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EFFECT OF THE 'ICT @ SCHOOL PROJECT' ON THE ACADEMIC ACHIEVEMENT OF STUDENTS AT ELEMENTARY LEVEL

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RESEARCH ARTICLE

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Abstract

This study evaluates the effect of the ICT @ School Project on the academic performance of Class VIII students. The study involved participants or students from class VIII, split into two equal cohorts based on IQ and numbers. One cohort engaged with Computer-Assisted Learning (CAL) methodologies under the ICT @ School Project framework, while the control group experienced traditional pedagogical approaches. The principal aim was to quantitatively assess the academic outcomes of students subjected to ICT-enhanced instruction in contrast to those receiving conventional teaching. Pre- and post-intervention assessments were meticulously administered to both groups to evaluate their mastery of the subject matter. The analysis yielded statistically significant disparities in academic achievement, with the ICT @ School Project cohort attaining superior performance metrics compared to their peers in the traditional teaching conditions. These findings corroborate the efficacy of ICT @ School Project, especially CAL as a pedagogical strategy to augment student learning, particularly within the elementary education sphere. This research underscores the transformative potential of technology integration in educational settings, advocating for its adoption to enhance learning outcomes. Furthermore, it offers critical insights for educators and policymakers contemplating the operationalization of the ICT @ School Project across diverse educational infrastructures. Additional longitudinal studies are warranted to investigate the enduring effects and scalability of ICT initiatives in various contexts.

Keywords: *Effect, ICT @ School Project, Achievement, Elementary Level, CAL*

Introduction

The ICT @ School Project is a comprehensive, technology-driven initiative designed to enhance the academic support framework for educators, facilitating a more engaging and enriching learning environment for students. This project aims to integrate advanced Computer Education tailored for both learners and instructors. Since its inception, the ICT @ School Project has been implemented across 2000 schools in West Bengal under the broader ICT initiative, in collaboration with IL & FS Education and Technology Services Limited.

IL&FS Education & Technology Services Ltd. is dedicated to fostering educational equity and generating significant societal impact. Their mission goes beyond commercial interests; they are committed to transforming the educational landscape. Through innovative pedagogy and cutting-edge technology, they aim to elevate the quality, accessibility, and delivery of education to diverse populations. Collaborations with governmental bodies, educational institutions, and international agencies amplify their outreach and further their goal of achieving equity in education. The National Education Policy (NEP) 2020 has also emphasized on the ICT integration in the process of learning for holistic development of students.

Review of related literature

Cener, E., Acun, I., & Demirhan, G. (2015). In their study entitled "The impact of ICT on pupils' achievement and attitudes in social studies", they found that ICT have a positive effect on their achievement. Teaching social studies with ICT does not have any statistically significant effect on pupils' attitudes toward social studies lessons. Ebire, F. A. (2020), in his study entitled "Teachers perception of the use of ICT as an instructional tool in Science and mathematics in nigeria secondary education"; revealed that perceived usefulness (PU) had the strongest impact on Behavioral intention (BI) and Attitude toward use (AT) of ICT tools by teachers. The findings of this study also revealed that outdated government policies to support ICT use in science and mathematics posed a big challenge, and more consequential is the inadequate skills of teachers in using ICT tools. The study therefore recommends that the government should endeavour to put in place adequate training and retraining of teachers on how to effectively fuse and use ICT tools in teaching mathematics and other science subjects in the country of Nigeria. Hussain, I.,

Suleman, Q., & Shafique, F. (2017) in their study on "Effects of Information and Communication Technology (ICT) on Students' Academic Achievement and Retention in Chemistry at Secondary Level" found that information and communication technology positively affects students' academic achievement and retention and ICT was found more compelling, effective and valuable in teaching of chemistry when contrasted with conventional techniques of teaching.

Objectives of the Study

The objectives of the study are as follows:

1. To study the effects of the ICT @ school project on the achievement of students at the elementary level in connection with the cognitive domain of human behavior.
2. To compare Class VIII students' perceptions and experiences of Computer-Assisted Learning (CAL) methodologies in the ICT @ School Project with their experiences of traditional pedagogical approaches to identify preferences and inform educational practices.

Hypothesis of the Study

The hypothesis of the study in null form as follows:

- $H_0$1: There is no significant effect of the ICT @ school project on the achievement of students at elementary level in connection with the cognitive domain of human behavior.

