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Maximizing Learners' Learning in Economics through Cartooned Concept Instructional Material

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Abstract

Using a quasi-experimental design, this study investigates the effectiveness of cartoon-based instructional materials on learners' achievement in Economics. Fifty (50) Grade 9 learners were assigned to the control class receiving a traditional approach and experimental class with an intervention using localized cartooned concept materials focused on fishing and coastal economies. Pre-tests and post-tests were administered to assess knowledge improvement. The findings reveal that learners exposed to cartooned instructional media demonstrated significantly higher achievement scores than those taught using traditional teaching methods without the intervention. The results align with previous studies, highlighting that cartoons improve academic performance and foster creative, critical, and analytical thinking. The engaging nature of cartoons helped sustain student interest, enhancing comprehension and retention of economic concepts. The research concludes that cartoon-based instructional media are highly effective in enhancing student learning and engagement, presenting them as a valuable pedagogical resource for improving educational outcomes in economics and beyond. The study recommends incorporating cartoon-based media into teaching strategies, providing teacher training, and exploring the broader use of such tools across various subjects and educational levels.

1. Introduction

Teaching and learning involve various strategies, methods, and the right instructional tools, making learning more engaging and long-lasting. In today's era, visual media is an integral learning tool, enhancing learner engagement in learning pedagogy. This is primarily evident in secondary-level economics, where complex concepts, theories, and practical applications can be challenging for learners to grasp. To address these challenges, innovative teaching aids are essential for enhancing learning and retention.

To this end, the researchers have developed culturally relevant teaching aids aimed at helping learners think critically and creatively when understanding concepts. These cartoon-based instructional materials offer an approach specifically designed for economics. The materials employ simplified, static cartoon images to convey ideas, examples, and terms aligned with learners' cultural knowledge, allowing diverse backgrounds to engage meaningfully. According to Srinivasalu (2016), teaching through cartoons can effectively address misconceptions. Similarly, Zhang's (2012) study found that cartoons can improve learners' comprehension, support long-term retention, and reduce misunderstandings.

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Van Wyk (2011) studied 68 secondary school learners who used cartoon instructional media as an intervention. The findings revealed a substantial increase in learners' interest in the classroom learning activities. Similarly, O'Roark (2017) used superhero characters in economics cartoons; he illustrated and described how superhero characters can communicate and relate economics concepts, including lessons in the production function, scarcity, needs and want opportunity costs, and trade-offs.

The study employed the concept of localization, tailoring the instructional content to the unique context of learners living in coastal barangays. By integrating the idea of fishing into the cartooned instructional materials, the research aimed to make economic principles more relatable and meaningful to learners' learning experiences. The study focused on the effectiveness of cartooned concept instructional materials by fitting in localized and contextually relevant content.

2. Objectives

- To examine the effectiveness of static cartooned concept instructional materials in maximizing learners' engagement and enhancing learning outcomes in economics.
- To determine how these comics can revolutionize traditional teaching methodologies, making economics more accessible and enjoyable for learners.

3. Methodology

Research Design

The research design employs a quasi-experimental design involving the manipulation or application of different treatments to assess their effects on research subjects. Initially, both groups underwent a pre-test to establish baseline knowledge levels. Subsequently, each group received a distinct instructional treatment. After the intervention, a post-test was given to evaluate the efficiency of the treatments. This strategy enables a rigorous comparison of the impact of cartoon-based instructional materials on learners' engagement and learning outcomes in economics.

The research design is outlined in the table below:

Table 1. The Research Design

Group	Pre-test	Treatment	Post-test
Experimental Class	Yes	Cartooned Concept Instructional Material	Yes
Control Class	Yes	Traditional Instructional	Yes

