.
2. Teachers should explore and integrate a variety of technological tools and strategies into their teaching practices. By incorporating different technologies, teachers can cater to the diverse learning styles of their students and foster active participation.
3. Parents should stay in regular communication with teachers to understand how technology is being used in the classroom and how their child is benefiting from these strategies.
4. While technology offers numerous benefits, administrators should ensure that it is used in a balanced way that complements traditional teaching methods. Administrators can encourage teachers to combine the benefits of both methods to enhance student engagement and learning.
5. Future research could focus on the long-term impact of technology-based learning on students' academic performance and skill development.
6. And lastly, the recommended technological-based strategies are immersive and active learning because they make learning more dynamic, meaningful, and connected to real-world contexts. These strategies are particularly

beneficial in Social Studies, where understanding complex concepts and developing critical thinking and analytical skills are crucial for academic success.

BIBLIOGRAPHY

1. Abel, V., Guoyuan, S., & Tondeur, J.(2022). Teacher Perceptions about ICT Integration into Classroom Instruction.
2. Abenes, F, Caballes, D., & San Luis, K., (2020). Assessment of Students in Digital Game-Based Learning in Teaching Physics 7
3. Alazmi, H., Alemtairy, G. (2024). The effects of immersive virtual reality field trips upon student academic achievement, cognitive load, and multimodal presence in a social studies educational context. *Education and Information Technologies*
4. Albacete, V., & Banhaw, F. (2019). iTEACH (Integrating Technology in Teaching): Narratives of Teacher Educators
5. Al-bakar, F., Bruce, E., Davidson, P.M., & Wiseman, A. (2018). Using technology to break gender barriers: gender differences in teachers' information and communication technology use in Saudi Arabian classrooms
6. Alcaraz, R. B., & Reyes, P. M. (2015). Developing Critical Thinking Skills in Filipino College Students through Educational Technology. DOI: 10.1016/j.elecom.2015.04.005
7. Al-Fadhli, S. H., & Al-Harbi, K. M. (2015). "The impact of collaborative learning strategies and digital tools on students' collaboration skills." *Education and Information Technologies*, 20(2), 291-314. <https://doi.org/10.1007/s10639-013-9283-6>
8. Amabile, T. M., & Pratt, M. G. (2017). "The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning." *Academy of Management Perspectives*, 31(3), 189-208. <https://doi.org/10.5465/amp.2016.0048>
9. Amin, M. (2019). The role of educational technology in the ESL classroom. *Global Journal of Archaeology & Anthropology*, 11(1).
10. Anderson, R. E., & Becker, H. J. (2001). "Teacher use of computers and the internet in schools." Report on the National Survey of Technology in U.S. Schools. Teaching, Learning, and Computing, 1998: Report #3. https://www.iste.org/docs/pdfs/2001_teacher_use_of_computers_and_internet.pdf
11. Anderson, T., & Dron, J. (2012). Learning and teaching in the digital age: A study on e-learning in higher education. *Educational Media International*, 49(2), 145-155.
12. Aquino, J. P., & Cruz, M. A. (2023). "Virtual reality in education: Enhancing critical thinking skills of Filipino students in STEM subjects." *Journal of Philippine STEM Education*, 5(1), 44-59.
13. Aquino, R. L., & Tan, A. P. (2023). "Collaborative technologies for enhancing teamwork: The adoption of project management tools in Philippine workplaces." *Asia Pacific Business Journal*, 22(1), 77-92.
14. Asiksoy, G., and Özdamli, F. (2016). Flipped classroom adapted to the ARCS model of motivation and applied to a physics course. *Eurasia J. Math. Sci. Technol. Educ.* 12, 1589–1603. doi: 10.12973/eurasia.2016.1251a
15. Bagdasaryan, T., Kaneeva, A., & Minasasyan, S. (2021). Experience in using information technologies in teaching foreign literature
16. Banzon, R. M., & Salazar, A. B. (2019). Technology-Based Learning and its Impact on Academic Performance in Selected Higher Education Institutions in Luzon. *Asian Journal of Educational Technology*, 13(1), 45-58. DOI: 10.2139/ssrn.3463401
17. Barone, D., & Ottenbreit-Leftwich, A. T. (2013). "The role of technology in educational attainment: An analysis of ICT and student achievement." *Educational Technology Research and Development*, 61(6), 845-862.
18. Başar, T., & Şahin, L. (2022). Technology integration in teaching English as a foreign language: A content analysis study
19. Bates, R. A., & McMahon, B. J. (2016). Using technology to foster critical thinking in the classroom.
20. Bello, J. C., & Reyes, D. A. (2023). Creativity in the Workplace: How Technology Enhances the Creative Skills of Filipino Professionals. *Journal of Organizational Creativity*, 16(2), 88-100.

