

Innovations

Enhancing Critical Thinking through Handcraft Instructions in Mother Tongue among Primary School Pupils in Okigwe Education Zone of Imo State

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Abstract: *The study was undertaken to find out the possibility of enhancing critical thinking through handcraft instructions in mother tongue among primary school pupils in Okigwe education zone of Imo state, Nigeria. The study adopted a quasi-experimental research design with a sample of sixty primary five pupils separated into two equal intact classes within Ahara Metropolis. Pupil's arts and craft module for primary 4-6 was used in the instructions for both the experimental group (taught using Igbo) and the control group (taught using English language). Two separate instruments tagged 'Teacher Made Assessment Test' (TMAT) and 'Researcher Made Assessment Test' (RMAT); each with a reliability of 0.74, were used for the pre-test and post-test data collection respectively. The pre-test was administered before the instruction, while the post-test was administered immediately after the instruction period. The duration of instruction lasted for seven weeks. Findings of the study showed that pupils in the experimental group developed higher critical thinking abilities and acquired better processing skills using local raw materials than participants in the control group. This was reflected in a post-test mean score which increased by 15.64 against the pre-test score in the experimental group; while the mean score dropped by 0.81 against the pre-test score in the control group. The study concludes that the use of mother tongue in instructional delivery spurred up higher level of critical thinking and better understanding in the experimental group than English Language used for participants in the control group. Based on these findings, the study recommends that mother tongue should be used as a medium of instruction in art/craft based subjects in primary schools.*

Key words: *Art, Craft, Critical thinking, Instruction, Mother tongue,*

Introduction

The challenges of the current century are enormous, yet on daily basis, other new ones keep emerging. The solution to these myriad of problems facing the contemporary society lies with the educational sector, to educate pupils and students who will be able to confront these challenges by providing the much needed solutions. In view of the above, there is a need for an overhaul of the current educational architecture, especially in developing countries like Nigeria, to inculcate the 21st century skills needed by pupils and students to thrive. One of these skills, which is often overlooked at the elementary school level is critical thinking. Critical thinking is strongly advocated in schools, especially at the primary/elementary schools level, which forms a greater part of the child's formative age (Borrosco-Tanoira, 2017; Prameswari et al., 2018; Omeke et al., 2021). Well-prepared pupils have the potential to become agents of change in the future. These young people possess the ability to exert a beneficial influence on their environment, shape the course of events to come, comprehend the motivations, behaviours, and emotions of others, and foresee the immediate and lasting outcomes of their own actions. As students face unfamiliar and changing situations in the future, they require a diverse set of abilities, such as cognitive and metacognitive skills (e.g., critical thinking, creative thinking, learning how to learn, self-regulation); social and emotional skills (e.g., empathy, self-confidence, collaboration); and practical and physical skills (e.g., information and communication technology) (Trede, 2015; Kaepfel, 2021). These talents should be thoroughly incorporated into educational curricula.

Critical thinking is a complicated process of reflective, autonomous thought aimed at making acceptable conclusions by means of analysis, synthesis, identification of issues and their solutions, concluding and evaluation of the result. According to Shedrack and Atoukuds (2023), critical thinking is an intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and/or evaluating information gathered through careful observation, experience, reflection, reasoning, or communication with a view to giving an accurate judgement. Studies had shown that critical thinking balances other modes of thinking because it is deep sited and heralds innovations in every areas of human endeavors (Apeh et al., 2014; Omeke et al., 2021). Although critical thinking may vary according to motives underlying it, in the context of learning, critical thinking is effective in scientific exploration, handcraft and accurate experimentation. In view of this, formal educational systems emphasized the need to encourage curiosity, inventiveness, initiative, ingenuity and scientific attitude towards problems at the earliest stage of the education of the child (Nwosu, et al 2021). Critical thinking not only creates new ideas, it motivates

students to be absorbed in their learning more-driven to acquire new useful skills of accomplishment. These skills are known to build foundation for cognitive development explained in logical reasoning. The language gap created by the use of English language, especially at the foundational stage (basic one to three), where the National Policy on Education stated emphatically that it must be in the mother tongue, is the first step to be addressed in the absence of critical thinking in the Nigerian child.

