



Connecting worlds: Mutual benefits of teacher–researcher interaction.

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Launched in 2021, the Geoscience for Leaving Certificate Geography Continuing Professional Development Course, run by iCrag, the Science Foundation Ireland research centre in Applied Geosciences, and Geological Survey Ireland, a division of the Government of Ireland, has entered its third iteration. Addressing the absence of geoscience as a standalone subject in Irish schools, this course introduces post-primary teachers, and therefore their students, to geoscience through the non-compulsory subject of geography.

In this course, teachers work in collaboration with geoscience researchers to produce an array of free, readily accessible geoscience resources via the iCrag and Geological Survey Ireland websites. This addresses the shortage of specialised geoscience material available to Irish geography educators, thus ensuring that students have access to contemporary and accurate geoscience information. Furthermore, the involvement of teachers from a variety of educational contexts guarantees that the resulting lesson plans are versatile and suitable for a broad spectrum of educational settings.

In the 2023 iteration of the course, a diverse range of educational resources were developed, including field guides, a 6-week module and lesson plans. These materials integrated seven of the eight recognised active learning intelligences: Linguistic, Logical-mathematical, Visual-spatial, Bodily-kinaesthetic, Interpersonal, Intrapersonal and Naturalistic. With the support of researchers, teachers were able to incorporate essential geoscience skills such as field work, data collection, mapping/GIS, critical thinking and other scientific skills into the curriculum. The lessons were differentiated to meet the varied needs of students, whilst ensuring there was a focus on the Leaving Certificate exam (the final exam of the Irish secondary school system and main gateway to third level). Teachers reported significant benefits from their interactions with geoscientists, appreciating the opportunity to consult with specialists for in-depth inquiries and clarifications. Likewise, it is hoped that students reap the rewards of this educational approach, deepening their understanding of geoscience.

Researchers, from iCrag and Geological Survey Ireland, participating in the program also derived significant benefits, particularly in gaining an understanding of how to distil complex scientific topics for a varied student audience, something that teachers are expert at. The preparation phase for their presentations underscored the importance of balancing technical accuracy with

the existing curriculum constraints, an important consideration given the occasional misalignment between current geoscience knowledge and the content of the Leaving Certificate geography syllabus. This exposure to curriculum limitations gives researchers an insight into the public's perception of science. Additionally, teachers exposed the researchers to a range of student perspectives, such as the diverse reactions to geothermal energy. Also, the observation of differentiated teaching methods, which are not often found in the traditional university lecturing styles, provided invaluable insights into the diversity of educational approaches.

The CPD course exemplifies a successful model of collaboration between teachers and geoscientists, enhancing geoscience education while providing mutual benefits. It not only enriches the teaching methodology but also offers researchers a unique perspective on the dissemination of scientific knowledge, thereby bridging the gap between academic research and practical classroom application.