# Validation of E-Comics as Learning Materials in Social Studies

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**Abstract**

This study aimed to know the validity of E-comics as learning materials in teaching Social Studies.

The researcher used descriptive research to gather the necessary data in writing the learning material. It was conducted at Don Manuel Rivera Memorial Integrated Memorial National High School using one hundred seventy-eight (178) students in a modular learning modality during the Academic Year 2021-2022.

To determine the validity of comics, the researcher presented the accomplished E-Comics evaluated by the Resource Validators, the Social Studies Teacher from Masico National High School, Linga National High School, and Don Manuel Rivera Memorial National High School Pila District.

To determine the validity of E-Comics, the pretest and posttest were administered consisting of fifty (50) multiple items given to 178 grade 9 students from Don Manuel Rivera Memorial Integrated National High School as the respondents of this research.

The study assessed the effectiveness of developed comics as learning material for teaching specific economic concepts. The study also determined the respondents' perception of the use of developed E-comics related to the enhancement of their economics concept view. Moreover, the study provided results on the mean difference between the pretest and posttest performance of the respondents when aided by the developed comics. The researcher used a validated survey questionnaire as the primary tool of the study. The findings showed that the developed comics were effective as instructional material in teaching economics concepts on the selected topics covered in the third quarter: Circular Flow of Economics, National Income, and Inflation. The Learner's Resource Evaluators rated the E-comics as very high and commendable. There was a significant difference between the respondents' pretest and posttest mean scores. The respondents positively perceived that the developed E-Comics enhanced their inferring and communication economics concepts. Hence, the results further motivate the respondents to appreciate the task of being responsible for using their resources and value their effect on humans and the environment. Future utilization of this E-Comic as learning material in teaching specific economics concepts would raise the performance of the learners.

Key Words: Comic; Learning Materials; Social Studies; Economics

## 1. Main text

### Introduction

"Education must not come to an end," is one of the Department of Education's guiding principles. Leonor Magtolis Briones, the Education Secretary, stated. "Based on our observations of the Basic Education – Learning Continuity Plan's execution, we have determined a need to determine what learning modality pupils require." In all matters, teachers & principals goals were to reach students and ensure the continuance of education. Various tactics, planning, and implementation are always considered for a shift. The Self-Learning Module, or SLM, was offered by the Department of Education as a learning guide for students. The learner has an advantage when employing self-paced learning resources in this non-formal mode of education. However, not everyone is a previous learner who can grasp the concept and substance of the lesson quickly. In some cases, learners will seek support or help from their parents, brothers, or friends to complete the learning activities that they are assigned. Learners require resources or equipment that they can use at home. The pupils' interest and enthusiasm for learning must remain continuous. Images, colors, and printing in

instructional materials can quickly stimulate a student's interest. However, most of the learning materials, particularly in Social Studies, end up in their conventional form, with text and numbers. They have a hard time grasping concepts that are unfamiliar to them. As a result, the researcher built and developed this E-Comics as a learning resource that provides information and guides learners as they complete their module's learning objectives. As a result, this study determined the validity of E-Comics learning material as a tool that learners and teachers can use at home and school to learn and teach Social Studies.

**Background of the Study**

Learning is a process that leads to change, and education is the experience of life itself. Learning helps students to perform something quickly and efficiently with the help of available resources. Learning also assists individuals in acquiring the required skills and knowledge so that they can achieve their objectives.

This E-Comics is a form of narrative instead of other types of learning resources. They offer a tale using a succession of static photos as a technique (Lazarinis et al., 2015). It would be incorrect to classify comics as better or worse than other genres, unlike ordinary books, paintings, or movies; yet, it must be acknowledged that they differ from other genres (Karczewski, 2013). Similarly, the readers must understand the learning resources they are using. Learners must put their reading skills to the test. However, most students continued to use devices for entertainment, education, research, and gaming. They tend to focus or devote a significant amount of time using devices for searching and reading.

As a result, youngsters may suffer physical and emotional harm due to their excessive usage of gadgets such as cell phones, tablets, and computer desktops. According to a study, children spend too much time using electronics, they are more likely to become overweight and suffer seizure and eye problems. According to the 2011 report of the World Health Organization, cellphones and other wireless devices are considered category 2B risk because of their radiation emission. In December 2013, Dr. Anthony Miller from the University of Toronto's School of Public Health revealed that radiofrequency exposure is a threat to children. Healthy Child Healthy World acknowledges this rising radiation issue among children and tips on protecting children from these harmful gadgets. In that case, instructional materials now need to avoid too much exposure to radiation from gadgets. One example of instructional materials is comics. This instructional material will help increase the students' interest in learning, a development that will enable the learners to become better people in society. Somehow one of the best and most obvious benefits of comic book is that i can tbe more fun and easier to read than regular books. This can be highly appealing to young children who would otherwise have little interest in reading traditional forms of books. It is better for the learners to focus on learning materials rather than use gadgets. An instructional material like this can also aid in avoiding too much use of gadgets.

Another thing is that studying Social Studies is also thought to be tedious, and students lose interest in the subject. As a result, this research was carried out to make the subject more fascinating and appealing to students while also making studying more fun. In answer to the challenge, the researcher produced and developed E-Comics as a learning material based on the most essential learning competencies and aligned with a self-learning module that students use in their studies. E-Comics is primarily used as a kind of distance learning to teach students who cannot attend face-to-face classes or who live in remote places. They can be utilized to continue their education despite these obstacles. These learning materials will give some interesting information that aligns with the most essential learning that the learners can use to increase their reading ability and comprehension. These E-Comics may also guide them to get the information they need on their self-learning module.

**Theoretical Framework**

The DepED provided the different learning modalities such as the modular learning approach, printed and digital use, and blended learning. Those learning approaches are based on the most essential learning and provide the self-learning module or self-paced learning materials the essential contents that the student can use. But it is essential that in every task on their self-learning module, the students can relate it to

their actual situation to answer the tasks even at home. Learning must be applied anytime and anywhere. Like Bruner in his Learning theory, he was concerned with how knowledge is presented and organized through different modes of thinking or representation. In his research on children's cognitive development, he proposed three modes of representation. Enactive or action-based, Iconic or image-based, symbolic or language-based. They are applied in comic form.

