



Evidence in Action

A K20 Center Research Brief

The Impact of After School Science Clubs on the Learning Progress and Attainment of Students

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2022

Introduction

The research article by Magaji et al. (2022) investigates the impact of after-school science clubs (ASSC) on the academic progress and attainment of students. The authors highlight the significance of extra-curricular activities (ECA) in promoting learning and overcoming barriers to education. They reference various studies that demonstrate the benefits of ECAs, such as improved academic performance, social skills, and personal development. The study aims to fill the gap in literature regarding the specific impact of science clubs on students' learning outcomes, addressing the mixed results found in previous research.

Methodology

Research Design:

The study employed a mixed-method experimental design, incorporating both quantitative and qualitative data collection methods. This approach allowed for a comprehensive analysis of the impact of ASSC on students' academic performance and skill development.

Sample:

The research was conducted in a co-educational secondary school in London. The experimental group consisted of 17 students who regularly attended the ASSC, and the control group included 140 students who did not participate in the club. The study also involved the ASSC teacher and a teaching assistant to provide additional insights.

Data Analysis:

Quantitative data were collected through standardized science test scores, which were analyzed using statistical methods such as Welch's t-test and the Kruskal-Wallis test. Qualitative data were gathered through observations, questionnaires, and focus group discussions, and analyzed using thematic analysis to identify recurring themes and insights.

Results

The study found that students who participated in the ASSC showed significant improvements in their academic performance compared to the control group. The experimental group demonstrated higher mean performance scores at multiple time points, indicating the positive



impact of the ASSC on their learning progress. Additionally, students reported acquiring valuable non-academic skills such as collaboration, teamwork, leadership, communication, and increased confidence in learning. These skills were seen as contributing factors to their improved academic outcomes.

Application into Practice

To replicate the intervention in a school context, the following steps can be taken:

1. **Establish an After School Science Club:** Create a structured program that meets weekly for one hour, focusing on hands-on experiments and practical activities related to the national curriculum.
2. **Engage Students in Collaborative Learning:** Encourage students to work in groups, design experiments, and discuss their findings to promote scientific inquiry and critical thinking.
3. **Provide Teacher Training:** Ensure that teachers running the ASSC receive adequate training and support to effectively facilitate the club and engage students.
4. **Incorporate Student Interests:** Allow students to have a say in the activities and topics covered in the club to maintain their interest and motivation.
5. **Monitor and Evaluate Progress:** Regularly assess students' academic performance and gather feedback to continuously improve the program and address any challenges.

Work Cited

Magaji, A., Ade-Ojo, G., & Bijlhout, D. (2022). The impact of after school science club on the learning progress and attainment of students. *International Journal of Instruction*, *15*(3), 171-190. <https://doi.org/10.29333/iji.2022.15310a>