Research Question

The research question of the study as follows:

(1) How do Class VIII students perceive and experience the integration of Computer-Assisted Learning (CAL) methodologies in the ICT @ School Project compared to their experiences with traditional pedagogical approaches?

Delimitations of the Study

The delimitations of the study are as follows:

- The study was delimited to only one district of West Bengal.
- The study was delimited to only one school.
- The study had been delimited to only one Board i.e. West Bengal Board of Secondary Education.
- The study was delimited to Bengali medium students only.
- The study was restricted to only class VIII of the particular school.

Methodology

In this part of paper the researcher discussed about the research design. The first part of the research specifically focused on studying the effect of the Effect of the ICT @ school project on the Academic Achievement of Students at the Elementary Level, for that the experimental design used here is only a post-test equivalent group design.

Population of the Study: The population of the study are the students of elementary level of government aided schools.

Sample of the Study: Researcher used the purposive sampling method for collection of data which was consisted of total 60 students as a sample, those who are studying at class VIII at Labanhrad School. Kolkata.

Tools used in the Study: Researchers administered the following tools were used for treatment and to measure the dependent variables of the study:

- Raven's Standard Progressive Matrices (SPM-IQ Test).
- Teacher-made achievement test in scholastic areas as Post Test (Class VIII).

Data collection and data analysis method: Data were collected after administration of post test and getting the scores of post test and through the outcome of FGDs'. For analyzing and computing the result of the study the researcher used t-test for computing the results.

Result and Discussion

Objective – 1: To study the effects of the ICT @ school project on the achievement of students at the elementary level in connection with the cognitive domain of human behavior.

Hypothesis – 1: Ho1: There is no significant effect of the ICT @ school project on the achievement of students at elementary level in connection with the cognitive domain of human behavior.

Table 1: Effect of the ICT @ school project on the achievement of students at elementary level in connection with the cognitive domain of human behavior.

	N	Mean	Standard deviation	t- value
Control Group	30	34.2	72.09	2.48
Experimental Group	30	39.2	52.47	1.67(Table Value)

Interpretation: The analysis of Table 1 reveals a computed t-value of 2.48, which is higher than the critical t-value of 1.67 at a 0.05 level of confidence with 58 df. This indicates that there is a significant difference in the achievement between the students of the experimental and control group in the post-test.

The analysis of Table 1 reveals a computed t-value of 2.48, surpassing the critical t-value of 1.67 at a 0.05 level of confidence with 58 df. This indicates a significant difference, leading to the non-acceptance of the formulated hypothesis asserting no significant difference in the achievement in connection with the cognitive domain of human behavior of 8th-grade students. The study suggests a noteworthy distinction in academic achievement, highlighting that students of the experimental group taught through the ICT @ school project outperformed their counterparts, who were taught through the conventional instructional method in the control group. This finding emphasizes the effects of the ICT @ school project for the cognitive development of students at the elementary level.

Objective – 2: To compare Class VIII students' perceptions and experiences of Computer-Assisted Learning (CAL) methodologies in the ICT @ School Project with their experiences of traditional pedagogical approaches to identify preferences and inform educational practices.

Research Question: How do Class VIII students perceive and experience the integration of Computer-Assisted Learning (CAL) methodologies in the ICT @ School Project compared to their experiences with traditional pedagogical approaches?

Interpretation: Thematic Analysis of Students' Perceptions on CAL vs. Traditional Methods.
The discussion revealed valuable insights into the students' engagement, learning preferences, challenges, and overall sentiments toward these teaching approaches.

Key Findings

- *Engagement and Interactivity*: Students expressed high enthusiasm for computer-assisted learning, describing it as "fun," "interactive," and "exciting" compared to traditional methods. They appreciated the use of multimedia elements like videos, animations, and interactive quizzes, which made learning more engaging. Traditional methods, such as textbook-based lectures and blackboard teaching, were perceived as "monotonous" by some students. They noted that these approaches often required passive listening, which sometimes led to reduced attention.
- *Learning Experience and Understanding*: The ICT @ School project was praised for making complex topics easier to understand. Students highlighted that visual aids and simulations helped clarify concepts in subjects like science and mathematics, which were often challenging in traditional settings. Some students felt that traditional methods allowed for deeper teacher-student interaction, as teachers could explain concepts in detail and address doubts immediately. However, they acknowledged that CAL under the ICT @ school project provided instant access to additional resources and self-paced learning.
- *Accessibility and Skill Development*: Students valued the opportunity to develop digital literacy skills through the ICT @ School project. They felt that learning to use computers and educational software prepared them for future academic and professional endeavours. A few students mentioned challenges with computer-assisted learning, such as limited access to computers outside school hours or occasional technical issues (e.g., slow internet or system crashes), which disrupted their learning experience.
- *Preference for Blended Learning*: A significant number of students expressed a preference for a blended approach, combining the strengths of computer-assisted learning and traditional methods. They appreciated the structure and discipline of traditional teaching but wanted more integration of technology to make lessons dynamic. Students suggested incorporating more group activities and projects using computers to enhance collaboration while maintaining the guidance of teachers.
- *Challenges and Suggestions*: Some students suggested increasing the frequency of computer lab sessions and ensuring reliable internet connectivity to maximize the benefits of the ICT @ School project.