This study is also anchored on Piaget Vygotsky's theory of constructivism. His theory explained that learners construct knowledge rather than just passively taking in information. It is based on the idea that people actively construct or make their knowledge based on experiences. Students build on their prior knowledge and construct new understanding based on lessons taught. The theory develops advanced critical thinking, analysis, evaluation, and creation skills. Dialogue and conversation are also vital components of successful learning. Unfortunately, comic books are like an intermediary to reading comprehension. Comics can scaffold complex disciplines and concepts and give reluctant readers the non-threatening practice and experience for more challenging texts. There should be harmony between the child's ongoing life activities and his experiences in the school. New learning is always a continuation or expansion of learning that are already possessed by the learner.

Another theory is explained by Siemens. In his theory, he emphasized the idea that knowledge is a series of the interrelated web from not only social interaction but experiences, digital observations, or even organizations. The comics feature different samples or situations aligned with the topics and accord with authentic experiences that the readers can relate to. In the end, the interconnectedness of all of the knowledge leads to learning.

This study aimed to track the theoretical and methodological evolution of the E-comics for Social Studies subject. It's designed to be used as a teaching tool to provide learners with an alternative perspective on economics. Scholars have previously stated that one of the primary obstacles in learning history subjects is pupils' inability to retain historical facts, events, years, and people (Hwa, 2004). Comics provide a unique learning experience that may assist kids in overcoming some of their academic challenges. Although comics have been utilized as a teaching tool, it is safe to conclude that this was only done by altering the text to a traditional comic form (Razilah, 2011). Employing comics, learners' reading ability might increase and develop. Interesting pictures and text by presentation will give so much fun and interesting information for the learners to learn.

In this study, researcher developed a theoretical framework and use it as a guideline to produce E-comics as a teaching aid and learning materials in Social Studies.

**Statement of the Problem**

This study aimed to know the validity of E-Comics as learning materials in teaching Social Studies evaluated by the learners and validated by Learning Resource Evaluators.

Specifically, this research identified the following objectives:

1. Determine the level of validity of E-Comics in terms of its component as to:
      1.1. Objectives;
      1.2. Content; and
      1.3. Assessment?

2. Determine the level of validity of E-Comics in terms of its characteristic as to:
      2.1 accuracy;
      2.2 clarity;
      2.3 appeal; and
      2.4 originality?

3. Determine the mean performance of the students in terms of:
      3.1 Pretest; and
      3.2 Post-test.

4. Determine the significant difference in the performance of students in terms of:

4.1 Pretest; and

4.2 Post-Test

5. Determine the significant effect of utilizing E-Comics on the students' performance.

## METHODOLOGY

This chapter presents the methodology used in securing the data needed for the research study. This includes the locale of the study, sampling and respondents, instrumentation, data gathering procedure, and statistical treatment.

### Research Design

The researcher utilized a descriptive research method by constructing learning material in Social Studies using comics. A questionnaire and tests were formulated as the research instruments of the study.

To determine the validity of the comics, the researcher used one group pre-test and post-test methods. On the other hand, to determine the level of validity of E-Comics, survey questionnaires were given to a group of evaluators for more reliable results.

### Respondents of the Study

The respondents of this study were one hundred seventy-eight (178) Grade 9 students of Don Manuel Rivera Memorial Integrated National High School SY 2021-2022 and 20 Resource Evaluators of comics from Masico National High School, Linga National High School, and Don Manuel Rivera Memorial Integrated National High School Pila District. The resource validators of E-Comics are all Social Studies teachers from the secondary schools in Pila district. The section of the respondents was chosen through the approval and recommendations of the teacher-in-charge of all Grade 9 classes.

### Research Procedure

Primarily, a request letter was sent to the Schools Division Superintendent to conduct the study regarding the development of E-Comics as learning materials in Social Studies. After the endorsement from the School Division, the researcher sent a request letter to the School District Supervisor and the principal of the secondary schools in Pila District for consent to conduct this study.

The researcher underwent the following stages during the conduct of the study: development, validation, and evaluation phase.

The E-Comics script originally was created by the researcher. During the development stage topics such as Circular Flow of Economy, National Income, and Inflation are gathered. The content base on the topic aligned to the most essential learning competencies. Each topic on E-comics ends with a short assessment.

Social Science teachers in secondary school Pila, district is the resource evaluators of the E-Comics. The researcher prepared a survey questionnaire validated by the experts formulated to evaluate the components of E-comics. Characteristics of comics were also evaluated based on accuracy, clarity, appeal, and originality.

Results and data of the Pre-test and Post-test were gathered upon utilization of E-Comics. E-comics were used by the 178 Grade 9 students as respondents. They are the students in the modular learning delivery approach at Don Manuel Rivera Memorial Integrated National High School.

### Figure 1. Procedure in the Development and Validation of E-Comics

The steps used by the researcher to come up with the learning materials like E-Comics were as follows:
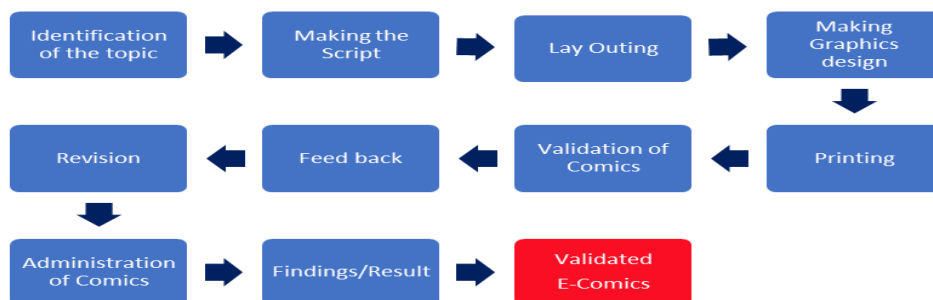
1. Identification of the topic- learning materials were prepared after the topics were gathered covering the third grading period in Social Studies 9.

2. Making the script- the researcher prepared the script after identifying the topic for the third grading of Social Studies 9. It was checked by the Social Studies teachers.

3. Lay outing thru panels- the script made by the researcher was aligned into four to six panels after the adviser's approval.

4. Making graphics in a computer-a cartoonist was consulted by the researcher for the graphics. Making graphics consumed two weeks before it was finished. The adviser checked the first draft, and some revisions were
done.

5. Printing the E-Comics after it was checked and evaluated by the adviser. Feedbacks and suggestions accepted. Revision of comics must be done.

6. Validation of comics-a group of evaluators from Linga National High School, Masico National High School, and Social Studies Teacher from Don Manuel Rivera Memorial National High School validated the learning materials to get the teacher's comments and suggestions. A questionnaire to evaluate the validity of the comics on the selected topics in Social Studies (Economics) was also prepared by the researcher based on the following criteria: accuracy of materials, clarity of materials, appeal to target users, originality of presentation, and components based on its objectives, content, and assessment.

