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Need for Introducing Research Skills in Early Academic Years and Their Effects on Later Achievement: A Case Study of Bangladesh

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Research Questions

1. What is the potential impact of early introduction of research and inquiry skills to primary schools in Bangladesh, on academic performance and development of critical thinking among the students?
2. What are the particular classroom tasks or instructional strategies that stimulate primary students in Bangladesh to develop basic research skills?
3. What are the strengths and weaknesses of starting research-related activities, according to the teachers and parents of the primary level?
4. How much can the non-academic elements- such as confidence, self-regulated learning, and motivation influence success of early research skills training?

Introduction

In the current society, children are learning much earlier than they did, allowing them a massive advantage at school and in their future professions. Engaging in research at an early age aids them to think critically, solve problems analytically and remain curious. That is what gets students performing better when they reach higher grades and has them prepared for whatever they decide to do next.

In Bangladesh, however, research training is not done properly until later in the education system. Primary children do simple tasks, secondary students complete group tasks which challenge them with their level of analysis, and full-on research courses only emerge in uni. This is unlike in many developed nations where competitive learning and research occurs much earlier. It is therefore reasonable to wonder whether or not the exposure of Bangladeshi students to that previous research may in fact help improve their long term academic performance.

Existing Literature

The studies have suggested that initiating learning through enquiry at a young age can in fact stimulate academic success. Meesak et al. [1] discovered that those preschool settings that facilitated cognitive and language development forecasted high performance on school entry. At the primary level, Aktepe and Ulu [2] proved that, with the right instructions, young students have an opportunity to develop questions, find solutions, and express interest, indicating that even at a very young age, research skills could be taught.

Within the secondary level, inquiry based learning has been showing good results. Sonsun [3] Recently a report indicated that students being taught by IBL scored higher in science compared to students in traditional classes.Similarly, Hayat et al. [4] discovered that IBL was effective in boosting the performance of students of accounting and showed that they had a greater conceptual comprehension. In Bangladesh, Nahar and Machado, [5] noted significant improvements in communication, collaboration, creativity, and critical thinking levels, after six months of IBL middle school and high school students. Ghosh [6] revealed that the students who were highly self-regulated and self-assured achieved better academic scores, which demonstrated that extracurricular skills are useful in academic achievement.

In Bangladesh, very few studies examine the long-term effects of teaching research skills at the elementary level, notwithstanding this evidence. This dearth of long-term evidence emphasizes the necessity of conducting a thorough study on the potential effects of early research-skill training on subsequent academic success and cognitive development.

Research Methodology

This research will be a mixed-method research, wherein quantitative and qualitative will be integrated to examine the impact of early skill development of research.

Quantitative Phase

Design: Quasi-experimental

- Sample size: 300 primary students (Grades 3-5), who were stratified to two groups of 150 students who represent urban and rural schools.
- Intervention: One of the groups will be exposed to the structured IBL activities; the other one will be exposed to the national curriculum.
- Measures: Pre- and post-intervention tests and standardized rubrics will be utilized in order to test academic achievement, critical-thinking ability, and basic research skills. Educators will also answer a brief questionnaire of classroom-practice.

Qualitative Phase

- In-depth Interviews (IDIs): 20 teachers, 20 parents, and 10 school administrators will provide the perception of early research-skill-training.
- Focus Group Discussions (FGDs): The students will be divided into small groups to discuss the experience of inquiry based activities.
- Classroom Observations: Teaching and student involvement will be noted.
- Analysis: Interviews and observations recorded on audio will be transcribed and thematically coded in NVivo. Patterns will be established in terms of recurring patterns that motivate, self-regulate and develop skills.

Data Analysis

- Quantitative: Regression analysis, descriptive statistics and t-tests.

- Qualitative: Thematic analysis of interviews, observations and FGD.

Project Practicalities

Week	Activities
1–3	Design and pilot assessment tools; recruit schools
4–8	Implement IBL activities; conduct classroom observations; pre-testing
9–10	Conduct interviews and focus groups
11–12	Analyze, synthesize, and report data

Ethical Considerations

Before the study starts, the researcher will make sure that ethical approval is acquired from a reputable institutional review board. Additionally, parents, instructors, school principals, and kids themselves will all be asked for their written consent. Participants will have the option to

withdraw at any moment, and all data will be safely preserved and devoid of any identifying information.

Conclusion

In the framework of early research-skilled training, the study focuses on investigating strategies to close these disparities in Bangladeshi primary schools. It looks at how structured inquiry-based activities affect students' academic and cognitive development in order to give curriculum designers and policymakers hard data. The study's ultimate goal is to help schools adopt early research skills that improve students' capacity for critical and autonomous thought and better prepare them for college.

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