21. Buchanan, D. A., & Hall, M. (2020). Technology and Creativity: Exploring the Influence of Digital Tools on Creative Problem-Solving in Workplaces. *Creativity Research Journal*, 32(2), 134-144. DOI: 10.1080/10400419.2020.1748573
22. Castro, J. M., & Dela Cruz, E. S. (2017). "Integrating technology in the classroom: A study on how teachers' years of service influence technology integration." *Asian Journal of Education and Technology*, 12(2), 45-56.
23. Centeno, E., Lacsamana, M., Macale, A., & Quimbo, MA., (2021). Enhancing the performance of students in chemistry through flipped classroom with peer instruction teaching strategy
24. Centeno, E., Lacsamana, M., Macale, A., & Quimbo, MA., (2021). Enhancing the performance of students in chemistry through flipped classroom with peer instruction teaching strategy.
25. Chakraborty, K., Bhatia, S., Bhattacharyya, S., Platos, J., Bag, R., & Hassanien, A. E. (2020). Sentiment Analysis of COVID-19 tweets by Deep Learning Classifiers—A study to show how popularity is affecting accuracy in social media. *Applied Soft Computing*, 97, 106754.
26. Chen, C., Liu, J., & Shou, W. (2018). How competition in a game-based science learning environment influences students' learning achievement, flow experience, and learning behavioral patterns. *Journal of Educational Technology & Society*, 21(2), 164-176.
27. Cheng, K. H., & Tsai, C. C. (2020). Affordances of immersive technologies in education: A review of the literature on immersive learning environments. *Educational Technology Research and Development*, 68(5), 2643-2671.
28. Cheung, A. C. K., & Slavin, R. E. (2013). *Educational Psychology Review*, 25(2), 201-221
29. Coffey, H. (2017, July). Digital game-based learning.
30. Cruz, M. (2018). The Effectiveness of Flipped Classroom Environment in Improving Learners' Academic Achievement in Araling Panlipunan an Action Research
31. Cruz, P. M., & Tan, M. D. (2020). "Collaborative teaching through technology in K-12 schools: A Philippine perspective."
32. Cruz, P. M., & Tan, M. D. (2020). "Collaborative teaching through technology in K-12 schools: A Philippine perspective."
33. Dabbagh, N., & Kitsantas, A. (2021). Technology-enhanced collaborative learning: Implications for 21st-century education. *Educational Technology Research and Development*, 69(3), 623-641.
34. Dau, S., Davidsen, J., & Paulsen, P. (2024). Designing for collaborative learning in immersive virtual reality: a systematic literature review.
35. De Guzman, P. R., & Reyes, L. P. (2018). The Impact of E-Learning on Communication Skills Development in Philippine Higher Education. *Journal of Educational Technology in Higher Education*, 22(4), 135-147. DOI: 10.1016/j.jeducom.2018.03.001
36. De La Cruz, A. T., & Alvarado, L. S. (2019). "A comparative study of novice and experienced teachers' use of educational technology in the classroom." *International Journal of Educational Technology*, 23(2), 89-105.
37. De La Cruz, M. A., & Santos, G. B. (2015). "The impact of technology on enhancing critical thinking skills in Philippine universities." *Philippine Journal of Higher Education Research*, 15(3), 45-57.
38. Dede, C., & Richards, J. (2020). Exploring the Impact of Digital Tools on Collaborative Skills in Education.
39. Dela Cruz, E. A., & Solis, M. T. (2017). "Using online collaborative tools for enhancing communication skills among Filipino learners."
40. Dela Cruz, L. M., & Reyes, M. P. (2022). The Role of Digital Literacy in Enhancing Critical Thinking Skills Among Filipino Students. DOI: 10.1016/j.jdr.2022.02.005
41. Dela Cruz, N. A., & Villanueva, R. A. (2018). "Enhancing creativity through mobile apps: A study on Filipino students."
42. Delos Santos, M. A., & Cruz, J. R. (2023). The Digital Skills Gap: Exploring the Role of Years of Service in Technology Competency Among Filipino Educators. DOI: 10.1016/j.ijedt.2023.02.002
43. Delos Santos, M. C., & Tan, G. A. (2021). Mobile Learning Apps for Creativity Enhancement Among Filipino College Students: A Case Study. *International Journal of Educational Technology*, 22(4), 105-116. DOI: 10.1016/j.jeducom.2021.07.005
44. Delos Santos, M. L., & Cruz, C. T. (2019). Exploring the Use of E-Learning Tools to Develop Critical Thinking in Philippine Universities. *Philippine Journal of Educational Technology*, 19(2), 112-124.