7. Administration of the comics- the researcher provided a copy of comics to selected grade 9 students from Don Manuel Rivera Memorial Integrated National High School and the resource evaluators of comics. After conducting the instructional materials, a post-test was given to determine how well they learned the topic in the E-Comics.

**Figure 2. Procedure in the Development and Validation of Pre-Test and Post-Test**
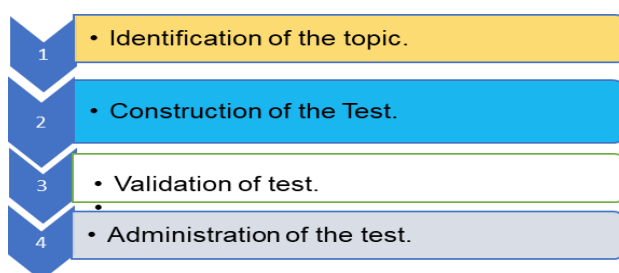


The researcher followed several steps in developing the Pre-test and Post-test. They were as follows:

1. Identification of the Topic. The researcher used the 3$^{rd}$ Quarter of Social Studies topic that applies to the recent study.

2. Construction of the test. The researcher prepared the Table of Specifications in the third quarter to identify the competency test. This Pre-test and Post-test are composed of 50 items.

3. Validation of test. The research adviser and the Social Studies Head Teacher/ Coordinator of Don Manuel Rivera Memorial Integrated National High School validated the instrument before the researcher conducted her study.

4. Administration of the test. After the validation, the test was conducted in Don Manuel Rivera Memorial Integrated National High School, composed of 178 students from grade 9, under a modular approach.

**Research Instrument**

The researchers prepared learning materials in the form of a comic covering the topics for the third grading period in Social Studies. The researcher constructed a fifty (50) multiple-choice test to validate the learning materials.

A questionnaire was formulated to determine the level of validity of the learning materials.

The researcher presented a questionnaire to the targeted Social Science Teachers for their validation and assessment of the developed E-Comics. This questionnaire is based on the level of validity of E-Comics as learning materials in Social Studies in terms of their components to objective, content, and assessment. At the same time, the second part is about the characteristics of E-Comics as to accuracy, clarity, appeal, and originality. These will be guided by the numeric scale given 4- Strongly Agree, 3- Agree, 2- Dis-Agree,1- Extremely Dis-Agree.

The researcher administered a questionnaire through printed and limited face-to-face to be answered and evaluated by the Social Studies Secondary Teachers in Pila District.

**Statistical Treatment of Data**

The statistical treatment of data was analyzed using the purposive sampling formula for a dependent sample mean and weighted mean.

Weighted mean and standard deviation were used to determine the level of validity of E-Comics in terms of their components as to objectives, content, and assessment. Also, the weighted mean and standard deviation were used to determine the level of validity of E-Comics in terms of their characteristics as to accuracy, clarity, appeal, and originality.

To determine the significant difference in the students' performance before and after the use of comics, a t-test for the dependent sample mean was applied. Pre-test and post-test were applied to determine the significant difference in the performance of the students. The t-test for uncorrelated mean at .05 was used to determine the significant effect of utilizing E-Comics on the students' performance. These will be guided by the numeric scale given 41-50 Outstanding, 31-40 – Very Satisfactory, 21-30- Satisfactory,11-20- Fairly Satisfactory, 0-10 – Did not Meet Expectations.

Scale on the Performance of the Students as to the Pre-Test and Post-test

| RANGE | REMARKS |
|---|---|
| 41- 50 | Outstanding |
| 31- 40 | Very Satisfactory |
| 21- 30 | Satisfactory |
| 11 -20 | Fairly Satisfactory |
| 0- 10 | Did Not Meet Expectations |

|  |  | Remarks | Verbal Interpretation |
|---|---|---|---|
| 4- | 3.50-4.00 | Strongly Agree (SA) | Very High |
| 3- | 2.50-3.49 | Agree (A) | High |
| 2- | 1.50- 2.49 | Dis-Agree (DA) | Low |
| 1- | 100-1.49 | Extremely Dis-Agree (EDA) | Very Low |

**Results and Discussion**

**PRESENTATION, INTERPRETATION, AND ANALYSIS OF DATA**
**PRESENTATION, INTERPRETATION, AND ANALYSIS OF DATA**

This chapter provides the data gathered, the computation results, and the interpretation of the study's findings. The presentation of findings followed the order of the questions enumerated in the problem statement. The data are presented in tabulated form using mean, standard deviation, and t-test as statistical treatments.

**Level of Validity of E-Comics in terms of its Components**

Objective of the E- comics help define goals, it is the result profits and aim to achieve a certain topic to be discuss. It anchored to the self-learning module and most essential learning competencies provided by the DepEd. Content covers the scope specified by the objectives. Ideas and concept are presented. Assessment is congruent to the objectives. It is the evident in the selected topics highlighting contextualization.

In this study, the level of validity of E-Comics was described in terms of objectives, content and assessment determined by the weighted mean and standard deviation.

Table 1 presents the level of validity of E-Comics in terms of its components as to objectives.

Table 1 illustrates the level of Validity of E-Comics as learning materials in Social Studies with respect to objectives. Among the statements above, each topic's objective in E-Comics is indicated and anchored in the Self Learning Module (M= 3.85, SD= 0.37). The E-Comics contain measurable objectives, which are also indicated in the activities and images (M- 3.90, Sd= 0.31).

**Table 1**

Level of Validity of E-Comics in terms of its components as to Objectives

| STATEMENT | MEAN | SD | REMARKS |
|---|---|---|---|
| 1. Objectives on topics are indicated in E-Comics. | 3.85 | 0.37 | Strongly Agree |
| 2. Anchored to the Self-Learning modules. | 3.85 | 0.37 | Strongly Agree |
| 3. Aligned to the Most Essential Learning. | 3.90 | 0.31 | Strongly Agree |
| 4. It is attainable and measurable. | 3.90 | 0.31 | Strongly Agree |
| 5. Activities and images are in line with the objectives | 3.90 | 0.31 | Strongly Agree |

**Overall Mean = 3.88**
**Standard Deviation = 0.33**
**Verbal Interpretation = Very High**

| | | Remarks | Verbal Interpretation |
|---|---|---|---|
| 4- | 3.50-4.00 | Strongly Agree (SA) | Very High |
| 3- | 2.50-3.49 | Agree (A) | High |
| 2- | 1.50- 2.49 | Dis-Agree (DA) | Low |
| 1- | 100-1.49 | Extremely Dis-Agree (EDA) | Very Low |

The overall (M=3.88, Sd= 0.33) means that the component of E-Comics with regard to its objectives appeared to be at a huge scale. This further means that respondents strongly agree that the objectives in the E-Comics confirmed their stated characteristics.