The National Policy on Education, 2014 edition understood this fact hence, recommended the use of mother tongue in teaching pupils in Basic 1 to 3 in primary schools. The formative years of 5 to 9 are considered very essential in inculcating habits and virtues in children. It is therefore coherent to adopt basic 4 to 5 as ideal in inculcating critical thinking in pupils in primary schools in Okigwe Education Zone. Moonsamy (2014) developed and demonstrated instances of mediated classroom instruction on critical thinking skills. The model developed the correct use of the language of Mathematics and develop an understanding of number vocabulary and number concept among grade I pupils. This model was adopted in the current study in teaching Arts/Craft instruction, a subject taught in basic 4 to 6. The teacher mediates the concepts using resources which are available within the children learning environment. The concepts, practical application and technical manipulation were taught in mother tongue to the treatment group. In modest specification, the study aligned basic practical concepts to critical and deep reflection on their use in their environment.

The problem of the system is that the dictates of the National Policy on Education (2013) in using the language of the environment is hardly implemented. Most primary schools instead, either teach pupils in basic 1 to 3 with English Language or combine English Language with the language of the environment thus creating confusion in children. Vygotsky's social cultural mediation theory have exposed the reality of mother tongue in mediations and it will be best if children in basic classes 4 to 3 are also taught in mother tongue to revelationize their thinking apparatus. The present study investigated critical thinking vis-à-vis mediating in instructions in Arts/Craft through mother tongue.

The study adopted respondents from primary 4 to 6. The subject taught was Arts/Craft. The study was carried out in Ahara, Okigwe Education Zone, with the aim of investigating the effect of mother tongue in mediating critical thinking among primary school pupils in Ahara, Okigwe Education Zones. Specifically, the study sought to determine the mean achievement scores in critical thinking of pupils taught Arts/Craft in mother tongue at post-test and also ascertain the mean achievement scores in critical thinking of pupils taught Arts/Craft in English Language at post-test.

Methodology

The study adopted a quasi-experimental research design adopting pre-test, post-test and control arrangement. The study was carried out in Okigweeducation zone of Imo State, Nigeria. The sample of the study was sixty primary school pupils in Basic 5. The language of instruction in Basic 5 is English Language. They were adopted for the studyso that the impact of mother tongue may be observed in the study. Purposive sampling technique was used to select two schools in Ahara metropolis to participate in the study because schools were at the centre of the education zone and accessible to researchers. Two instruments: Teacher Made Assessment Test (TMAT) and Researcher Made Assessment Test (RMAT)in Arts/Craft for 1st term; each with a reliability of 0.74, were used for the purpose of data collection. Pupil’s scores were recorded as pre-test after the administration of TMAT. RMAT was employed at post-test after the instructions had been carried out in both the treatment group using mother tongue (Igbo language) and the control group using English Language. The instructional module in Arts/Craft approved for basic 4 and 6 was used for instruction.Pupils were divided into two groups, with each group consisting of thirty pupils, making a total sample size of sixty pupils.Group A (treatment group) and Group B (control group) where located in two different primary schools of about 3 kilometers apart. The instruction lasted for eight weeks before the administration of the test. A post-test assessment test was administered at the end of the instructional period. The post-test was administered to determine the effect of language of instruction on the performance of the two groups.

Results and Discussions

Table 1: Mean, standard deviation and gain scores of pupils in Group A at pre-test and post-test assessment period

| Variable | n | Pre Test | | Post Test | | Gain Score |
|--|----|----------|------|-----------|------|------------|
| | | Mean | Std | Mean | Std | |
| Group A (Arts/Craft in mother tongue) | 30 | 52.77 | 1.02 | 68.45 | 1.17 | 15.64 |
| Group B (Arts/Craft in English Language) | 30 | 53.42 | 1.07 | 52.61 | 1.05 | 0.81 |

The results presented in Table 1 shows that the participants in Group A (Arts/Craft in mother tongue) obtained a mean score of 52.77 at pre-test and 68.45 at post-test. The mean score at post-test is 15.64 points greater than the pre-test mean scores. Similarly participants in Group B (Arts/Craft in English Language) had a mean score of 53.42 at the pre-test and 52.61 as the post-test scores. The mean score at post-test was lower with 0.81 points to what they had at obtained at their pre-test.