45. DepEdTambayan.https://depedtambayan.net/flipped-classroom-model-student-learning/#google_vignette
46. Derasin, LM, Medico, J., & Nepangue, D. (2023). The Impact of Digital Gamification And Traditional Based Learning on Students' Mathematics Achievement: Evidence from the Philippines
47. Dizon, L. R., & Villanueva, J. S. (2012). "The role of social media in enhancing creative expression among Filipino youth."
48. Dooly, M., & Sadler, M. (2016). "Technology-enhanced learning in the social sciences: A case study of junior high school students." *Computers & Education*, 94, 102-113.
49. Duan, Y., & Zhang, D. (2021). The Influence of Mobile Technologies on Business Communication Skills in College Students. *Computers in Human Behavior*, 115, 106588.
50. Dumford, A. D., & Miller, A. L. (2015). Online Learning in Higher Education: Exploring Advantages and Disadvantages for Engagement and Learning. DOI: 10.1007/s12528-014-9073-1
51. Elaish, M., Ghani, N., Shuib, L., & Al-Haiqi, A. (2019). Development of a mobile game application to boost students' motivation in learning english vocabulary. *IEEE Access*, 7, 13326-13337.
52. Eslit, E. (2023). Concept paper on Technology Integration and English Language Teaching in the Philippines context
53. Figueroa, R., & Hawkinson, E. (2020). Potentials of Immersive Technologies shared during 3rd Edu-Hack Podcast
54. Fishman, B. J., Penuel, W. R., Allen, A. R., Cheng, B., & Sabelli, N. (2013). "Design-Based Implementation Research: An Emerging Model for Transforming the Role of Research in Education."
55. Flores, N. R., & Rojas, T. D. (2019). "Technology tools in distance learning: Enhancing communication skills of Filipino students."
56. Garcia, E. P., & Cruz, A. F. (2019). Critical Thinking in the Digital Age: A Study on the Use of Technology in Teaching Critical Thinking Skills to Filipino Students. DOI: 10.1016/j.edurev.2019.02.001
57. Garcia, M., & Mangaba, J. (2017). Delivering Effective Digital Game-Based Learning: A Comparative Study Between Computer and Mobile as the Learning Framework for Preschoolers
58. Garcia, R. T., & Lopez, M. A. (2016). Technology Use and Adaptation Among Teachers with Different Years of Service in Philippine Secondary Schools. DOI: 10.1016/j.ajed.2016.02.004
59. Garcia, S. L., & Hernandez, L. A. (2017). Technology and Collaborative Work: An Investigation on the Use of Virtual Tools Among Filipino Office Employees. *Philippine Journal of Business and Management*, 12(3), 76-88.
60. Garcia, T. S., & Tan, R. M. (2015). Enhancing Communication Skills through Technology-Based Learning in the Philippines. *Asian Journal of Educational Technology*, 9(3), 67-78. DOI: 10.1016/j.ajet.2015.07.006
61. Garcia, V. S., & Dizon, S. M. (2016). "Professional development for teachers in the digital age: The role of technology in enhancing instructional effectiveness." *Philippine Journal of Educational Management*, 28(2), 19-34.
62. Gargano, T., & Throop, J. (2017). Logging on: Using online learning to support the academic nomad. *Journal of International Students*, 7(3), 918-924.
63. Garrison, D. R., & Akyol, Z. (2015). "The community of inquiry framework: A transformative approach to collaborative learning." *Journal of Asynchronous Learning Networks*, 19(1), 47-61.
64. Gee, J. P. (2021). "Games and learning: The role of technology in developing creative skills in education." *Computers & Education*, 149, 103834. <https://doi.org/10.1016/j.compedu.2020.103834>
65. Gonsalves, C. A., & McAuliffe, J. (2023). Artificial Intelligence and Its Role in Creativity Development in Education and the Arts. *Creativity Studies*, 16(3), 250-265. DOI: 10.3846/cs.2023.1956
66. Gonzales, J. P., & De Guzman, R. F. (2019). The Effect of Technology-Based Learning Environments on Creativity Among Filipino High School Students. *Asian Journal of Educational Technology*, 19(4), 112-125. DOI: 10.1016/j.ajet.2019.06.006
67. Gonzales, R. T., & Ramos, C. M. (2023). Communication Skills in the Age of Technology: A Study on the Impact of Digital Platforms in Enhancing Communication in the Filipino Workplace. DOI: 10.1080/2154785X.2023.1183079
68. Gorib, M. A., & Al-Daihani, S. M. (2023). The Effect of Artificial Intelligence on Communication Skills: A Study in Professional Development. DOI: 10.1177/00472395211068422