Therefore, aligned to the most essential learning, it is attainable and measurable, and activities and images are in line with the objectives are the most essential learning competencies of E-Comics in Social Studies 9 in terms of objectives.

According to Mc Millan (2015), learning objectives are statements that define what students are expected to learn. As a result, it is critical that these statements be clear and concise and that they reflect the range of content and skills to be emphasized and the level of cognition required to demonstrate what has been learned. Objectives and learning targets are more specific, referring to what is to be accomplished in a short instruction unit. In addition, according to the study of Lazarinis et al. (2015) about the usefulness of comic strip creation tools for producing educational material, it was found to be successfully used in the classroom in the past. The fundamental discovery is that, despite some restrictions, teachers with no specific expertise in painting or comic design may successfully use the tools to generate alternate and more appealing versions of the educational materials. However, the student understands the most essential learning targeted in its objective.

In addition, the MELCs were provided by DepEd as the primary reference for all schools, Schools Division Offices (SD0s), and Regional Offices (R0s) in determining and implementing learning delivery approaches that are suited to the local context and diversity of learners while adapting to the challenges posed by COVID-19. This is connected with the study because the most effective way students learn is to provide them with more familiar ideas and information and let them know the concepts by giving some background.

Table 2 presents the level of validity of E-Comics in terms of content.

Table 2 illustrates the level of Validity of E-Comics as learning materials in Social Studies as to Content.

Among the statements above, the content in each topic in E-Comics is adequate to cover the scope specified by the objectives; characters often have features that repeat each other, and ideas and concepts presented are well expressed (M= 3.90, SD= 0.31). The E-Comics are well suited and reach the level of comprehension of the target students. (M- 3.85, Sd= 0.37)

**Table 2**
Level of Validity of E-Comics in terms of its components as to Content

| STATEMENT | MEAN | SD | REMARKS |
|---|---|---|---|
| 1. E-Comic reflect the most aspect of the Most Essential Learning competencies. | 3.90 | 0.31 | Strongly Agree |
| 2. Selected topics are adequate to cover the scope specified by the objectives. | 3.90 | 0.31 | Strongly Agree |
| 3. Characters often have features that repeat each other. | 3.90 | 0.31 | Strongly Agree |
| 4. Ideas and concepts presented are well expressed in E-Comics. | 3.90 | 0.31 | Strongly Agree |
| 5. E-Comics are well suited and reach the level of comprehension of the target students. | 3.85 | 0.37 | Strongly Agree |

**Overall Mean = 3.89**
**Standard Deviation = 0.31**
**Verbal Interpretation = Very High**

|   |   | Remarks | Verbal Interpretation |
|---|---|---|---|
| 4- | 3.50-4.00 | Strongly Agree (SA) | Very High |
| 3- | 2.50-3.49 | Agree (A) | High |
| 2- | 1.50- 2.49 | Dis-Agree (DA) | Low |
| 1- | 100-1.49 | Extremely Dis-Agree (EDA) | Very Low |

The overall (M=3.89, Sd= 0.31) means that the component of E-Comics with regard to its content appeared to be at a very large scale. This further means that respondents strongly agree that the content in the E- Comics confirmed their stated characteristics.

As a result, the content of the learning materials used must be aligned with the most essential learning that the student requires. According to Kalin, as cited by Mazgon and Stefac (2012), educational content defines the selection of materials. The teacher should choose a medium that will systematically treat the educational content and its credible representation as considered learning steps. When choosing educational media/materials, the teacher should consider the didactic strategies used during the teaching process. They can be used to help with learning and teaching, as a source of independent learning, or as a source and transmitter of information.

Table 3 presents the level of validity of E-Comics in terms of assessment.

Table 3 illustrates the level of Validity of E-Comics as learning materials in Social Studies in terms of assessment. Among the statements above, the assessment of each topic in E-Comics is evident in the selected topics highlighting contextualization, and suitable assessment tools are used to support the multiple intelligences (M= 3.85, Sd= 0.37). Also, the E-Comics values formation is highly evident (M- 3.80, Sd= 0.41). On the other hand, E-Comics provide opportunities for-self-assessment that helps in the advancement of the learner, and the assessment is congruent to the objectives. (M=3.90, Sd=0.31).

The overall (M=3.86, Sd= 0.35) means that the component of E-Comics with regard to its assessment appeared to be at a very large scale.

**Table 3**
Level of Validity of E-Comics in terms of its components as to Assessment

| STATEMENT | MEAN | SD | REMARKS |
|---|---|---|---|
| 1. Assessments are evident in the selected topics highlighting contextualization. | 3.85 | 0.37 | Strongly Agree |
| 2. Suitable assessment tools are used to support the ones multiple intelligences | 3.85 | 0.37 | Strongly Agree |
| 3. Values formation is highly evident. | 3.80 | 0.41 | Strongly Agree |
| 4. Provide opportunities for-self-assessment that helps in the advancement of the learner. | 3.90 | 0.31 | Strongly Agree |
| 5. The assessment is congruent to the objectives. | 3.90 | 0.31 | Strongly Agree |

**Overall Mean = 3.86**
**Standard Deviation = 0.35**
**Verbal Interpretation = Very High**

| | | Remarks | Verbal Interpretation |
|---|---|---|---|
| 4- | 3.50-4.00 | Strongly Agree (SA) | Very High |
| 3- | 2.50-3.49 | Agree (A) | High |
| 2- | 1.50- 2.49 | Dis-Agree (DA) | Low |
| 1- | 100-1.49 | Extremely Dis-Agree (EDA) | Very Low |

This further means that respondents strongly agree that the assessment in the E- Comics confirmed their stated characteristics.

AY Wahyudin (2019) designed a study in a small attempt to confirm the effectiveness of e-comics in the teaching of writing to non-native English speakers in junior high school. To measure the improvement in the students' writing abilities, a test of writing a prior experience was given in the pre-test and post-test. The findings imply that the students' writing abilities have improved in terms of substance and organization. On the other hand, the employment of comics was unable to make a meaningful contribution to the aspects of grammar and vocabulary.

