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**EFFECT OF NARRATIVE-BASED TEACHING METHODS ON PUPILS'  
ACQUISITION OF CRITICAL THINKING SKILLS IN LAGOS STATE, NIGERIA**

**ISIANI U. E. , SOPEKAN, S. O., & MANUEL M. N**

*Department of Social Sciences Education, Faculty of Education, University of Lagos, Akoka,  
Nigeria*

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**EFFECT OF NARRATIVE-BASED TEACHING METHODS ON PUPILS' ACQUISITION OF CRITICAL THINKING SKILLS IN LAGOS STATE, NIGERIA**

**ISIANI U. E. , SOPEKAN, S. O., & MANUEL M. N**

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**Abstract**

*This paper investigated the effect of narrative-based methods on learning outcomes in critical thinking skills among primary school pupils in Lagos State, Nigeria. Three research questions and three hypotheses guided the study. This study employed a pre-test, post-test control group quasi-experimental research design. The sample size for the study was seventy-four participants. A researcher-designed instrument titled "Holistic Critical Thinking Scoring Rubric on Global Citizenship Concepts-(HCTSRGCC)" was used to collect data from participants using interview technique. The data collected were analysed using mean, standard deviation and independent t-test at 0.05 level of significance. The results revealed among others that: the use of narrative-based teaching methods in the form of story and role-play has positive effect on pupils' acquisition of critical thinking skills at primary school level. The effect of gender on critical thinking skills after using the narrative-based teaching methods was not significant. The paper concluded that the use of narrative-based teaching methods has significant effect on pupils' acquisition of critical thinking skills. The study recommended among other things that teachers should employ teaching methods which focus on the process of learning rather than the content such as narrative-based teaching methods (role play and storytelling methods) for effective classroom delivery to aid pupils' development of critical thinking skills. Early childhood educators should be trained on the use and application of narrative-based teaching methods during instruction.*

**Introduction**

Fostering critical thinking abilities has become crucial in the ever-changing context of 21<sup>st</sup> century education. This is since critical thinking is not only a key study skill to meet curriculum objectives, but it also enhances learner's capacity to think independently and make appropriate decisions in real-life scenarios, equip them for life-long learning and engaged citizenship. To navigate the

complexities of modern society, individuals must possess the necessary competencies, mindset and knowledge to analyze various viewpoints, value diversity, resolve issues, self-manage, and coexist harmoniously with others and the environment. This probably underscores the inclusion of global citizenship as part of target 4.7 of the United Nation's Sustainable Development Goals. Global citizenship education advocates that schools should focus more on producing learners that have the capacity to think and act for a more just, peaceful, tolerant and inclusive society, rather than mainly focusing on reading, writing, and math skills (UNESCO, 2018). Similarly, a key goal of education, as outlined in the National Policy on Education, is to lay the foundation for the cultivation of critical and analytical thinking skills, to foster the development of sound and effective citizens (NPE, 2013).

According to UNESCO (2014) Global citizenship education recognizes the relevance of education in understanding and resolving global issues in their social, political, cultural, economic and environmental dimensions. This requires that education should be relevant to the realities of the learner to foster in learners the skills for dealing with the challenges and opportunities posed by globalization. Accordingly, Pescatore (2007) averred that citizens must be able to think critically about what they read and see, and their responses must be such that the society is positively transformed before social change can occur in any given country. Little wonder, Thompson (as cited in O'Reilly, Devitt & Hayes, 2022) was emphatic that critical thinking skill is the most important skill set schools should develop in learners.