69. Güler, M., Kokoç, M., & ÖnderBütüner, S. (2023). Does a flipped classroom model work in mathematics education? A meta-analysis. *Education and Information Technologies*, 28(1), 57–79.
70. Hämäläinen, R., & Vähäsantanen, K. (2019). "Digital tools for creative problem-solving in education: The impact of collaborative technology on student creativity." *Computers & Education*, 135, 15-26.
71. Hamilton, D., Mckechnie, J., & Wilson, C. (2020). Immersive virtual reality as a pedagogical tool in education: a systematic literature review of quantitative learning outcomes and experimental design. *Journal of Computers in Education*.
72. Hao, L., Tian, K., Salleh, U. K. M., Chin, H. L., Ge, S., & Cheng, X. (2024). The effect of project-based learning and project-based flipped classroom on critical thinking and creativity for business English courses at higher vocational colleges. *Malaysian Journal of Learning & Instruction*, 21(1), 159–190.
73. Hartley, R. E., & Olson, N. L. (2022). Critical thinking, technology, and the role of artificial intelligence in education.
74. Hein, R. M., Wienrich, C. & Latoschik, M. E. (2021) A systematic review of foreign language learning with immersive technologies (2001–2020). *AIMS Electronics and Electrical Engineering*, 5(2): 117–145
75. Hernandez, E. F., & Garcia, V. S. (2020). "Online learning platforms and their effect on student success in the Philippines." *Philippine Educational Management Journal*, 19(2), 1-18.
76. Hernandez, V. T., & Medina, A. R. (2017). "Exploring how learning management systems foster critical thinking skills in Philippine schools." *Asia-Pacific Journal of Educational Technology*, 10(4), 56-72.
77. Hsu, L. (2015). "The development of critical thinking and problem-solving skills through technology-based instruction." *Educational Technology & Society*, 18(4), 153-164. <https://www.jstor.org/stable/23612899>
78. Huang, A. Y., Lu, O. H., & Yang, S. J. (2023). Effects of artificial Intelligence—Enabled personalized recommendations on learners’ learning engagement, motivation, and outcomes in a flipped classroom. *Computers and Education*, 194, 104684.
79. Hwang, G. J., Wu, P. H., Chen, C. C., & Tu, N. T. (2016). Effects of an augmented reality-based, educational game on students’ learning achievements and attitudes in real-world observations. *Interactive Learning Environments*, 24(8), 1895-1906.
80. Inan, F. A., & Lowther, D. L. (2010). "Factors affecting teachers' use of technology: A path model." *Educational Technology Research and Development*, 58(2), 137-154. <https://doi.org/10.1007/s11423-009-9132-y>
81. Jimenez, E. D., & Lumahan, J. A. (2023). The Digital Divide and Educational Attainment: A Study of Technology Access in Philippine Rural Schools. *International Journal of Educational Development*, 56, 107-118. [DOI: 10.1016/j.ijedudev.2023.107118] (<https://www.journals.elsevier.com/international>)
82. Jones, C., & Johnson, M. (2018). Teachers' attitudes towards technology integration and the impact of teaching experience.
83. Juralovich, M. (2021). Changes in the Content of the Technology Subject and Students’ Learning Achievements
84. Kaufman, J. C., & Beghetto, R. A. (2019). Creativity in the Age of Technology: Insights and Implications for Educators. *Learning, Media, and Technology*, 44(1), 85-95. DOI: 10.1080/17439884.2018.1554255
85. Kayworth, T. R., & Leidner, D. E. (2015). "Communication in virtual teams: The role of technology and team collaboration." *Information Systems Journal*, 25(3), 215-245. <https://doi.org/10.1111/isj.12045>
86. Kim, C., & Kwon, Y. (2013). "The relationship between teachers’ beliefs and their technology integration practices in the classroom." *Computers & Education*, 63, 141-157. <https://doi.org/10.1016/j.compedu.2013.01.008>
87. Kim, C., & Seo, Y. (2017). "The effects of technology-mediated collaborative learning on students’ collaborative skills and learning outcomes." *Journal of Educational Technology & Society*, 20(1), 75-86. <https://www.jstor.org/stable/jeductechsoci.20.1.75>
88. Koh, J. H. L., & Chai, C. S. (2023). Examining the relationship between teachers' experience and technology-enhanced learning in classrooms. *Educational Media International*, 60(2), 45-61.
89. Kucher, T. (2021). Principles and best practices of designing digital game-based learning environments. *International Journal of Technology in Education and Science (IJTES)*, 5(2), 213-223.
90. Kuo, Y. F., & Liao, P. Y. (2020). Integrating Creativity and Technology in STEM Education: Insights from a Case Study. DOI: 10.1177/0735633119860960