In the research of Bettin et al. (2021), In STEM fields, comics have shown promise as an educational method for transmitting ideas and enhancing retention. Students can also practice metacognition by making comics since they are asked to reflect on what they know and how to convey it freshly. The assignment and assessment criteria are based on previous work on teaching programming topics via context-bounded analogy. Students will make a comic book that illustrates an algorithmic topic and then uses it as a tool for further communication, responding to peer comments to improve their comprehension. Therefore, E-Comics are effective in terms of assessment.

**Level of Validity of E-Comics in terms of its Characteristics**

Accuracy of E-Comics relate to present learning on the different contents in Economic. Topics are well-arranged to provide clear sequence for understanding. Clarity implies the clearness of concept in the comics that is easy to understand. Appeal captures the interest of the user. It enables the user to develop critical thinking and problem-solving skills. Originality is the aspect of created or invented works as being new or novel, design and appearance of the comics are exceptionally different from other illustrations.

In this study, the level of validity of E-Comics was described in terms of accuracy, clarity, appeal, and originality determined by the weighted mean and standard deviation.

Table 4 presents the level of validity of E-Comics in terms of its characteristics as to accuracy.
Table 4 shows the level of validity of E-comics as learning material in Social Studies as to accuracy. The

statements above, "Comics provide sufficient repetition through examples and illustrations to easily understand the concept," and "Ideas and concepts are well expressed in the comics,". It yielded the highest mean score (M=3.95, SD=0.22) and remarked as Strongly Agree. On the other hand, the statements "Topics are well-arranged to provide a clear sequence for understanding," "Comics are appropriate to the age, maturity, and experience of the user," and "Comics relate to present learning on the different contents in Economics" received the lowest mean score of responses with (M=3.90, SD=0.31) yet was also remarked Strongly Agree.

**Table 4**

Level of Validity of E-Comics in terms of its characteristics as to Accuracy

| STATEMENT | MEAN | SD | REMARKS |
|---|---|---|---|
| 1. Topics are well-arranged to provide a precise sequence for understanding. | 3.90 | 0.31 | Strongly Agree |
| 2. Comics provide sufficient repetition through examples and illustrations to easily understand the concept. | 3.95 | 0.22 | Strongly Agree |
| 3. Comics are appropriate to the user's age, maturity, and experience. | 3.90 | 0.31 | Strongly Agree |
| 4. Ideas and concepts are well expressed in the comics. | 3.95 | 0.22 | Strongly Agree |
| 5. Comics relate to present learning on the different contents in Economics. | 3.90 | 0.31 | Strongly Agree |

**Overall Mean = 3.92**
**Standard Deviation = 0.27**
**Verbal Interpretation = Very High**

| | | Remarks | Verbal Interpretation |
|---|---|---|---|
| 4- | 3.50-4.00 | Strongly Agree (SA) | Very High |
| 3- | 2.50-3.49 | Agree (A) | High |
| 2- | 1.50- 2.49 | Dis-Agree (DA) | Low |
| 1- | 100-1.49 | Extremely Dis-Agree (EDA) | Very Low |

Overall, the level of validity of E-comics as to accuracy attained a mean score of 3.92 and a standard deviation of 0.27 and obtained a Very High assessment among the validators. This implies that E-Comics shows that the topic are well-arranged and properly sequenced, provide varied example and clear illustrations to make the concept easy to understand. It can be deduced that the E-Comics are accurately and properly prepared to used by the learners. The quality of information measured by accuracy, timeliness, completeness, relevance and if it is easy to understood by the users, so the accuracy is important for quality of information. To get accurate information we need the right value.

According to many researches, corrective feedback is benefit to the development of accuracy and fluency (Sato & Lyster, 2012). From the results, all the teachers give students correction feedback, while directly correcting is the most popular one in the four main ways, which is a deductive approach to raise learners' consciousness. And different ways of correcting are used in different levels. Direct correction can let learners know where the errors are very clearly, so it is more suitable for the beginners. Because developing accuracy in a communicative way is more interested and meaningful. While even though focusing on forms is not recommended, it still should not be abandoned. The reason is that learners can gain the accuracy of target language directly.

Table 5 presents the level of validity of E-Comics in terms of its characteristics as to clarity.

**Table 5**

Level of Validity of E-Comics in terms of its characteristics as to Clarity

| STATEMENT | MEAN | SD | REMARKS |
|---|---|---|---|
| 1. Concepts in the comics are clear and easy to understand. | 3.90 | 0.31 | Strongly Agree |
| 2. Comics have adequate margins, legible typeface, and comfortable size. | 3.90 | 0.31 | Strongly Agree |
| 3. Size of prints for every box is readable and can easily be recognized. | 3.95 | 0.22 | Strongly Agree |
| 4. Layouts and graphics in the comics are attractive. | 3.85 | 0.37 | Strongly Agree |
| 5. Dialogue in the comics is easy to understand. | 3.95 | 0.22 | Strongly Agree |

**Overall Mean = 3.91**
**Standard Deviation = 0.29**
**Verbal Interpretation = Very High**

| | | Remarks | Verbal Interpretation |
|---|---|---|---|
| 4- | 3.50-4.00 | Strongly Agree (SA) | Very High |
| 3- | 2.50-3.49 | Agree (A) | High |
| 2- | 1.50- 2.49 | Dis-Agree (DA) | Low |
| 1- | 100-1.49 | Extremely Dis-Agree (EDA) | Very Low |

Table 5 shows the level of validity of E-comics as learning material in Social Studies as to clarity. The statements above indicate that the "Size of prints for every box is readable and can easily be recognized" and "Dialogue in the comics are easy to understand" yielded the highest mean score (M=3.95, SD=0.22) and was remarked with Strongly Agree. On the other hand, the statement "Layouts and graphics in the comics are attractive" received the lowest mean score of responses with (M=3.85, SD=0.37) yet was also remarked Strongly Agree.

Overall, the validity of E-comics as learning material in Social Studies attained a mean score of 3.91 and a standard deviation of 0.29 and was evaluated Very High by the validators.

In this setting, adequate, target-specific, and accurate teaching techniques and materials are required. Many educators and studies have confirmed that using materials is useful in acquiring specific skills and gains, transferring abstract concepts, and making education permanent (elikkaya, 2017; Alkan, 1990; Yaşar & Gültekin, 2009; Meydan, 2018). The content of the E-Comics must be clear and concise in order to understand the specific lesson that is found in developed learning material.