Critical thinking skills as identified by Blooms Taxonomy refers to higher-order thinking skills which require learners' ability to develop or recognize an argument and make use of available evidence to support the argument. In addition, learners are expected to draw reasonable conclusions based on the evidence and use the gathered information to solve problems. The concept of critical thinking, as defined by Facione (1990), comprises six cognitive abilities: interpretation, analysis, evaluation, inference, explanation, and self-regulation. According to Alsaleh (2020), critical thinking skill is a significant determinant of high-quality learning in students. Shakil, Karim, Niazi, Aslam and Khan (2021) argued that thinking which is based on critical cognition of the mind is beneficial to man in all areas of life and it is essential for all human endeavours. Rainbolt and Dwyer (2012) defined critical thinking as the skill of making a decision based on the right reasons. Birjandi and Alizadeh (2013) defined critical thinking as a deliberate

and self-regulated process of making judgments that leads to interpretation, analysis, evaluation, and inference. Similarly, Alsaleh defined critical thinking as a comprehensive range of abilities and traits that support and delineate continuous learning throughout one's life. Critical thinking skill refers to the capacity of learners to engage the cognitive processes of the mind in order to develop structured and effectively managed systems for living. According to Facione and Facione (1994), critical thinking can be defined as the deliberate and thoughtful process of making unbiased judgments about what to believe or what actions to take.

Studies in neuroscience have informed us that development is most rapid in childhood. During this stage, the basic principles and beliefs that shape our fundamental attitudes and values are established (Siraj-Blatchford & Samuelsson, 2015). Gever, Tunca, Boluwatife, Nwogbo, Chinweobo-Onuoha, Ugwuoke, and Talabi, (2021) argued that it is more advantageous to cultivate cognitive abilities, such as critical thinking, during childhood, which is a crucial period of development. This is because O'Reily et al. (2022) has highlighted that critical thinking is important in the early years firstly because learning requires the need to grasp information and also the ability to sieve information due to the numerous information at ones' disposal; and also, that the quality of life depends on the quality of ones' thinking. However, they also submitted that the most common characteristics of critical thinking explored in young children are reasoning skills and problem solving.

From the foregoing, it is crucial for students to develop critical thinking skills to enhance their learning abilities in the classroom and to effectively solve problems, make well-informed decisions, and foster healthy relationships as they mature, ultimately contributing to the development of a sustainable society. To cultivate proficient critical thinkers, it is imperative to integrate critical thinking into the curriculum content and teaching methodologies, ensuring a systematic progression across all grade levels (Alsaleh, 2020). Consequently, pupils can be taught how to become critical thinkers through learner-centred, engaging and interactive methods such as narrative-based methods (storytelling and role-play) which can enhance their thought processes thereby increasing learning outcomes in schools. This may be why Alsaleh argued that in order to teach critical thinking skills, the teachers should choose strategies that can help foster such skills in children.

In a study which examined the effectiveness of narrative techniques in enhancing self-regulated learning (SRL) and critical thinking skill through narrative-based approaches among first year college students, the study conducted by Rosário, Núñez, Magalhães, Fuentes, Magalhães, and Busing. (2019) demonstrated that the use of story-tool is effective in enhancing self-regulated learning strategies, critical thinking abilities, and academic achievement among college students. In another study involving 470 out-of-school nomadic children in Northern Nigeria by Gever et al. (2021), an intervention strategy using interactive television instruction was found effective in improving the critical thinking skills and disposition of out-of-school nomadic children. In a study conducted by Mena Araya (2020), two learning units were developed and implemented in a Costa Rican elementary school to teach critical thinking skills in the context of citizenship education. The instructional materials used included animated films, digital comic strips, and thinking tools. The study found that students who participated in the learning units expressed a higher level of thinking skills the stories they created themselves. In another study, Rashid and Qaisar (2017) found that role play activity helped participating students to develop critical-thinking skills because roleplaying allowed them to apply their knowledge by engaging them in various real-life scenarios. Also, Mao, Cui, Chiu and Lei (2021) concluded a meta-analysis to determine the effect of game-based learning on student critical thinking. The result showed role-playing game to have the highest significant positive effect on critical thinking.