91. Laabadi, H. (2016). The Effect of Age on English Professors' Integration of the New Technologies in Teaching
92. Lai, C., & Bower, M. (2022). Developing collaborative competence in students through technology-enhanced learning environments. *British Journal of Educational Technology*, 53(1), 105-118.
93. Larrabee, D. (2019). "Critical thinking and technology: Bridging the gap between theory and practice." *Journal of Educational Technology Development and Exchange (JETDE)*, 12(1), 32-46. <https://doi.org/10.18785/jetde.1201.04>
94. Lee, K., & Chen, D. (2023). "Critical thinking in the digital age: A meta-analysis of educational technology interventions." *Educational Psychology Review*, 35(1), 123-145.
95. Lee, K., & Lee, J. (2021). "Digital communication and English proficiency: The role of technology in developing communication skills in ESL education." *Language Learning & Technology*, 25(1), 68-85.
96. Lee, S. W., & Park J. C. (2022). Collaborative technology in the workplace: Enhancing team skills and productivity.
97. Lin, J., & Wang, X. (2022). Creativity and Technology Integration in the Arts: A Case Study of Digital Art Creation Tools. *Arts Education Policy Review*, 123(1), 43-51.
98. Liu, M., & Chen, H. (2017). "Leveraging technology to develop communication skills: An examination of digital tools in higher education." *Journal of Educational Technology Systems*, 46(2), 205-227.
99. Liu, Y., & Cavanaugh, C. (2014). Mobile learning and its effects on students' academic achievement in higher education: A review of literature.
100. Liu, Z. Y., Shaikh, Z., & Gazizova, F. (2020). Using the concept of game-based learning in education. *International Journal of Emerging Technologies in Learning (iJET)*, 15(14), 53-64.
101. Lopez, M. A., & Medina, R. P. (2017). "Collaboration through technology: The role of collaborative learning platforms in the professional development of teachers in the Philippines." *Philippine Journal of Teacher Education*, 13(3), 72-84.
102. Lopez, P. A., & Espiritu, C. M. (2023). Collaborative Skills in a Digital World: The Role of Technology in Team-Based Learning in Philippine Higher Education. DOI: 10.1186/s41239-023-00336-z
103. Lopez, R. A., & Herrera, P. S. (2018). "Technology training for teachers: The relationship between years of service and willingness to integrate technology into teaching." *Philippine Journal of Teacher Education*, 15(3), 102-113.
104. Magsino, S. M., & Gumba, V. S. (2020). "Years of service and technology readiness among Filipino teachers: Implications for professional development." *Asia-Pacific Journal of Teacher Education*, 28(4), 55-71.
105. Malto, G. A. O., Dalida, C. S., & Lagunzad, C. G. B. (2018). Flipped classroom approach in teaching biology: assessing students' academic achievement and attitude towards Biology. *KnE Social Sciences*, 3(6), 540.
106. Manca, S., & Ranieri, M. (2018). Fostering collaborative skills with technology in the classroom.
107. Manlapig, M. G., & Tan, M. R. (2017). "ICT integration in Filipino classrooms: A study of its effects on educational outcomes and student performance." *Philippine Journal of Education*, 96(2), 143-157.
108. Martínez, L., & Martín, E. (2020). "Collaborative learning and teamwork skills development in virtual environments." *Journal of Educational Computing Research*, 57(8), 2127-2145. <https://doi.org/10.1177/0735633119847327>
109. McKeown, J., & Van Lier, L. (2020). "The use of e-learning platforms to enhance communication skills in remote learning settings." *Computers & Education*, 149, 103799.
110. Mellati, M., Zangoei, A., and Khademi, M. (2015b). Technology integration: EFL learners' level of anxiety and their performance in writing tests. *Int. J. Social Sci. Educ.* 5, 240-252.
111. Mendoza, D. M., & Garcia, R. S. (2022). Exploring the Impact of Collaborative Online Tools on Student Group Work Performance in the Philippines. DOI: 10.1016/j.ajet.2022.06.001
112. Mikropoulos, T. A., & Natsis, A. (2018). "The role of virtual reality in education: A review of the literature." *Computers & Education*, 120, 1-11.
113. Monteiro, A.R., & Leite, C. (2021). Digital literacies in higher education: skills, uses,
114. Moore, A. F., & Fisher, J. G. (2023). Technology-driven critical thinking in STEM education.
115. Morgan, R. S., & Ríos, P. T. (2019). Critical thinking and technology: An educational perspective. *Computers in Human Behavior*, 96, 105-115.

