A Cross-National Comparison of Computing Students' Sense of Belonging in Ireland and Scotland

Shamima Runa
School of Computer Science
University College Dublin
Dublin, Ireland
shamima.runa@ucdconnect.ie

Fiona McNeill
School of Informatics
University of Edinburgh
Edinburgh, United Kingdom
f.j.mcneill@ed.ac.uk

Jack Parkinson
School of Computing Science
University of Glasgow
Glasgow, United Kingdom
jack.parkinson@glasgow.ac.uk

Catherine Mooney
School of Computer Science
University College Dublin
Dublin, Ireland
catherine.mooney@ucd.ie

Abstract

One of the most important aspects of students' academic experiences is their sense of belonging, which supports their motivation, persistence, and overall wellbeing. Previous studies have shown that various complex factors, including gender, race, LGBTQIA+ membership, socioeconomic status, past experiences, and institutional culture, influence students' sense of belonging in computing. This study compares undergraduate computing students' sense of belonging in Ireland and Scotland, highlighting key demographic and contextual factors. We found that gender and minoritisation continue to be significant factors, but their impact differs across national settings. Our findings demonstrate that social interaction and clubs/societies membership are consistently associated with higher belonging in both Irish and Scottish contexts. This work supports the development of targeted interventions to improve students' sense of belonging in computing, particularly across different regional and institutional environments. Future work will expand this comparison to include Wales and England to develop a broader perspective across Ireland and the UK.

Keywords

Sense of Belonging, Minoritisation, Gender, Computing Education

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1 Extended Abstract

This study extends existing literature, expanding investigations into cross-national contexts on undergraduate computing students' sense of belonging by directly comparing Irish and Scottish contexts, focusing on key demographic and contextual factors [1]. Prior work has highlighted the significance of belonging for student retention and success in computing, particularly for underrepresented groups [2, 3]. Our study confirms that belonging is shaped not only by individual identities but also by institutional contexts and the opportunities they provide for peer engagement, community-building, and inclusion.

Previous Irish studies indicated that gender and minoritisation significantly moderate students' sense of belonging. However, the Scottish data introduced new dimensions to this understanding. Gender had a stronger overall impact in Scotland, with women reporting significantly lower belonging than men — a trend that was either weaker or absent in the Irish data [3]. Moreover, minoritised women in Scotland experienced significantly lower belonging than minoritised men, highlighting a more gendered manifestation of minoritisation not seen in Ireland. These findings suggest that intersectionality varies across national and institutional contexts, reinforcing the need for locally tailored belonging strategies.

Across both contexts, social interaction consistently emerged as a key predictor of belonging, particularly for women — a finding aligned with research emphasising the role of peer relationships, faculty support, and social integration in fostering sense of belonging. Students who participated in computing-specific clubs/societies reported significantly higher belongingness, echoing prior work that links extracurricular and community engagement to sense of belonging, suggesting that field-specific engagement may be particularly influential. Together, these findings underscore the value of cross-national comparisons in deepening our understanding of sense of belonging and the need to tailor interventions to institutional and national contexts.

References

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