### **Statement of the Problem**

Development of critical thinking skills in pupils has become imperative in the present era marked by increased interconnectedness and information explosion. Despite that, these important skills are not highly emphasized at the primary school level. Most of what is taught and tested at this level are pupils' ability to comprehend and recall (Okunnuga, Awofala, & Osarenren, 2020). Igwe (2021) lamented that “critical thinking skills feature too little and too late in the course of education” in Nigeria as this skill set is not taught in primary and secondary schools. This explains the dearth of scholarly investigation on the development of critical thinking abilities in primary school pupils in Nigeria. More so, the prevailing conventional approach to teaching lacks the ability to cultivate critical thinking skills in learners. However, if these skills are not properly developed in pupils, it may breed citizens who lack the capacity to think and act towards a sustainable society and future. These necessitate the use of appropriate methods for teaching critical thinking skills at the primary school level. Thus, the use of narrative-based methods such

as storytelling and role-play teaching methods are crucial for teaching pupils at the primary school level as these methods have the tendency to enhance the thought processes of pupils.

### **Research Questions**

These questions guided this paper:

1. What is the effect of treatment (storytelling teaching method) on pupils' acquisition of critical thinking skills at primary school level?
2. What is the effect of treatment (role-play teaching method) on pupils' acquisition of critical thinking skills at primary school level?
3. To what extent does gender difference exist in the post-test mean scores of pupils in the treatment groups on critical thinking skills at primary school level?

### **Research Hypotheses**

The following null hypotheses were formulated:

Ho1: There is no significant effect of treatment (storytelling teaching method) on primary pupils' acquisition of critical thinking skills.

Ho2: There is no significant effect of treatment (role-play teaching method) on primary pupils' acquisition of critical thinking skills.

Ho3: There is no significant main effect of gender on primary pupils' acquisition of critical thinking skills.

### **Literature Review**

The systematic literature review conducted by O'Reilly et al. (2022) indicates that classroom interactions, which involve dialogue and questioning techniques, the use of thinking language, and story-based approaches, play a significant role in promoting critical thinking skills in preschool children. Interestingly, Shubina and Kulakli (2019) noted that current literature has not thoroughly investigated the connection between gender and critical thinking. Few studies that have investigated the relationship had conflicting results. In a study aimed to measure the validity of critical thinking instruments and determined the differences in critical thinking skills in terms of gender and knowledge group, among 285 of first-year students who took Indonesian language courses, there was no significant difference in students' critical thinking skills in gender differences (Marni et al., 2020). In another study titled "Critical thinking and Gender differences in academic self-regulation in Higher Education", Bagheri and Ghanizadeh, (2016) investigated the

relationship between critical thinking and self-regulation, as well as the impact of gender on these constructs among 120 EFL university learners who were selected according to a convenience sampling. There was no significant relation found between gender and critical thinking. However, Zetriuslita, Ariawan, and Nufus, (2016), gender differences were significant at higher critical thinking ability, while at moderate or low-level critical thinking ability, the difference according to gender was not significant.

It is noteworthy that the studies reviewed above are from the developed countries which connotes that improving critical thinking abilities in primary schools has not received adequate attention in countries like Nigeria. No study was seen to the best of the author's knowledge investigating the use of narrative-based methods in the form of storytelling and role-play in fostering critical thinking on pupils in Nigeria.

Stories and how they are presented may have great impact on the thought process and actions of future citizens (Agnello et al., 2019). Narrative teaching methods utilize stories or narratives as a pedagogical tool to actively involve students, effectively communicate information, and promote learning. Here, stories, whether they are fictional or real, told or enacted, serve as the fundamental means of instruction. Narrative-based teaching methods place emphasis on the process of learning rather than the content which aligns with the principles of active and engaged learning.

In the reviewed literature, narrative-based approaches, whether experienced through storytelling or role-play were found to improve critical thinking skills. This is possible because going by the view of Dewey that critical thinking is a process that begins because there is a problem to be solved (Alsaleh, 2020), stories take listeners on a journey, extends their imaginations, encourage dialogue and challenge their thought processes. When stories are used as tools to facilitate learning, pupils are quick to view themselves as the characters in the story. It helps learners to consider how and what they would have done to be in the shoes of a favourable character or avoid the fate of the bad one. Narrative-based approaches facilitate these mental processes to arrive at a desired solution which is needed for a peaceful, just and inclusive society.

