



Evidence in Action

A K20 Center Research Brief

Maximizing Learning with 1:1 Student-to-Laptop Ratio: Insights and Strategies

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Introduction

The research article by Dunleavy et al. (2007) explores the added value and unique challenges presented by a 1:1 student-to-laptop ratio in technology-supported teaching and learning. The study is set against the backdrop of increasing implementation of 1:1 computing initiatives in schools worldwide. The authors highlight the potential transformative impact of 1:1 computing on education, emphasizing the need for detailed documentation of teacher and student practices and outcomes. The study aims to provide insights into the contributions of 1:1 access to technology-supported teaching and learning, addressing gaps in existing research.

Methodology

Research Design:

The study employed a qualitative case study design, focusing on two middle schools in the southeastern United States. Data were collected through formal and informal interviews, direct observations, and site documents.

Sample:

The sample included eight teachers from core subject areas (math, science, and English) across two middle schools. The schools were purposefully selected for their 1:1 computing programs.

Data Analysis:

Data were analyzed using a structured coding scheme based on the conceptual framework of the study. The analysis included within-case and cross-case comparisons to identify patterns of use and challenges associated with the 1:1 student-to-laptop ratio.

Results

The study found that online research, productivity tools, drill and practice, and eCommunications were the most frequent uses of laptops in the 1:1 classroom. The 1:1 classroom provided potentially transformative added value to these uses, such as enhanced formative assessment, individualized instruction, self-paced learning, and increased student engagement. However, the presence of 1:1 laptops also presented unique management



challenges, including classroom management issues and hardware problems.

Application into Practice

To replicate this intervention, schools should consider the following steps:

1. **Technology Integration:** Ensure that each student has access to a laptop for learning purposes.
2. **Professional Development:** Provide ongoing training for teachers to effectively integrate technology into their instruction and manage classroom challenges.
3. **Curriculum Alignment:** Use technology to align with educational standards and enhance student engagement through interactive and personalized learning experiences.
4. **Assessment and Feedback:** Utilize formative assessment tools to monitor student progress and tailor instruction to individual needs.

Work Cited

Dunleavy, M., Dexter, S., & Heinecke, W. F. (2007). What added value does a 1:1 student to laptop ratio bring to technology-supported teaching and learning? *Journal of Computer Assisted Learning*, 23(5), 440-452.