Hypothesis: There is no significant difference in the mean achievement score of pupils in Group A and Group B at post-test assessment period

Table 2: t-test analysis on mean achievement score of pupils in Groups A and B at post-test assessment

| Variable | n | Mean | Std | df | L.S. | t _{cal} | t _{crit} | Decision |
|------------------|----|-------|------|----|------|------------------|-------------------|-------------|
| Mother tongue | 30 | 68.45 | 1.17 | 58 | 0.05 | 17.41 | 1.960 | significant |
| English Language | 30 | 52.61 | 1.05 | | | | | |

The t-test result presented on Table 2 shows that there is a significant difference between the mean scores of Group A (Arts/Craft in mother tongue) and Group B (Arts/Craft in English Language) participants at post-test. The significant difference was triggered by the wide margin in mean scores between the groups resulting from the mother tongue during the teaching of Arts/Craft to pupils in group A. The null hypothesis of no significant difference was rejected because, the calculated t-value was greater than the table value at 58 degrees of freedom.

Results in Table 1 showed an increase in the mean achievement score at the post-test for students taught using the native language (Igbo). This implied that the language of instruction was effective in heralding in-depth understanding and critical thinking in the pupils during the arts/craft lessons. The pupils better understood the concepts which involved the manipulation of resources in their local environments, thus implying a higher level of thinking and application. This finding is supported by Ohuakanwa and Otelehi (2023) who showed that mother tongue gave concrete meaning to concepts during instructions than foreign language. The concrete meanings conveyed by the native language enhances deep thinking as more of the mental processing of information is done in a person’s native language. The difference in the mean achievement score between the two treatment groups showed a difference in thinking and application of knowledge that arose as a result of language of instruction. Native language

teaching approach helped the pupils to have a better understanding than those taught with a foreign language. Though English language is the formal language of instruction in Nigeria, there may be some related local concepts that may lack a direct translation into the official language of instruction. Thus, to improve pupil's academic performance in trade related courses, there is need for the pupils to be taught in their native language(language of the environment), which relates to their basic day to day life.

Findings of the study also showed a possibility of association between the language of instruction and resources/materials used for a lesson. In the study, most of the art/craft materials were sourced from within the school environment. These included raffia palm, palm tree, local ferns, implements, obeche, horn bars and more. Mostpupils were familiar with these items in their native language, and when their uses are conveyed in their native language, it enhanced a better understanding than when conveyed in English Language. This finding is in line with that of Borrosco-Tanoira (2017); Prameswari et al (2018) and Omeke et al (2021) who independently asserted that the use of language of nativity triggers a higher level of correlation with the environment, especially with children in their formative years compared to foreign language. This is because the pupils can critically evaluate and process what is being taught. The findings of this study has implications for the teaching of art and trade based courses in our schools as teachers should be encouraged as much as possible to introduce the use of mother tongue to enhance an easy understanding of the lessons being taught.

Conclusion

The study concludes that teaching can only be made more interesting and rewarding when learners are motivated through stimulations, novelty, curiosity and task challenging engagements. The use of mother tongue stands out clearly as a motivator towards children's academic achievement. The findings of the present study has shown that craft and trade related subjects should be taught in the language that is more familiar to the pupils. The study has also lend its credence to the call that the use of mother tongue should be encouraged at the elementary and basic levels of education.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Language of nativity is effective in inculcating critical thinking in children, especially in trade related fields. It is therefore important to adopt mother tongue in giving out instructions to children at the basic school levels.
2. At their formative ages, it is important forchildren to have developed brain functions through critical thinking. If children are taught how to observe,

analysis, evaluate and give out decisions earlier in their language of nativity, it may facilitate positive learning outcomes in all areas of their future life.

3. Learning of arts/craft in language of nativity should be encouraged in elementary schools to promote confidence, entrepreneurship and self-reliance among the pupils. This will inculcate the habit of using their hands to manipulate through forms generated by the brain. This is the only way that the learning process is made complete.

Conflict of Interest

The authors declare that there is no conflict of interest.

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