116. Mouza, C. (2013). Learning with technology: The impact of technology integration on teachers' professional development.
117. Murray, M. C., & Pérez, J. (2014). Unraveling the digital literacy paradox: How higher education fails at the fourth literacy. *Issues in Informing Science and Information Technology*, 11, 85-100.
118. Navarro, A. R., & Dizon, C. E. (2015). "The role of technology in enhancing student achievement in public schools: Evidence from the Philippines." *Asia Pacific Journal of Education*, 35(1), 75-88.
119. Nicol, D. J., & Macfarlane-Dick, D. (2019). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, 44(2), 292-303.
120. O'Flaherty, J., Phillips, C., Karanicolas, S., Snelling, C., and Winning, T. (2015). Corrigendum to "the use of flipped classrooms in higher education: a scoping review". *Internet High. Educ.* 27:90.
121. Okojie, M., Olinzock, A., & Okojie-Boulder, T. (2006). "The effects of interactive multimedia on the learning styles of students in social studies education." *International Journal of Educational Research*, 45(3), 130-139.
122. Ostonaqulov Dilshod Ismatilla o'g'li. (2024). The Impact Of Educational Attainment On Quality Of Life In Europe, Vol. 3 No. 29 (2024): Intellectual Education Technological Solutions And Innovative Digital Tools
123. Pabico, J., Rivera, M., & Valdez, N. (2015). Experiences in Implementing an ICT-Augmented Reality as an Immersive Learning System for a Philippine HEI
124. Pho, A., & Dinscore, A. (2015). Game-based learning.
125. Ponce, V. T., & Tagalog, E. S. (2019). Exploring the Digital Divide: The Role of Years of Service in the Adoption of Mobile Technologies in Philippine Government Offices. *Journal of Public Administration and Technology*, 14(4), 78-91. DOI: 10.1111/jpad.12345
126. Rahimi, M., & A. M. Bakar, K. (2018). "The role of online collaboration tools in enhancing communication skills of students: A longitudinal study." *Journal of Educational Computing Research*, 56(3), 428-448.
127. Ramos, C. F., & Lim, M. V. (2020). The Use of E-Learning Tools and its Correlation with Academic Performance of College Students in Manila.
128. Ramos, M. J., & Mendoza, A. T. (2021). "Creativity and technology: A study of how Filipino college students use digital tools for creative expression." *Journal of Philippine Higher Education*, 20(3), 105-118.
129. Ramos, R. A., & Mercado, R. V. (2020). "Technological tools and their effect on educational attainment in public high schools in Metro Manila." *Philippine Social Science Review*, 71(2), 133-150.
130. Ramos, T. F., & Reyes, N. P. (2021). "Game-based learning and critical thinking: A study of its effectiveness in Philippine classrooms."
131. Resta, P., & Laferrière, T. (2018). Digital Communication and Collaborative Skills in Education: The Role of Online Platforms. *Educational Media International*, 55(3), 208-219.
132. Reyes, L. P., & Lazo, A. F. (2020). Technology and Collaboration: How Filipino Teachers Use Digital Tools for Professional Development and Collaboration. DOI: 10.1016/j.jeer.2020.01.005
133. Reyes, L. T., & Tan, F. V. (2016). "Digital tools in the classroom: Fostering critical thinking in the Philippines." *Philippine Journal of Educational Technology*, 18(2), 38-52.
134. Reyes, T. P., & Garcia, M. L. (2021). "Harnessing social media for collaborative learning in Philippine schools."
135. Rodriguez, L. M., & Cruz, J. F. (2023). "Enhancing communication skills in the workplace: The role of technology for Filipino professionals." *Philippine Business Communication Review*, 22(1), 67-79.
136. Role of Online Platforms. *Educational Media International*, 55(3), 208-219.
137. Rospigliosi, P., & Yip, J. (2020). Digital literacy and educational attainment in online learning environments. *Journal of Educational Computing Research*, 58(7), 1202-1225.
138. Salazar, E. P., & Mendoza, F. J. (2016). The Role of Technology in Enhancing Critical Thinking Skills of Filipino High School Students. DOI: 10.1080/02219457.2016.117348
139. Santos, M. A., & Velez, C. A. (2021). "Improving communication skills in college students through video conferencing tools: A case study in Philippine universities." *Journal of Philippine Higher Education Communication*, 13(2), 50-63.
140. Santos, M. C., & Pineda, A. T. (2016). The Influence of Information Technology on the Academic Performance of Senior High School Students in Metro Manila. DOI: 10.1016/j.jaccedu.2015.07.004