Table 6 presents the level of validity of E-Comics in terms of its characteristics as to appeal.

Table 6 shows the level of validity of E-comics as learning materials in Social Studies to appeal to the target user. Among the statements above, both statements "Comics are presented at a pace that allows for reflection and review" and "Comics stimulate the user to have an interest in Economics" yielded the highest mean score (M=3.95, SD=0.22) and was remarked with Strongly Agree. On the other hand, the statements "Titles used use in the comics capture the interest of the user", "Comics are worth for time, effort and expenses", and "Comics enable the user to develop critical thinking and problem-solving skills" received the lowest mean score of responses with (M=3.90, SD=0.31) yet was also remarked as Strongly Agree.

Overall, the level of validity of E-comics as learning materials in Social Studies to appeal to target users attained a mean score of 3.92 and a standard deviation of 0.27 and was Very High among the validators. This means that title used in the comics captures the interest of the user, that the comics are presented not only for school use but allow for reflection and review of the evaluators; that the E-Comics are worth time, effort and expenses because they can stimulate greater knowledge and interest of the students towards the subject. And because of the layouts and presentation, it stimulates the interest of the users in the subject; the E-Comics enable the user to develop critical thinking and problem solving through their questions. This means that the E-Comics appeal is suitable for the students to give more attention and interest to the topic lesson aligned to

the most essential learning competencies. .  Comics, according to Sarim Irfan (2017,) states that nothing is more escapist than people in bright tights with extraordinary abilities, feats of incredible difficulty accomplished with ease, and unfathomable odds conquered on a near-daily basis; indeed, nothing is more escapist than the unrealistic.

**Table 6**
Level of Validity of E-Comics in terms of its characteristics as to Appeal

| STATEMENT | MEAN | SD | REMARKS |
|---|---|---|---|
| 1. Titles used in the comics capture the user's interest. | 3.90 | 0.31 | Strongly Agree |
| 2. Comics are presented at a pace that allows reflection and review. | 3.95 | 0.22 | Strongly Agree |
| 3. Comics are worth time, effort, and expenses. | 3.90 | 0.31 | Strongly Agree |
| 4. Comics stimulate the user to have an interest in Economics. | 3.95 | 0.22 | Strongly Agree |
| 5. Comics enable the user to develop critical thinking and problem-solving skills. | 3.90 | 0.31 | Strongly Agree |

**Overall Mean = 3.92**
**Standard Deviation = 0.27**
**Verbal Interpretation = Very High**

| | | Remarks | Verbal Interpretation |
|---|---|---|---|
| 4- | 3.50-4.00 | Strongly Agree (SA) | Very High |
| 3- | 2.50-3.49 | Agree (A) | High |
| 2- | 1.50- 2.49 | Dis-Agree (DA) | Low |
| 1- | 100-1.49 | Extremely Dis-Agree (EDA) | Very Low |

In a nutshell, yes and no. Of course, the stark (pun intended) contrast between comics and reality contributes to their power to disconnect us from reality. Based on the dictionary, the appeal is a quality in a person or thing that arouses interest, sympathy, desire, etc.; attraction. As a thing, in connection to the study, the learning materials should be attractive or appealing to catch the learners' attention to read and understand the concept on the topic.

Table 7 shows the level of validity of E-comics as learning materials in Social Studies as to originality in presentation. Among the statements above, "The Design and appearance of the comics are exceptionally different from other illustrations," "The comics serve as a new model in teaching and learning Economics," "The setting and style are different from other illustrations," and "Characters are seen to the different setting" yielded the highest mean score (M=3.90, SD=0.31) and was remarked with Strongly Agree. On the other hand, the statement "E-comics design is unique" received the lowest mean score of responses with (M=3.85, SD=0.37) yet was also remarked Strongly Agree.

The overall level of validity of E-comics in terms of its characteristics as to originality in presentation attained a mean score of 3.89 and a standard deviation of 0.31 and was Very High among the validators. This indicated that E-Comics creativity and original concept inspire the students to think more perspective on topic or situation. These simply means that the evaluators strongly agree that E-comics as to characteristic is originally made. It also connotes that the use of E-Comics as educational tools materials in learning and teaching Social Studies is effective.

Originality makes a comic book tale "unique" and memorable, but it does not guarantee that it will

be good. Comic-book critics, on the other hand, prefer unique stories to inspiring stories.

**Table 7**

Level of Validity of E-Comics in terms of its characteristic as to Originality

| STATEMENT | MEAN | SD | REMARKS |
|---|---|---|---|
| 1. The Design and appearance of the comics are exceptionally different from other illustrations | 3.90 | 0.31 | Strongly Agree |
| 2. The comics serve as a new model in teaching and learning Economics. | 3.90 | 0.31 | Strongly Agree |
| 3. E-comics design is unique. | 3.85 | 0.37 | Strongly Agree |
| 4. The setting and style are different from other illustrations. | 3.90 | 0.31 | Strongly Agree |
| 5. Characters are seen in a different setting. | 3.90 | 0.31 | Strongly Agree |

**Overall Mean = 3.89**
**Standard Deviation = 0.31**
**Verbal Interpretation = Very High**

|   |   | Remarks | Verbal Interpretation |
|---|---|---|---|
| 4- | 3.50-4.00 | Strongly Agree (SA) | Very High |
| 3- | 2.50-3.49 | Agree (A) | High |
| 2- | 1.50- 2.49 | Dis-Agree (DA) | Low |
| 1- | 100-1.49 | Extremely Dis-Agree (EDA) | Very Low |

Indeed, emphasizing uniqueness increases attitude certainty (a type of attitude strength) and attitude-intention correspondence when that motivation is validated (Clarkson et al., 2013). However, in addition to examining uniqueness motivations and not individual differences in uniqueness, current studies also examine perceptions of thought uniqueness.

One dimension relevant to the current research is perceived uniqueness or the perceived originality of thought. Because one's thoughts can be viewed as a personal possession (Abelson, 1986), perceiving one's thoughts as unique may be associated with less persuasion following exposure to a counter attitudinal message. In addition, according to Republic Act No. 10372 of section 216, a person infringes a right protected under this Act when one: directly infringes copyright.

**Mean Performance of Student**

A statistical analysis of student responses to test questions can reveal which areas of the curriculum the students are struggling with. This can be used to reinforce those areas in your lessons. The t-test for the dependent sample mean was used to see if there was a difference between the means of the pre-test and post-test. A weighted mean was used to interpret the data on the level of validity of E-Comics.