The Class VIII students of Labanhrad School perceive computer-assisted learning through the ICT @ School project as a valuable and engaging supplement to traditional pedagogical approaches. While they appreciate the interactivity and clarity provided by computer-assisted learning, they also value the personal interaction and guidance offered by traditional methods. The students advocate for a balanced approach that leverages technology to enhance learning while retaining the strengths of conventional teaching. Addressing challenges such as technical issues and teacher training could further improve the effectiveness of the ICT @ School initiative, ensuring a more enriching educational experience for the students. From the FGD it has been come out that Computer-Assisted Learning (CAL) in the ICT @ School Project as more engaging, interactive, and motivating compared to traditional pedagogical approaches. They report better learning outcomes with CAL but they face challenges like technical difficulties. Traditional methods are seen as simpler yet less stimulating, with a stronger teacher presence. This suggests CAL under ICT @ school project enhances interest and effectiveness, though accessibility remains a key concern.

Conclusion

In the present study the researchers try to find out the effects of the ICT @ school project on the achievement of students at the elementary level in connection with the cognitive domain of human behavior. It has been found that the integration of Computer-

Assisted Learning (CAL) in the ICT @ School Project offers Class VIII students a more engaging and effective learning experience compared to traditional methods, fostering significant achievement in connection with the cognitive domain, motivation towards learning and interactivity. However, addressing technical challenges and ensuring accessibility are crucial for its success while retaining the strengths of teacher-led approaches. CAL holds significant potential to enhance education when balanced with practical support

Educational Implications

1. If the infrastructure is accessible, the study's conclusions would be very beneficial and motivate educators to implement the ICT @ school project in their regular classrooms.
2. The study's conclusions will also help policymakers formulate policies that address current issues and advise the relevant authorities to take the necessary action.
3. The results of the study also give the researchers additional opportunities to investigate and investigate new areas of teaching-learning, instructional strategies, and other cutting-edge ICT-integrated assessment techniques.

Limitations of the Study

1. During treatment in the groups, the control mechanism should have been more reliable, but this was not feasible at the highest level.
2. Focus group discussions from a single class at a single school were used to get the qualitative data; in this instance, the research conclusions could have been strengthened if the relevant data had been gathered from sources other than the experimental school.
3. As an alternative to focus groups, individual structured interviews or questionnaires were not used to gather qualitative data. Personal interviews properly reveal the personal opinions of many participants, something that many focus group members do not want to share or feel comfortable doing. This is one of the weaknesses of the study.

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Competing Interest: No

References

1. Cener, E., Acun, I., & Demirhan, G. (2015). *The impact of ICT on pupils' achievement and attitudes in social studies*. *Journal of Social Studies Education Research, 6*(1), 190-207.
2. Ebire, F. A. (2020). *Teachers Perception of The Use of ICT As an Instructional Tool in Science and Mathematics in Nigeria Secondary Education*. *Open Journal of Educational Development, 1*(2), 13-26.
3. Hussain, I., Suleman, Q., & Shafique, F. (2017). *Effects of Information and Communication Technology (ICT) on Students' Academic Achievement and Retention in Chemistry at Secondary Level*. *Journal of Education and Educational Development, 4*(1), 73-93.
4. Salomon, A., & Kolikant, Y. B. D. (2016). High-school students' perceptions of the effects of non-academic usage of ICT on their academic achievements. *Computers in Human Behavior, 64*, 143-151.
5. Skryabin, M., Zhang, J., Liu, L., & Zhang, D. (2015). How the ICT development level and usage influence student achievement in reading, mathematics, and science. *Computers & Education*, *85*, 49-58