141. Santos, M. J., & Gomez, A. B. (2015). "Collaborative learning in Philippine public schools: Integrating technology for enhanced student collaboration." *Philippine Journal of Education and Technology*,
142. Santos, R. C., & Dela Cruz, T. C. (2022). Enhancing Collaborative Skills through Digital Platforms: A Case Study of Filipino High School Students. DOI: 10.2139/ssrn.3564517
143. Sawyer, R. K. (2020). "The creative classroom: Technology, collaboration, and the future of education." *Educational Psychology Review*, 32(4), 789-806.
144. Scavarelli A, Arya A, Teather RJ (2021) Virtual reality and augmented reality in social learning spaces: a literature review. *Virtual Reality* 25(1):257–277.
145. Schindler, L. A., Burkholder, G. J., Morad, O. A., & Marsh, C. (2017). Computer-based technology and student engagement: a critical review of the literature. *International Journal of Educational Technology in Higher Education*, 14(1), 25.
146. Serrano, M. P., & Santos, N. C. (2020). Technology Integration in Learning and Its Impact on Educational Attainment in Rural Schools in the Philippines.
147. Sevillano-Monje, V., Martín-Gutiérrez, Á., & Hervás-Gómez, C. (2022). The flipped classroom and the development of competences: A teaching innovation experience in higher education. *Education Sciences*, 12(4), 248.
148. Sezer, B. (2020). Active learning and teaching strategies: Enhancing communication and critical thinking in the classroom. *Education and Information Technologies*, 25(2), 1015-1026.
149. Shinas, V., & Eteokleous, N. (2020). Examining the role of teacher experience in the use of educational technology in secondary education. *Computers in the Schools*, 37(2), 123-140.
150. Sison, M. J., & Mijares, N. T. (2021). "Blended learning as an innovative approach to improve educational outcomes in Philippine universities." *Asian Education Studies Journal*, 11(3), 49-62.
151. Su, C., Fan, K., & Xiao, P. (2015). The Effects of Learning Styles and Meaningful Learning on the Learning Achievement of Gamification Health Education Curriculum
152. Surendeleg, G., Park, J. H., & Choi, K. (2020). A study on the effectiveness of game-based learning for enhancing student collaboration, creativity, and critical thinking skills in junior high school. *Education and Information Technologies*, 25(3), 2563-2580.
153. Swan, K. (2021). The Role of Digital Technologies in Developing Communication Skills in Online Education.
154. Tamim, R. M., Bernard, R. M., Borokhovski, E., Abrami, P. C., & Schmid, R. F. (2012). The impact of educational technology on academic achievement in K-12 schools: A meta-analysis. *Computers & Education*, 58(4), 1051-1061.
155. Tan, L., & Newell, J. (2020). "Bridging the digital divide: How technology fosters creativity in arts education." *Arts and Humanities in Higher Education*, 19(3), 333-347.
156. Tan, M. G., & Solis, A. L. (2010). Digital Creativity in Philippine Classrooms: A Study on the Integration of Technology in Arts Education. DOI: 10.2139/ssrn.134234
157. Tan, S. M., & Villa, C. P. (2020). "Developing communication skills through e-portfolios in Philippine teacher education programs." *Teaching in the Philippines context*
158. Thomas, M., & O'Bannon, B. (2007). "Using technology to support social studies instruction." *Social Education*, 71(2), 97-102.
159. Tinambunan, SR., & Orongan, MJ., (2023). Game-based learning on students' motivation and academic achievement in science 9.
160. Tondeur, J., van Braak, J., & Ertmer, P. A. (2015). Examining the influence of teachers' experience on technology integration in education: A meta-analysis.
161. Tondeur, J., van Braak, J., & Valcke, M. (2017). Preparing pre-service teachers to integrate technology in education: A synthesis of qualitative evidence. *Computers & Education*.
162. Tua, R. S., & Maranan, N. F. (2020). The Relationship Between Years of Service and the Adoption of Online Learning Technologies by Teachers in Philippine Colleges. DOI: 10.1016/j.jeer.2020.01.002
163. Ugali, M. (2023). Integration of Technology in Educational Instruction and Students' Interest in Learning
164. Unesco, (2023). <https://unesdoc.unesco.org/ark:/48223/pf0000387743>
165. Valdez, P. M., & Varela, F. T. (2019). The Role of Mobile Communication in Enhancing Interpersonal Communication Skills Among Filipino Teens.

166. Villanueva, J. M., & Garcia, S. P. (2023). "Creative problem-solving through technology: A study of technology use in Philippine workplaces." *Philippine Business and Innovation Review*, 21(4), 130-145.
167. Vongkulluksn, V., & Daniel, J. A. (2020). The Impact of Technology Integration on Critical Thinking and Problem-Solving Skills in Higher Education. *Educational Media International*, 57(2), 162-179.
168. Voogt, J., Fisser, P., Tondeur, J., & van Braak, J. (2013). "Technological pedagogical content knowledge – A review of the literature." *Journal of Computer Assisted Learning*, 29(2), 109-121. <https://doi.org/10.1111/j.1365-2729.2012.00487.x>
169. Yearbook of the National Society for the Study of Education, 112(2), 136-156. <https://doi.org/10.1111/ssse.12023>
170. Yuen, A. H., & Ma, W. W. (2013). The impact of e-learning on student achievement in post-secondary education: A systematic review.
171. Zhang, W. (2022). The Role of Technology-Based Education and Teacher Professional Development in English as a Foreign Language Classes
172. Zou, D., Xie, H., Wang, F. L., & Kwan, R. (2020). Flipped learning with Wikipedia in higher education. *Studies in Higher Education*, 45(5), 1026–1045.

APPENDIX

RESEARCH INSTRUMENT

Respondents Details:

Name (Optional): _____

Direction: Based on your perception, kindly rate the following by putting a check mark (✓) on the box in each statement that corresponds to your answer. Please indicate degree of agreement (using a score ranging from 1-4) to the following scale:

Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
-----------------------	--------------	-----------	--------------------

TECHNOLOGICAL-BASED STRATEGY

GAME-BASED LEARNING is an active learning technique that uses games to improve student learning.	(1)	(2)	(3)	(4)
As a teacher... how effective do you find the use of game-based learning in teaching social studies on junior high school students.				
Using games during discussion engages my students effectively.				
Game-based learning improves my student motivation.				
I observed that my students improved retention of material through game-based learning.				
I am confident on implementing game-based learning strategies in my teaching.				
Game-based learning encourages healthy competition among my students.				
Using game-based learning can address diverse learning styles of my students.				
It fosters collaboration among my students.				
I receive positive feedback from students regarding game-based learning.				
Jeopardy is an effective way to teach complex concepts.				
Role playing can be integrated with collaboration among my students.				