Table 8 presents the performance of the students as to the pre-test and post-test scores.

As per the pre-test, out of one hundred seventy-eight (178) respondents, ninety-one (91) gained satisfactory scores between 21 and 30. This is followed by those who have scored between 11 and 20, which makes up 36.52% of the population and was fairly satisfactory. On the other hand, the remaining twenty-two (22) students gained scores between 31 to 40 which was satisfactory.

As per the post-test, out of one hundred seventy-eight (178) respondents, one hundred thirty (130) gained scores between 31 and 40 which were satisfactory. This is followed by those who has scored between 21 and 30, which makes up 20.22% of the population and was satisfactory. On the other hand, the remaining twelve (12) students gained scores between 41 to 50 which was outstanding.

Overall, the student's performance in the pre-test was satisfactory, with a mean score of 23.08 and a standard deviation of 5.78. Their performance was very satisfactory for the post-test, with a mean score of 38.40 and a standard deviation of 4.06.

**Table 8**
Performance of the Students as to the Pre-Test and Post-test

| RANGE | PRE-TEST | | POSTTEST | | REMARKS |
|---|---|---|---|---|---|
| | FREQUENCY | PERCENTAGE | FREQUENCY | PERCENTAGE | |
| 41- 50 | 0 | 0.00 | 12 | 6.74 | Outstanding |
| 31- 40 | 22 | 12.36 | 130 | 73.03 | Very Satisfactory |
| 21- 30 | 91 | 51.12 | 36 | 20.22 | Satisfactory |
| 11 -20 | 65 | 36.52 | 0 | 0.00 | Fairly Satisfactory |
| 0- 10 | 0 | 0.00 | 0 | 0.00 | Did Not Meet Expectations |
| Total | 178 | 100.00 | 178 | 100.00 | |
| **Overall Mean** | | 23.08 | | 34.80 | |
| **Standard Deviation** | | 5.78 | | 4.06 | |
| **Verbal Interpretation** | | Satisfactory | | Very Satisfactory | |

This implies that the result of the pre-test as compared to the result of the post-test after the utilization of E-Comics was made determines the significant difference in the performance of the students. Students after the use of comics gained more understanding to the concept and overview of the lesson. Therefore, the E-Comics has significant effect to the learning ability of the student to comprehend on the lesson based on the performance result.

According to Kuehn (2017), students are not expected to know all of the answers to all questions while taking the pre-test at the beginning of a semester. They should, however, be expected to use the preceding answer to forecast rational responses. All prior knowledge is just the evidence of what they know; a test implies students' preparedness for further studies.

Furthermore, according to Kelly (2017), teachers must know their students' prior knowledge before beginning the class. Pretesting is one method of determining the student's ability to learn what will be taught in the class. It is also a method of assessing student's learning over a period of time and determining comprehension prior to training.

Table 9 presents the significant difference between the pre-test and post-test scores of the students.

**Table 9**
Significant Difference Between the Pre-Test and Post Test Scores of the Students

| Test | Mean | Variance | t statistic | Critical t value | p-value | Analysis |
|---|---|---|---|---|---|---|
| Pre-Test | 23.08 | 33.456 | -31.04 | 1.97 | 0.000 | Significant |
| Post Test | 34.80 | 22.648 | | | | |

There is an observed significant difference between the pre-test and post-test scores, as implied by the computed t-statistic of -31.04. The negative value suggests that the post-test scores are more significant than the pre-test, and when compared to the critical value of 1.97, the t-statistic is beyond the latter value. Furthermore, the computed p-value of 0.000 suggests that the test is significant, for it is less than the significance alpha of 0.05.

From the findings above, we can infer that at a 0.05 level of significance, the null hypothesis stating "There is no significant difference between the pre-test and post-test scores of the respondents upon using the E-Comics as learning materials in Social Studies" is rejected. This implies that E-comics is effective to improved and develop understanding on the topic presented. It has a significant difference on the performance of the student.

Pre and post testing of students is widely accepted as a viable method of determining the extent to which an educational intervention has had an impact on students' learning, according to Capistrano (2013).

Table 10 presents the significant effect between the pre-test and post-test scores of the students.

There is an observed significant positive effect as directed by the utilization of the E-Comics as suggested by the beta coefficient of 0.679. The positive value suggests an increase in the variables when the other increases. Furthermore, the computed p-value of 0.000 suggests that the test is significant, for it is less than the significance alpha of 0.05.

These findings lead to the rejection of the null hypothesis. There is a significant effect of the use of E-Comics on the performance of Junior High School. Therefore, the teacher can conclude that the E-Comics were effective and that the students know more than they did at the beginning of the instruction. This calls for the validity of E-Comics as learning materials that incites a significant effect on the performance of the Junior High School.

**Table 10**

Significant Effect of Utilizing the E-Comics on the Performance of the Junior High School Learners

| | Performance | Beta Coefficient | F value | p-value | Analysis |
|---|---|---|---|---|---|
| Utilizing E-Comics | Scores of the Students in the Post-test | 0.679 | 79.861 | 0.000 | Significant |

Table 10 presents the significant effect of utilizing the E-Comics on the performance of the Junior High School Learners.

After the implementation of the E-Comics for 4 weeks, a significant increase on students' conceptual understanding in Economics is revealed as shown in the difference between the pre-test scores (M = 23.08, SD = 5.78) and post-test scores (M = 34.80, SD = 4.06). This indicated that students who used the E-Comics, improved their understanding on the lesson. By means of E-Comics the student performance increased. Here are some of the comments of students which describe how they see an increase in their conceptual understanding of the topics as coded from the interview:

*" The E- Comics helped us to better understand the topics being discussed by Ma'am. Since not all* of us have books, the E-Comics is a big help for us to have someth*ing to read"*.

*"*The comics aided my learning because, in addition to being entertaining, Many examples were provided in a brief and to-the-point explanation given. The drawings also assisted me in better understanding. Text written in E-Comics I could identify with the images in the comics because I've had similar experiences*"*.

Baclay (2011) suggested a more effective method for assessing and comparing students' post-test scores to their pre-test scores following the evaluation. Based on the study's result, the evaluation procedure's impact on students' use and validation of comics as learning tools had a significant impact on their performance in Social Studies 9. (Economics).

In relation to the effects of comics, Lin et al. (2015) revealed that students who used a comic book had developed an increased interest and enjoyment of learning while the participants who used a textbook had a decrease in their interest and enjoyment.

