



Enhancing Students' Animation Production Skills Through Flipaclip Application

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Abstract: While animation production is an essential competency in Arts education, students often find the process of traditional methods time consuming and technically challenging in achieving smooth movement and precision. This study explored how the use of the FlipaClip application could improve the creativity, technical proficiency, and performance of Grade 10 Arts students in animation production. The main objective was to determine whether students could produce better outputs with the help and guidance provided by the digital features of the FlipaClip application. The study utilized a quasi-experimental research design, particularly a single-group pretest-posttest approach. Students were given the requirements and themes for creating animation. In the pretest, they were asked to create an animation using the traditional manual flipbook method on paper but had no formal instruction or prior experience in creating one. As a result, their manual outputs were generally lacking in smoothness, timing, and technical quality. Their outputs were evaluated using a scoring rubric focused on technical execution, accuracy, visual clarity, and speed. The intervention involved introducing the FlipaClip application, which guided students through the animation process features like frame-by-frame editing, onion skinning, and time management. In the post test, students used the application to recreate the same animation. The results showed that with the help and guidance of FlipaClip, students produced smoother, visually engaging, and technically sound outputs. Their average scores improved from "Very Satisfactory" in the pretest to "Excellent" in the post test. There was significant difference in the performance of students before and after using the FlipaClip application. The mean score after the use of the intervention was higher than the mean score before the intervention, with a Cohen's d effect size demonstrating an exceptionally strong positive impact. The findings demonstrate that the application not only supported the students in understanding animation principles but also increased their confidence and ability to meet creative and technical standards. Additionally, the low standard deviation in the post test scores indicates a consistent level of improvement across the participants, demonstrating that FlipaClip helped students achieve more creative and higher quality outputs. Therefore, this study recommends the integration of FlipaClip into the Arts curriculum, as it effectively assists and develop students' capabilities in producing high-quality outputs through a more guided and engaging process.

Keywords: flipaClip, animation production skills, digital arts, creativity, technical proficiency, performance

I. INTRODUCTION

Background of the Study

Animation has long been a powerful form of storytelling and creative expression, extending beyond entertainment into education where it supports creative learning and skill development. In recent years, educators worldwide have increasingly used digital tools and mobile applications to enhance creativity, collaboration, and technical skills among students, particularly in Arts education (UNESCO, 2021). Traditionally, animation was created through frame-by-frame drawing on paper or plastic sheets, a process that requires patience, precision, and strong manual skill to produce smooth and believable motion (Thompson, 2018).

The integration of technology in education has become essential in developing students' 21st-century skills, including creativity, critical thinking, and digital literacy. In the Philippines, this integration has encouraged more innovative and learner-centered teaching approaches (Morales et al., 2021). However, many schools still face challenges such as limited access to digital tools, insufficient instructional time, and limited exposure to industry-relevant applications. With the continuous advancement of digital technology, mobile applications have emerged as accessible and efficient tools that support creative expression and learning, making animation more achievable for students (Kaufman, 2016).

Among these digital tools, FlipaClip has become a widely used mobile application for creating frame-by-frame animations on smartphones and tablets. It offers features such as onion skinning, layering, and audio synchronization, which replicate functions found in professional animation software while remaining simple and beginner-friendly. These features allow users to better visualize motion, organize scenes, and integrate sound, helping them develop a stronger understanding of animation principles within a digital environment.

While traditional flipbook techniques remain useful for introducing basic animation concepts, they are often time-consuming, labor-intensive, and less engaging for students (Chen & Lee, 2019). These limitations may affect motivation and restrict the quality of student outputs. In response, the researcher used FlipaClip as an intervention strategy to enhance students' technical proficiency and creative expression in animation regardless of their prior experience or access to advanced tools. The study explored how FlipaClip can support improved skill development, creativity, and engagement in Arts education through more accessible and practical digital learning tools.

Objectives of the Study

This study aimed to determine the animation production skills of Junior High School Grade 10 students at Filamer Christian University in making animations using the FlipaClip application.

Specifically, it sought to answer the following objectives:

1. determine the animation production skills of Grade 10 students in making animations before using the FlipaClip application.
2. determine the animation production skills of Grade 10 in making animations after using the FlipaClip application.
3. determine if there is a significant difference in the animation production skills of Grade 10 students in making animations before and after using the FlipaClip application.
4. determine the effect size of the FlipaClip application on the animation production skills of Grade 10 students.

II. METHODOLOGY

Methods of Research

This research employed a **quasi-experimental, single-group pretest-posttest design**. Unlike true experimental designs, this approach involved one group of participants measured before and after an intervention, allowing the researcher to observe changes attributed to the treatment (FlipaClip usage) while controlling for subject-specific variables.