## **Methods**

The study adopted a pretest posttest control group quasi-experimental research design. This design was used because random assignment of participants to experimental and control groups was not

possible as primary school classes come as intact classes. The population of the study consisted all the primary five (5) pupils in the in 1015 public schools in Lagos State (Lagos State Ministry of Education, 2022). The sample for the study consisted of seventy-four (74) primary five (5) pupils found in the three intact classes randomly selected from three schools under Ikeja Local Government Education Authority. The small sample size was due to the in-depth interview technique used for data collection that enabled the researcher obtain detailed information so as to assess respondents' critical thinking abilities. A researcher-designed instrument titled "Holistic Critical Thinking Scoring Rubric on Global Citizenship Concepts-(HCTSRGCC)" was used for data collection through in-depth interview. HCTSRGCC consisted of 10 items. Responses from participants were assessed based on a-3 point rating scale: Strong (3), Acceptable (2) and Weak (1).

The rating criteria were:

- i. The pupil demonstrates an ability to evaluate the causes,
- ii. The pupil demonstrates an ability to evaluate the consequences,
- iii. The pupil clearly draws conclusions that are well-supported by the available evidence; and
- iv. Pupil clearly suggests ways of solving the problem where applicable.

The face, content and construct validity of the instrument were carried out by two experts in Measurement and Evaluation in the Department of Educational Foundations and another two experts in Early Childhood Education in the Department of Social Sciences, Faculty of Education, University of Lagos, Akoka. These experts confirmed the instrument to be valid. However, Kappa statistics were used to establish the inter-rater reliability of the instrument and a reliability coefficient of 0.79 was obtained. The instrument was considered reliable as George and Mallery (2003) established that a coefficient between 0.7 and 0.8 is deemed acceptable.

**Pre-test administration phase:** In order to establish baseline measurements, a pre-test was conducted for the treatment and control groups before the commencement of the intervention. 74 copies of the research instrument were administered on all the participants. The pretest lasted for four days because of the time the schools allowed for it.



**Treatment phase:** After the administration of the pre-test, the students in the experimental groups were taught selected GCED concepts of respect for diversity, empathy, assertiveness, self-control and consequences of our actions through narrative-based teaching methods (Storytelling and role-play). The treatment package included narratives on local and global issues formed from GCED themes of human rights, respect for diversity, sustainability, conflict and peacebuilding and globalization to teach the selected concepts that can equip learners with the knowledge, attitude and skills for a sustainable society. The first treatment group was taught using storytelling teaching method with particular emphasis on the researcher employing techniques of storytelling such as change in tone of voice to signify mood and different scenarios; while the second treatment group was taught using role play teaching method where pupils were given roles in the stories to act out. The treatment lasted for six weeks. The control group was taught the same topics as treatment group using conventional teaching method (lecture method). The classes were held twice a week (Tuesdays and Thursdays) for a duration of forty minutes in all three schools.

**Post-test administration phase:** After the treatment, copies of the instrument were administered again to both the experimental and control groups to assess potential improvement in their critical thinking skills. The items in the post-test were the same as the items in the pre-test. Subsequently, the data collected were analysed using both descriptive and inferential statistics. The research questions were addressed using mean and standard deviation, while all the hypotheses were tested using independent t-test at 0.05 level of significance.

## Results

**Research Question One:** What is the effect of treatment (storytelling teaching method) on pupils' acquisition of critical thinking skills at primary school level?