**Summary of Findings**

This chapter presents the summary of findings, the corresponding conclusions, and the subsequent recommendations in the light of the study.

This summary of findings is presented according to the sequence outline of the problem statement in Chapter 1.

Based on the data gathered, organized, and analyzed, the following were the researcher's findings.

Specifically, the study sought to answer the questions; Determine the level of validity of the component of E-Comics in terms in terms of;1.1 objectives;1.2 content; 1.3 assessment; 2. Determine the level of validity of the characteristics of E-Comics in terms of; 2.1 accuracies; 2.2 clarity; 2.3 appeals 2.4 originality. Determine the mean performance of the students in terms of; 3.1 pre-test; 3.2 post-test; 4. Determine the significant difference in the performance of students in terms of: 4.1 pre-test; 4.2; post-test; 5. Determine the significant effect of utilizing E-Comics on the students' performance.

The study's main objective is to determine the outcome of the student's performance using a validated E-Comics. The students' performance was determined in terms of pre-test and post-test incomparable to the traditional assessment method.

The respondents of this study were (178) Grade 9 students of Don Manuel Rivera Memorial Integrated National High School, Pila Laguna SY 2021-2022, and Resource Evaluators of comics from Masico National High School, Linga National High School, and Don Manuel Rivera Memorial Integrated National High School Pila District. Three sections were used in the modular learning approach in the study. The study was conducted during the third grading period of the school year 2021-2022.

Statistical treatment of the data used in the following is (1) t-test and standard deviation to compare the pre-test and post-test scores of the groups. (2) weighted mean was used to get the level of validity of the respondents on the E-Comics.

The weighted mean and standard deviation were used to determine the level of validity of E-Comics in terms of their objectives, content, and assessment components. In addition, the weighted mean and standard deviation were used to assess the level of validity of E-Comics in terms of accuracy, clarity, appeal, and originality.

The statistical treatment of the gathered data revealed the following.

1.**Level of Validity of E-Comics in terms of Components**

The over-all weighted mean on the on the three component- objective, got 3.88, content 3.89 and the assessment got 3.86, which were interpreted as strongly agree. "However, it is noticeable that the second component which is the content resulted in higher rating mean of 3.89 with an interpretation of very high.

2. **Level of Validity of E-Comics in terms of Characteristics**

The over-all weighted mean on the four characteristics- accuracy, got 3.92, clarity 3.91, appeal got 3.92 and originality got  3.89, which  were interpreted as strongly agree. "However, it is noticeable that the accuracy and appeal got the highest mean of 3.92 with an interpretation of very high. Although the accuracy and appeal rated high among the four characteristics still the result of the clarity and originality of E-Comics interpreted strongly agree as evaluated by the resource validators.

3. **Mean Performance of Student**

The computed t-statistic of -31.04 indicates that the pre-test and post-test scores differ significantly. The negative value indicates that the post-test scores are more significant than the pre-test scores, and the t-statistic is greater than 1.97. Furthermore, because the computed p-value of 0.000 is less than the significance alpha of 0.05, the test is likely to be significant.

The pre-test mean score was interpreted as "satisfactory," while the post-test result was interpreted as "very satisfactory." We can conclude that at the 0.05 level of significance, the null hypothesis "There is no significant difference between the pre-test and post-test scores of the respondents after using the E-Comics as learning materials in Social Studies" is rejected. The study was valid because there was a significant difference between the pre-test and post-test scores. This necessitates the acceptance of alternative learning materials, which makes a significant difference.

**Conclusion**

It is expected that the study will contribute to disseminating the strategy in other programs and institutions and encourage teachers to use E-Comics in their students' learning processes. Educational comics, including information on social problems, including social studies, economics, science, and technology, will increase students' economics literacy. In this study, various samples and ideas are presented to increase

awareness about how E-Comics can be used in social studies. The documents presented show that E-Comics can easily be used to entertain and educate for social studies purposes. In some documents, this feature of comics makes them accurate edutainment tools to consider alternative learning materials or tools.

Based on the inferential question, the result computed data on the Level of implementation of the most essential learning competencies of E-Comics in Social Studies in terms of objective, content, and assessment are very high. The findings revealed that objectives on topics are indicated in E-Comics. The topics chosen are sufficient to cover the scope specified by the objectives. On the other hand, the statement "E-Comics are well suited and reached the level of comprehension of the target students" was also strongly agreed upon. As a result, I concluded that E- Comics could be developed as learning materials for teaching Social Studies. It is also an excellent resource for teaching Social Studies (Economics). E-Comics is founded on the most important learning competencies in objectives, content, and assessment, which have been proven to be highly implemented and influential among validators.

On the other hand, E-comic's level of validity in terms of accuracy, clarity, appeal to the target user, and originality, as validated by the resource validators was remarked as strongly agree. Therefore, the E-comics as to verbal interpretation means that it is very high among the validators.

Significantly, the   pre-test and post-test results   show a significant difference in the students' overall performance. The hypothesis that there is no significant difference between respondents' pre-test and post-test scores after using E-Comics as learning materials in Social Studies was rejected. The student's performance on the pre-test was satisfactory. The post-test result was very satisfactory after using E-Comics with the respondents. The results revealed that using E-Comics had a significant effect on Junior High School performance. As a result, the hypothesis "There is no significant effect of the used E-comics on Junior High School performance" is not supported. Using comics in economics lessons will enable students to find a harmony between their everyday life and school experiences. By combining visual information with verbal explanations, the permanence of the information acquired by students will increase, and they will participate more actively in social studies lessons using this teaching tool.

## Recommendations

In the light of the findings of this study, the following are recommended:

1. Teachers in Social Studies may take necessary action regarding the use of comics as other alternative learning materials that can be used for students' education.

2. The School administrators may adopt the developed learning materials in teaching Social Studies.

3. Since E-comics cover only selected topics in Social Studies 9 (Economics), E-Comics could be reconstructed and utilized by other subject areas.

4. School administrators may raise the younger generation's awareness of the importance of developing learning materials such as E-Comics for very interesting, fun, and factual information.

5. Schools must encourage students to read an E-Comics to improve their comprehension and retention to study their lesson in other subject areas.

6. Administrators shall conduct training and seminars on valid and effective construction and production of E-Comics not only for Social Studies but for other areas as well.

7. Teachers, considering their contribution to the education and training process, it is recommended to include educational comics in different subject areas, especially in social studies.

8. Researchers, teachers, and academics may conduct deeper and wider research on the types of comics, adopting them into educational settings to different educational theories and practices.

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