Participants

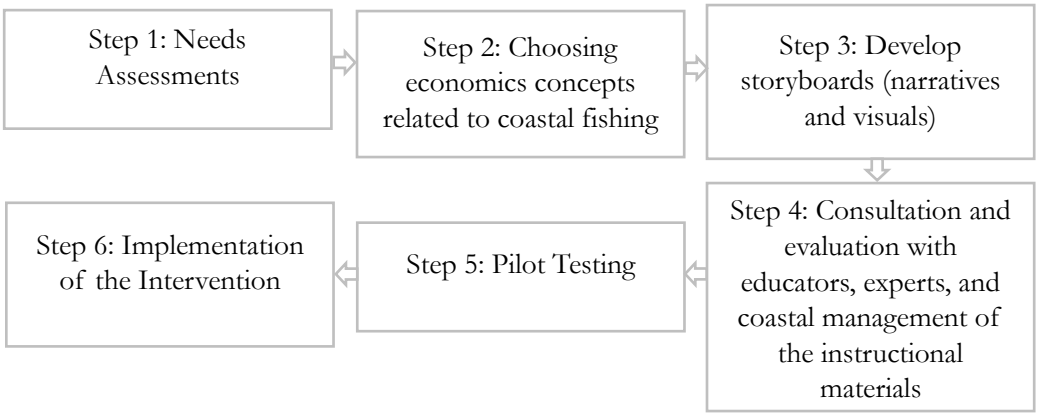
Fifty (50)learners from Grade 9 secondary school were involved and contributed significantly to the research. They were assigned to two heterogeneous classes: a class having a control class and an experimental class. The control class consisted of 25 secondary school learners (13 girls and 12 boys), and the experimental class also consisted of 25 secondary school learners (15 girls and 10 boys). Each group received distinct treatments: the experimental group used comics as learning materials, whereas the control group did not incorporate comics as learning material. The participants came from a heterogeneous grouping, and most of their family background came from fishing livelihood activities; by doing this, participants could relate the comics to the context of their cultural knowledge.

Instruments

Researchers developed a multiple-choice test consisting of 60 items designed to evaluate various dimensions of learning. The test allocated percentages: 40% for knowledge assessment, 30% for process assessment, 20% for understanding evaluation, and 10% for product assessment. These components aimed to provide a comprehensive measure of learners' proficiency levels.

Development of Culturally Relevant Cartooned Concept Instructional Materials

The key steps involved the integration of fishing localization in cartoon concept instructional materials.



Procedure

The study lasted seven weeks and focused on exploring concepts of demand, supply, and market equilibrium. In the initial week, the researcher introduced the use of comics and outlined the research procedure. Four experts who teach economics at the secondary school level evaluated the instructional comics. The control and experimental classes were given a pre-test to assess learners' initial abilities before implementing the intervention.

From the second week onward, classroom teaching and learning sessions were started in the two homogenous groups of students. The control group received regular teaching without incorporating cartoon instructional materials, while the experimental group received the intervention with collaboration from learners and teachers. This instructional approach continued throughout the six weeks with feedback mechanisms.

In the seventh week, post-tests were administered to evaluate the learners' final abilities after exposure to different teaching methods, both traditional and intervention, to determine the significant changes in the improvement of achievement scores between the two groups of classes.

4. Results And Discussion

In this section, Table 2 displays an independent t-test for the paired sample used to determine the significant change in the pre-test achievement scores of learners exposed and not exposed to the cartooned instructional materials. The group exposed to cartooned instructional media and traditional teaching without the intervention revealed no significant changes in the learners' achievement pre-test scores t= (—.309), p>0.575 since the p-value is above 0.05.

Table 2. Comparison of the significant differences in the pre-test values of cartooned instructional media and traditional teaching without the intervention.

Category	**Mean**	**t-value**	**df**	**p-value**	**Eta Square**
Pre-test					
Cartooned Instructional Materials	16.76				
Traditional Teaching		-0.309	48	0.575	0.416
without Intervention	17.04				
Note: (p>0.05) p-value is above 0.05					

Table 3 illustrates the outcomes of a t-test assessing the effectiveness of cartoon concepts instructional materials on learners' achievement in Economics. Before the intervention, learners achieved an average level (M = 3.35, p <.001), indicating the baseline performance. In the other treatment, which involved traditional teaching methods without additional intervention, learners' achievement significantly improved to an above-average level (M = 4.46, p < .001). Thus, a significant difference was noted.

Table 3. Comparison of the significant differences in the pre-test values of the learners exposed to traditional teaching without the intervention

Category	**Mean**	**SD**	**95% CI**			**df**	**p**	**Eta Squared**
				upper	**lower**			
Traditional Teaching								
without Intervention								
Pre-test	16.76	3.35	27.286	62.645	-29.125	48	0.001	0.02083
Post-Test	34.76	4.46		95.845	-26.325			
Note: (p<0.05) p-value is below 0.05								

The outcomes indicated in Table 4 that the initial achievement of learners before exposure to the intervention was considered reasonably satisfactory (M = 17.04, SD = 3.03).Following the intervention, the achievement scores significantly improved, categorizing learners' performance in Economics as excellent (M = 49.92, p < .001).