**Table 1:** Pre-test and Post-test mean scores of Pupils in the treatment (Storytelling Teaching Method) and control groups in critical thinking skills

Variables	N	Treatment Group (Storytelling Teaching Method)	N	Control Group (Conventional Method)		
Types of Tests		Mean	S. D	Mean	S. D	
Pre-test score	21	11.45	3.57	27	10.70	3.08
Post-test score	21	21.42	1.99	27	11.71	1.56
<b>Mean Differences</b>	-	9.97	-	-	1.01	-

Table 1 shows that the post-test mean scores of pupils taught using the storytelling teaching method was 21.42; while that of the pupils using the conventional method was 11.71. Also, the difference between the pre-test and post-test means scores of the pupils taught using the storytelling teaching method was 9.97; while the difference between the pre-test and post-test means scores of the pupils taught using conventional method was 1.01. The mean difference between the post-test scores of the pupils in the experimental group and control group for critical thinking skills is 8.96. Based on this result the answer to research question one is that the use of storytelling teaching method has positive effect on pupils' acquisition of critical thinking skills at primary school level.

**Research Question Two:** What is the effect of treatment (role-play teaching method) on pupils' acquisition of critical thinking skills at primary school level?

**Table 2:** Pre-test and Post-test mean scores of Pupils in the treatment (role-play teaching method) and control groups in critical thinking skills

Variables	N	Treatment Group (Role play Teaching Method)	N	Control Group (Conventional Method)		
Types of Tests		Mean	S. D	Mean	S. D	
Pre-test score	26	12.07	3.65	27	10.70	3.08
Post-test score	26	22.81	2.02	27	11.71	1.56
<b>Mean Differences</b>	-	10.74	-	-	1.01	-

Table 2 shows that the post-test mean scores of pupils taught using the role play teaching method was 22.81; while that of the pupils taught using conventional method was 11.71. Also, the difference between the pre-test and post-test means scores of the pupils taught using storytelling

teaching method was 10.74; while the difference between the pre-test and post-test means scores of the pupils taught using conventional method was 1.01. The mean difference between the post-test scores of the pupils in the experimental group and control group for critical thinking skills is 9.73. Based on these results, the answer to research question two is that the use of role play teaching method has positive effect on pupils' learning outcomes in critical thinking skills at primary school level.

**Research Question Three:** To what extent does gender difference exist in the post-test mean scores of pupils in the treatment groups on critical thinking skills at primary school level?

**Table 3: Difference in the post-test mean scores of male and female pupils in the treatment groups on critical thinking skills**

Gender	N	Mean	S. D	Mean Difference
Male	22	22.68	2.03	0.06
Female	25	22.74	2.05	

Table 3 shows the differences in the post-test mean scores of male and female pupils on critical thinking skills in the treatment groups only. The mean difference in the post-test scores of the male and female pupils exposed to the treatment was 0.06. This is an indication that no significant difference exists in the male and female pupils' acquisition of critical thinking skills after being taught using the narrative-based methods (storytelling and role-play teaching methods). Based on this result, the answer to research question three is that there is no significant gender difference in the post-test mean scores of pupils in the treatment groups on critical thinking skills at primary school level.

### Test of Hypotheses

**Hypotheses One:** There is no significant effect of treatment (storytelling teaching method) on pupils' learning outcomes in critical thinking skills at primary school level.

**Table 5: Significant effect of treatment (storytelling teaching method) on pupils' acquisition of critical thinking skills**

Types of Tests	N	$\bar{x}$	Standard Deviation	T	Sig.
Pre-test	21	11.45	3.57	19.374**	.001
Post-test	21	21.42	1.99		

\*\*Significant

Table 5 shows that the t-test statistics calculated was 19.374 with a returned p-value of 0.001. Since, the returned p-value of 0.001 is less than the level of significance (0.05); i.e.  $p < 0.05$ , there is significant effect of treatment (storytelling teaching method) on pupils' learning outcomes in critical thinking skills at primary school level.

**Hypotheses Two:** There is no significant effect of treatment (role-play teaching method) on pupils' acquisition of critical thinking skills at primary school level.

**Table 6: Significant effect of treatment (role-play teaching method) on pupils' acquisition of critical thinking skills**

Types of Tests	N	$\bar{x}$	Standard Deviation	T	Sig.
Pre-test	26	12.07	3.65	22.998**	.000
Post-test	26	22.81	2.02		

*\*\*Significant*

Table 6 shows that the t-test statistics calculated was 22.998 with a returned p-value of 0.000. Since, the returned p-value of 0.000 is less than the level of significance (0.05); i.e.  $p < 0.05$ , there is significant effect of treatment (role-play teaching method) on pupils' acquisition of critical thinking skills at primary school level.