Locale and Respondents of the Study

The study included **30 Grade 10 Junior High School students** enrolled in the Arts subject at Filamer Christian University for the Academic Year 2025–2026. Participants were selected based on their enrollment in the course and their basic exposure to animation concepts, though they had limited experience with digital tools.

Research Instrument

The data for this study were gathered through a structured, performance-based assessment designed to evaluate students' animation production skills. The researcher administered both a pretest and a posttest using the same animation task, where students were asked to create a simple self-introduction or dance animation. The pretest was conducted before the FlipaClip intervention, while the posttest was administered after guided instruction and practice using the application. During the intervention, students participated in organized class discussions and hands-on sessions using FlipaClip to develop their skills in frame sequencing, layering, onion skinning, timing adjustments, and audio synchronization.

Students' outputs were evaluated using a validated Performance-Based Animation Rubric developed with input from field experts to ensure content validity and reliability. The rubric assessed four criteria: technical execution (10 points), accuracy (5 points), visual clarity (5 points), and speed (5 points), with a total score of 25 points. Technical execution carried the highest weight due to its focus on proper use of FlipaClip tools and animation quality, while the other criteria measured correctness, visual presentation, and efficiency in task completion. Performance levels were interpreted as excellent, very satisfactory, satisfactory, needs improvement, or poor based on total scores. All student outputs were assessed face-to-face using the finalized rubric to ensure consistent and accurate scoring before and after the intervention.

Data Gathering Procedure

The data gathering procedure was divided into three phases. In the pre-experimental phase, Grade 10 Arts students at Filamer Christian University for Academic Year 2025–2026 were identified as participants, and an evaluation rubric was developed, validated by experts, and revised based on their feedback until finalized. During the experimental phase, a pre-test was administered where students created flipbook animations using traditional methods to measure their baseline production skills and understanding of animation principles; outputs were evaluated by experts, and results were analyzed with mean scores computed via SPSS. In the post-experimental phase, a post-test involving similar animation tasks was conducted using the FlipaClip application as the intervention, and the resulting scores were collected and compared with pre-test data to determine the intervention's effect on students' animation performance.

Data Analysis Procedure

Data from the pre-test and post-test were analyzed to assess the intervention's impact, using Statistical Package for Social Sciences (SPSS) version 20 for accurate and reliable computations. Descriptive statistics, specifically the mean, summarized students' performance levels before and after using the FlipaClip application to show changes or improvements. Inferential statistics involved a Paired T-test at the 0.05 alpha level, suitable for comparing the same

group's performance across two conditions to identify significant differences; decisions regarding the null hypothesis were based on a two-tailed test at this significance level to confirm results were not due to chance. Additionally, Cohen's *d* was employed to measure effect size, quantifying the magnitude of the intervention's impact as commonly applied in educational research.

III. RESULTS AND DISCUSSION

Animation Production Skills of Grade 10 Students in Making Animations before using the FlipaClip Application

The descriptive statistics present Grade 10 students' animation skills before using FlipaClip, serving as the baseline for assessing the intervention's effectiveness. The group obtained a mean score of 17.50 (Very Satisfactory) with a standard deviation of 1.40, indicating that students already had foundational knowledge and could apply basic animation concepts using traditional methods, with most performing at a similar level. This rating suggests they had adequate skills but showed limitations in refinement, efficiency, and creative expression.

Compared to the post-intervention mean of 21.61 (Excellent), the results highlight that while traditional methods build basic competence, they restrict the full development of technical and creative potential. The significant improvement after using FlipaClip supports Yunita's (2017) findings that digital tools enhance spatial abilities and technical performance. This confirms that integrating applications like FlipaClip effectively strengthens animation skills and elevates overall learning outcomes beyond what conventional instruction alone can achieve.

Animation Production Skills of Grade 10 Students in Making Animations after Using the FlipaClip Application

The descriptive statistics reveal the Grade 10 students' performance in animation after using the FlipaClip application, showing the intervention's effectiveness through measures of central tendency and variability. The group obtained a mean score of 21.61, which falls within the "Excellent" performance range, alongside a standard deviation of 1.33. This low variability indicates that most students performed near the average, reflecting consistent results and showing that the tool benefited learners across different skill levels. The high rating demonstrates that students successfully applied animation concepts and produced quality outputs, as the digital platform simplified the process and enriched their creative work.

These results highlight FlipaClip as an inclusive educational tool that supports diverse learning styles and helps the whole class achieve superior outcomes. Attaining an "Excellent" level suggests that integrating such applications into Arts and Design instruction can boost engagement, motivation, and performance in subjects requiring creativity and visual expression. These findings align with Wishart (2017), who noted that digital animation tools enhance creative thinking, technical skills, and concept visualization. This confirms that technology like FlipaClip is highly valuable for developing students' animation production skills and serves as an effective addition to modern classroom instruction.

