Chapter 8
The Impact on Literacy Instruction Using a Technology Platform:
Applications for Preservice and Inservice Teachers

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ABSTRACT

Preservice teachers live in a unique world today with the blending of traditional instructional materials for literacy and a variety of high-tech learning technologies present in every 21st century classroom. In the current landscape, teachers are required to learn a variety of technology programs, to know their benefits, and to seamlessly implement them alongside the many pedagogies for maintaining a classroom. This includes teaching a variety of learning strategies and balancing blended online vs. in-person classrooms. This heavy responsibility is compounded by the problem facing many literacy educators today (i.e., how best to instruct within a technology platform and continue to motivate learners to read and to monitor their own use of literacy strategies for comprehension). This chapter outlines a study and subsequent findings of the impact of computer technology for reading strategies instruction with pre-adolescents and its impact for preservice teacher education programs.

INTRODUCTION

Preservice teachers live in a unique world today with the blending of traditional instructional materials for literacy and the variety of high-tech learning technologies present in most 21st century classrooms (Bitter & Pearson, 2002). With the inclusion of these new learning modalities, preservice teachers are now in need of clear and concise research-based instruction for how best to utilize these technologies in a meaningful way (Eutsler & Long, 2021). While these digital natives come with a plethora of technology

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skills imbedded into their every day lives, their knowledge, confidence and abilities for tying together content with technology applications is limited (Beetham & Sharpe, 2013). Both practical skills and habits are impacted by the influx of technology into the modern classroom. Teachers need to be able to respond positively and confidently if they are to utilize these new technologies and engage with students in a meaningful way in the classroom (Beetham & Sharpe, 2013).

In the current landscape, teachers are required to learn a variety of technology programs, to know their benefits and to seamlessly implement them alongside the many pedagogies for maintaining a classroom (Bitter & Pearson, 2002). There is a need, therefore, for preservice teachers to be experts in blending content with technology, due in part to the fact that "…digital tools have played and continue to play in the theory and practice of 21st century learning" (Mirra & Garcia, 2021, p.487). This includes teaching a variety of traditional and technological learning strategies and sometimes balancing blended online vs. in-person classrooms.

This heavy responsibility is compounded by the problem specifically facing many literacy educators today, i.e., how best to instruct within a technology platform and continue to motivate learners to read and to monitor their own use of literacy strategies for comprehension. To partially combat this problem, preservice programs need to incorporate technology pedagogy into their coursework, where the practice is repetitive and the technology is blended with content in a practical way (Ellaway, 2013). This allows for the technology to work alongside the traditional instruction in a way that is meaningful and relevant to the 21st century student and gives the 21st century preservice teacher the tools for implementing technology and content-based instruction cohesively.

To operate effectively in the classroom, preservice teachers need training in technology skills to better implement them into lesson plans. When preparation programs give explicit instruction in technology pedagogy, preservice teacher beliefs can be changed. As they are encouraged to import technology, preservice teachers see the effect of such an importation, and note a change in their own personal perceptions about the technology in the classroom (Rehmat & Bailey, 2014). Other factors affecting preservice teachers include self-efficacy, a perceived usefulness of the technology being utilized and teachers' intentions vs. actual practice of technology use. These factors are improved upon when technology training is incorporated into preservice instruction. A broad program of technology training has been shown to improve self-efficacy, increase intention to use technology and increase feelings of ease of use and usefulness of the technology when imbedded within the curriculum (Joo, Park & Lim, 2018). "It is important that teacher education programs focus their efforts on improving perceived usefulness, student learning/expectations, and self-efficacy to facilitate transfer of intensions into actions (Sadaf, Newby & Ertmer, 2016, p.55).

This chapter describes two case studies that outline the effect of teacher perceptions, attitudes and modeling on student response and student engagement with technology. From these cases, lessons regarding teachers' preparedness for technology connections to the content can be gleaned. Given that there is a current disconnect with intention and implementation in both preservice and in-service teachers (Sadaf, et al., 2016), insight can be gained from noting how these cases morphed from reluctance and lack of self-efficacy with the technology implementation to positivity and belief in its usefulness with student successes as an end result. The teacher and the training are, after all, the determining factors when implementing the technology successfully to create engaging experiences with content between students and peers (Sadaf, et al., 2016).