**Hypotheses Three:** There is no significant gender difference in the post-test mean scores of pupils the treatment groups on critical thinking skills.

**Table 6: Significant gender difference in the post-test means scores of pupils the treatment groups on critical thinking skills**

Gender	N	$\bar{x}$	Standard Deviation	T	Sig.
Male	22	22.68	2.03	.144**	.127
Female	25	22.74	2.05		

*\*\*Not Significant*

Table 6 shows that the t-test statistics calculated was 0.144 with a returned p-value of 0.127. Since, the returned p-value of 0.127 is greater than the level of significance (0.05); i.e.  $p > 0.05$ , there is no significant gender difference in the post-test mean scores of pupils in the treatment groups on critical thinking skills.

## **Discussion of Results**

The study investigated the effect of using narrative-based teaching methods in form of storytelling and role-play on primary pupils' acquisition of critical thinking skills in Lagos State, Nigeria. The outcome of the study showed significant improvement observed in the critical thinking skills of participants in the treatment groups as measured using the HCTSRGCC. Thus, the intervention including narrative-based teaching methods showed positive effects on acquisition of critical thinking skills of primary school children in the treatment groups.

Analysis of research question one revealed that the use of storytelling teaching method has positive effect on pupils' acquisition of critical thinking skills at the primary school's level. This finding aligns with that of Rosário et al. (2019) which found that story-tool is effective for improving self-regulated strategies, critical thinking skills, and academic performance among college students. Also, Sharma (2018) asserted that storytelling is an interactive and cooperative activity, tool for exploring language skills and verbal expression, tool for remembering, uses different types of language conventions to create more realistic and lifelike stories, and a tool for entertainment. Since all these skills require critical thinking skills, using storytelling teaching method has the tendency to affect pupils' acquisition of critical thinking skills positively.

The analysis of responses to research question two showed that the use of role-play teaching method has positive effect on pupils' learning outcomes in critical thinking skills. This finding agrees with that of Rashid and Qaisar (2017) who found that role-play activities can help participating students to develop critical-thinking skills and allow them to apply their knowledge by engaging them in various real-life scenarios. This is also in line with the findings of Mao et al. (2021) that role-playing game had highest significant positive effect on critical thinking after a meta-analysis to determine the effect of game-based learning on critical thinking.

Analysis of research question three revealed that there is no significant difference in the male and female pupils' acquisition of critical thinking skills in the treatment groups. This implies that exposing the participants to treatments (use of storytelling and role teaching methods) did not bring about any significant difference in male and female pupils' critical thinking skills. The result corroborates the findings of Marni et al. (2020) and Bagheri and Ghanizadeh, (2016) who reported that there is no significant relation found between gender and critical thinking after being exposed to interventions.

## Conclusion

The current study sought to ascertain the effect of narrative-based teaching methods in the form of storytelling and role-play on the acquisition of critical thinking skills among primary school pupils. The study found that the use of narrative-based teaching methods (storytelling and role teaching methods) has significant effect on pupils' acquisition of critical thinking skills. It is imperative therefore for teachers to ensure the use of teaching methods that are learner-centred, interactive and participatory that enhance the thought processes of learners during lessons.

## Recommendations

Based on the findings of this study, stakeholders should intensify effort at developing critical thinking abilities of primary school pupils by encourage the use of narrative-based teaching methods which has the tendency to foster critical thinking in pupils. Stories, whether told or observed help children to make connections with their own lives. Teachers should use narrative-based teaching methods (role play and storytelling methods) for classroom activities to aid pupils' development of critical thinking skills. It is recommended that childhood educators be trained on the use and application of narrative-based teaching methods to foster thinking skills that will enhance pupils' appropriateness in coping with the demands of our ever-evolving society.

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