Table 4. Comparison of the significant differences in the pre-test and post-test values of the secondary school learners with an intervention to cartooned instructional materials

Category	**Mean**	**SD**	**Df**	**p**
Cartooned Instructional Media				
Pre-test	17.04	3.03	48	0.001
Post-Test	49.92	5.36	48	0.001
Note: (p<0.05) p-value is below 0.05				

Table 5 shows the paired sample t-test assessing the significant differences in post-test achievement scores between learners exposed to cartooned instructional materials and those subjected to traditional teaching methods without intervention. The analysis indicates substantial differences in post-test achievement scores for both groups. Learners exposed to conventional teaching methods without intervention significantly increasedtheir post-test scores (M=34.76, p<.001). Similarly, learners exposed to cartooned instructional materials significantly improved their academic achievement scores (M=49.92, p<.001). The higher mean scores indicate that cartooned instructional materials are more effective in enhancing educational achievement, making learning more engaging and enjoyable.

Table 5. Comparison of the significant differences in the post-test values of the secondary school learnerswith and without intervention to cartooned instructional materials

Category	**Mean**	**SD**	**t-value**	**Df**	**p**	**Eta Square**
Post Test						
Traditional Teaching Without Intervention	34.76	4.46	-10.854	48	0.001	0.02083
Cartooned Instructional Materials	49.92	5.36		48	0.001	
Note: (p<0.05) p-value is below 0.05						

The learners exposed to traditional teaching without the intervention experienced notable improvement in their achievement scores. However, the extent of this improvement was relatively small when compared to the achievement scores of learners who used cartooned instructional media. This indicates that while both groups progressed, the group using cartooned instructional materials achieved significantly higher scores, demonstrating a more substantial gain in understanding and applying the material.

The implementation of cartoon-based instructional media significantly improved learners' achievement scores, underscoring their effectiveness as a pedagogical intervention in teaching Economics. The intervention was more beneficial and engaging, which enhanced the learner's comprehension and performance in the subject. According to researchers such as Yuksel and Adiguzel (2012), cartoons promote the change of original, creative, and critical cognitive skills. Previous studies byAkamcaand Zhang (2012) reported better performance among students who engaged with cartooned concept materials. Additionally, Bhowon et al. (2014) indicated that concept cartoons positively impact conceptual understanding and academic performance. Cho (2012) also demonstrated that using cartoons can enhance student performance.

The observed increase and improvement of post-test scores is due to the implementation of culturally relevant cartooned concepts asinstructional materials, which has been shown to enhance student achievement significantly. The study of Marianthi (2016) emphasizes that comics as instructional material can effectively motivate learners in secondary schools by capturing and maintaining learning interest, subsequently improving their analytical and critical thinking abilities. Cho (2012) corroborates this, highlighting that cartoon concept materials are a valuable instructional tool for enhancing classroom learning quality. Additionally, Sengul and Dereli (2013) found that using cartoons positively influences perceived achievement levels. Furthermore, Birisci, Metin, and Karakas (2010) demonstrated that employing concept cartoons in teaching bolsters critical thinking skills and increases students' interest and excitement in learning.

5. Conclusion

The findings of this experimental study highlight the effectiveness of culturally relevant cartooned instructional media in enhancing learners' achievement in Economics compared to traditional teaching methods. While both groups demonstrated improvement, the group using cartoon-based instructional materials achieved notably higher scores, showcasing a more substantial understanding of the subject matter.

This finding aligns with previous research, emphasizing that cartoons enhance academic performance and stimulate creative, critical, and analytical thinking. The engaging nature of cartoons helps maintain students' interest, contributing to better comprehension and retention of concepts. This study supports using cartooned instructional media as an impactful and engaging pedagogical tool, providing a more dynamic and practical learning experience.

6. Recommendations

Educators should incorporate cartoon-based instructional media to enhance student engagement and achievement. Teachers should receive training to use these tools effectively, and curriculum planners should consider including them in standard materials. Further research is advised to explore the broader impact of this approach, and adaptations should be made to benefit diverse learners.

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