IMMERSIVE LEARNING is a teaching method that involves fully immersing students in a subject or experience in order to facilitate more effective learning.	(1)	(2)	(3)	(4)
As a teacher... how effective do you find the use of immersive learning in teaching social studies on junior high school students.				
It enhances my student's engagement.				
Immersive learning helps students understand real-world applications.				

I have seen improved my student's performance.				
I receive feedback from students that they enjoy immersive learning.				
Immersive learning encourages students to take ownership of their learning.				
I have access to technologies that support immersive learning.				
Simulating real-world scenarios can be used across various subjects.				
I have used virtual reality in my teaching.				
Immersive learning promotes student collaboration.				
I think students retain information better through immersive learning.				

ACTIVE LEARNING is any educational activity where students engage in the process of learning.	(1)	(2)	(3)	(4)
As a teacher... how effective do you find the use of game-based learning in teaching social studies on junior high school students.				
Active learning increases my student participation.				
I regularly incorporate active learning strategies in my lessons.				
I have observed students becoming more independent through active learning.				
Active learning allows for more student feedback in real-time.				
I believe active learning is beneficial for diverse student needs.				
I have seen an improvement in my student grades due to active learning.				
Active learning can be integrated with technology.				
I have observed that students enjoy active learning activities.				
I believe active learning enhances student retention of information.				
I think active learning creates a more dynamic classroom environment.				

FLIPPED LEARNING is an educational approach where the traditional model of instruction is reversed; instead of learning new content during class and doing homework afterward, students first learn new material on their own, often through videos, readings, or online resources.	(1)	(2)	(3)	(4)
As a teacher... how effective do you find the use of game-based learning in teaching social studies on junior high school students.				
Flipped learning encourages students to engage with content outside of class.				

I have seen improved understanding of concepts through flipped learning.				
I receive positive feedback from students regarding flipped learning.				
I feel that flipped learning helps to maximize class time.				
I believe flipped learning promotes collaborative learning.				
Flipped learning is suitable for all student learning levels.				
I think flipped learning enhances critical thinking skills.				
I believe students are more engaged in a flipped classroom environment.				
I find that flipped learning improves communication skills among students.				
I regularly assess student performance in a flipped learning model.				

LEARNING SKILLS

COLLABORATION it refers to the ability to work effectively with others toward a common goal.	(1)	(2)	(3)	(4)
As a teacher... how students use their abilities to collaborate in social studies.				
My students work effectively in groups to complete tasks.				
Students are willing to share ideas with peers during projects.				
Collaborative activities lead to deeper understanding of the material.				
Students take on various roles during group activities.				
I regularly assess students' collaborative skills.				
I observe improved communication among students during collaborative tasks.				
I believe collaboration helps build social skills in students.				
I notice increased engagement in students during group work.				
I feel that my students learn more effectively when collaborating.				
Collaboration is a key focus in my teaching approach.				

CRITICAL THINKING SKILLS is the ability to think clearly and rationally, understanding the logical connection between ideas.	(1)	(2)	(3)	(4)
As a teacher... how students use their critical thinking skills in social studies.				
My students demonstrate the ability to analyze information critically.				
I provide opportunities for students to solve real-world problems.				

I observe students making connections between concepts.				
I regularly include tasks that require critical analysis.				
I believe critical thinking is essential for success in my subject.				
I see improvements in students' reasoning skills over time.				
I regularly assess students' critical thinking abilities.				
My students ask insightful questions about the material.				
I believe critical thinking enhances student engagement.				
Students are able to defend their viewpoints with evidence.				

COMMUNICATION it refers to the ability to convey or exchange information, ideas, and feelings effectively with others.	(1)	(2)	(3)	(4)
As a teacher... how students use their communication skills in social studies.				
My students express their ideas clearly during discussions.				
I provide opportunities for students to present their work.				
Students are comfortable asking questions in class.				
I regularly assess students' communication skills.				
I believe communication skills are essential for success in school.				
I encourage students to engage in debates and discussions.				
I provide constructive feedback on students' communication skills.				
I use role-playing to enhance communication skills.				
I believe that effective communication fosters collaboration.				
Communication skills are a key focus in my teaching.				

CREATIVITY refers to the capacity to come up with new ideas, solutions, or methods for issues. These abilities involve using creative thinking, creativeness, and unconventional thinking to opportunities or obstacles in a variety of disciplines.	(1)	(2)	(3)	(4)
As a teacher... how students use their creativity in social studies.				
I encourage students to think outside the box during projects.				
My students demonstrate originality in their work.				
I provide opportunities for students to explore their interests creatively.				

I observe a variety of creative approaches to assignments.				
I provide constructive feedback to enhance students' creativity.				
I believe that creativity is essential for problem-solving.				
I incorporate arts and creative activities into my teaching.				
My students enjoy participating in creative tasks.				
I encourage students to express their ideas visually and verbally.				
I believe creativity can be developed through practice and feedback.				