Difference in the Animation Production Skills of Grade 10 Students in Making Animations before and after Using the FlipaClip Application

Results of the paired t-test reveal a significant difference in Grade 10 students' animation performance before and after using the FlipaClip application. Before the intervention, the group had a mean score of 17.50 (Very Satisfactory) and a standard deviation of 1.40, showing foundational knowledge but limited application under traditional methods. After using the tool, the mean rose to 21.61 (Excellent) with a smaller standard deviation of 1.33, indicating improved performance and greater consistency. The mean difference of 4.11, a computed t-value of -22.74 with 29 degrees of freedom, and a p-value of .000 (below the 0.05 alpha level) confirm that the improvement is statistically significant and not due to chance.

These findings confirm that FlipaClip effectively enhances animation production skills through features like frame-by-frame editing, timeline management, and instant preview, making learning more interactive and accessible. The reduced variability in scores further suggests the tool helped standardize performance, benefiting both high achievers and those who previously struggled. Aligning with Sutopo et al. (2020), who noted that interactive multimedia boosts spatial visualization and 2D animation outcomes, this study proves that integrating digital tools significantly improves student performance. Consequently, the null hypothesis claiming no significant difference between pre-test and post-test results was rejected.

Effect size of FlipaClip Application in the Animation Production Skills of Grade 10 Students

The effect size of the intervention was measured using Cohen's *d*, a standard method in educational research for determining the magnitude of an intervention's impact. The resulting value of 4.15 is exceptionally high, well above the

threshold for a large effect, indicating that FlipaClip had a profound and transformative influence on students' animation performance. This result confirms that the improvement was not only statistically significant but also highly meaningful in practice. It shows that the application made complex tasks more accessible through an interactive interface, helping nearly all learners produce smoother, better-structured animations and effectively enhancing their technical skills.

This finding aligns with Husna and Zulfikar (2020), who established that mobile-based animation tools greatly improve technical ability and creative expression. Like those researchers, this study found that digital platforms bridge skill gaps by offering intuitive features such as frame-by-frame editing, timeline controls, and instant feedback, which turn abstract concepts into concrete, visual learning experiences. Such tools support personalized learning and guided practice, leading students to advance from "Very Satisfactory" to "Excellent" performance. These results strongly recommend the wider adoption of FlipaClip and similar technologies in Arts education, as they effectively build essential skills while aligning classroom learning with industry standards.

IV. CONCLUSIONS

The following conclusions were drawn based on the summary of findings of the study:

Students started with a "Very Satisfactory" rating, showing they already had basic animation skills. Still, their work needed refinement, and FlipaClip helped improve technical quality, accuracy, and speed through its guided tools and features.

The application proved effective in boosting both artistic and production competence. It supported learners in creating smoother, clearer, and more expressive outputs, while making animation concepts easier to master and apply.

FlipaClip also helped students overcome difficulties common in manual animation. Its user-friendly design let them practice efficiently and confidently, leading to steady growth in skill and performance throughout the learning process.

Performance rose from "Very Satisfactory" to "Excellent," with an exceptionally large effect size of 4.15. This confirms the tool's strong impact, showing how digital integration enhances not just skills but also creativity and engagement.

V. RECOMMENDATION

Students may continue utilizing the FlipaClip application to further develop and refine their animation performance skills. They may use the tools for personal projects, extracurricular activities, or competitions to practice regularly. Regular use of the application will help master essential principles of movement and timing, ultimately leading to higher-quality animations. Teachers may integrate the FlipaClip application into classroom instruction, particularly in digital Arts and Design. Embedding this tool into learning activities and assessments can provide students with a more practical and engaging learning experience. It effectively promotes deeper understanding and mastery of animation concepts and techniques.

Art enthusiasts and individuals interested in digital media may also explore the FlipaClip application. The platform offers excellent opportunities for creative expression and skill enhancement. It serves as a valuable tool for anyone seeking to expand their abilities in digital animation and visual storytelling. Curriculum developers may consider including digital arts animation tools like FlipaClip in the educational instruction. This ensures that instructional content remains aligned with current technological trends and industry standards. Furthermore, such integration helps equip students with relevant competencies needed in both academic and professional fields.

Finally, future researchers may be encouraged to conduct similar studies across different grade levels, subjects, or school settings. They may also compare the effectiveness of FlipaClip with other animation software available in the market. Conducting long-term studies is also recommended to provide deeper insights into the tool's impact on learning outcomes.

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