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**Pedagogies for the engagement of girls in the learning of proportional reasoning through technology practice.**

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Summary: This paper reports the results of two interventions involving the integrated study of mathematics and technology practice to girls in Years 6 and 7. The focus of the study was to look at factors that contributed to girls' disengagement with mathematics study and seek pedagogical solutions for this. The key mathematics concepts embedded in the two interventions were proportional reasoning and ratio. A design based research methodology was adopted. The study started with the assumption that by integrating mathematics study with technology practice students would see the mathematics as authentic and understandable. The results of the first intervention indicated that a significant proportion of the girls did not develop the hoped for improvement in perceptions about the value of studying mathematics through technology practice, despite an improvement in their understanding of proportion and ratio. These results informed the second intervention in which modified tasks and pedagogy were implemented. The results of the second intervention were similar in terms of cognitive outcomes. However, when students were given explicit scaffolding in "within" and "beyond" the domain of mathematics integration as well as tasks that they considered authentic, student perceptions of mathematics study improved. (Contains 4 tables and 1 figure.) (ERIC)

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*Keywords:* research methodology; intervention; females; mathematical logic; thinking skills; technology education; gender differences; single sex schools; mathematical concepts; student attitudes; program effectiveness; teaching methods; learning activities; relevance (Education); curriculum development; grade 6; grade 7

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