Impact of Bridge 21 model on female students' confidence in STEM and Computing: Aligning the model to bridge the gender gap in STEM through a 21ˢᵗ century skills based intervention

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The paper utilizes quantitative research to gauge the impact of 21ˢᵗ century skills based intervention (through Bridge 21) on the impact of female student's confidence in computing and if the (Bridge 21) model can be modified to positively impact the confidence of female students in computing and more extensively, STEM. Within the research limitations, findings indicate an inadequacy in the current Bridge 21 model to suitably address the gender gap in computing. We address the fundamental reasons in Ireland and globally for the restricted representation of females in STEM through a comprehensive literature review. The literature review and findings from the quantitative research inform the modifications and implementation guidelines for educators implementing the Bridge 21 model made in the paper.

Trinity Access 21 is a 21ˢᵗ century skills based programme which aims to encourage a strong, college-going culture through purpose driven intervention for second level Irish students. One of the ways that TA21 intends to reform the education system is by training teachers to teach 21ˢᵗ century skills through the implementation of Bridge 21 - a team based, technology enhanced, project based learning model.

The paper contends the role of 21ˢᵗ century skills acquisition as an elementary practice in STEM and Computing Education to positively affect the confidence of girls in these fields and advocates the use of Bridge 21 as a candidate learning model for STEM and Computing education. Through accelerating the acquisition of key 21ˢᵗ century skills, Bridge 21 has the potential to positively impact self-efficacy belief in girls and consequently influence their academic choices in favour of STEM and Computing.