

C2 Beaumaris 1 Wednesday 14.15-14.45

Salient Practices of Award-Winning Undergraduate Research Mentors – Excellence, Freedom and Control. (0353)

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Context

The identification of undergraduate research (UR) as a high-impact practice (HIP; Kuh, 2008) has added to its growth as an international movement. Of the HIPs identified by the Association of American Colleges & Universities (AAC&U), UR has been most significantly correlated with a wide range of learning outcomes, including critical thinking and analysis (Brownell & Swaner, 2010; Kilgo et al., 2015; Kuh, 2008). This study seeks to address the need for evidence-based mentoring practices that differentiate UR as a distinctive HIP.

This paper presents a philosophical framing of practices, then outlines a summary of salient practices of UR mentors as described in the literature (Shanahan et al., 2015). Furthermore it utilises the eight characteristics of high-impact pedagogic practices (Kuh & O'Donnell, 2013). Against these two works we present results from 32 in-depth interviews with award-winning UR mentors from four countries about their practice. In doing so, we highlight the defining characteristics for this group of academics and draw out underlying values behind their practice.

Methods

An international database of award-winning mentors was created in an effort to identify and recruit a diverse participant pool who had been recognised for excellence in UR mentoring. To qualify for inclusion, individuals' awards could be at the national or institutional level with peer-reviewed selection committees, and received within the previous five years. Web searches were used to collect: name, gender, rank, discipline, and year of award, as well as institutional type and country. The resulting database included participants from the US, UK, Canada, and Australia. 32 interviews were conducted.

Three members of the research team carried out in-depth interviews about UR mentoring. The interview guide explored pathways into UR mentoring, the nature of the mentor-mentee relationship, effective research mentoring practices, challenges to successful mentoring, and the perceived future of UR mentoring. Following transcription, two members of the team

coded the interviews, followed by cross-checking by the remaining three members to ensure optimal inter-rater reliability. This was facilitated using the online qualitative software program Dedoose which allowed members to access the interviews simultaneously from different locations. Using grounded theory (Charmaz, 2000), analysis focussed on eliciting salient practices described by the award-winning UR mentors.

Results

At a meta level, a threefold thematic structure of 'creating challenge', 'sustaining engagement' and 'celebrating achievement' emerged from the reported practices. The three meta-themes are exemplified in turn, with representative verbatim quotes from award-winning mentors, cross referenced to the quality characteristics of HIPs (Kuh and O'Donnell, 2013) and the ten salient practices for UR mentoring (Shanahan, et al, 2015). In so doing, notions of excellence are elicited and values underlying mentor practices revealed. Award-winning mentors are defined by their expertise in carefully balancing the control they exercise with the freedoms they wish their students to experience as undergraduate researchers. Mentors maintain this balance with each individual student, even when mentoring a research team. Holding students in a liminal state (Cook-Sather and Alter, 2011) requires careful judgement, acknowledging the needs of each mentee. What appears to distinguish award-winning mentors, over and above their implementation of salient practices identified from the literature, is their tacit understanding of and ability to respond to each students' needs in terms of moving them into potentially uncomfortable liminal space, to create an identity change from student to researcher. Award-winning mentors' practice took students to 'the edge' in a developmental capacity (e.g. to the edge relative to scientific discovery, their ability to engage with creative works, their ability to network and present to peers and colleagues, their concept of career aspirations, etc.), while at the same time providing a personal safety net within an authentic co-researcher model.

Implications

There are clear implications for practice as a result of this research. The expert mentor is someone who can: balance the needs of novice researchers so that they feel challenged, but not lacking in support; whose engagement is long-term and sustained through the project being tailored but within the context of feeling part of a community; and finally, that their research and learning is celebrated and shared with a broader audience. An essential and distinctive feature of award winning UR mentoring is developing an authentic interest in the whole student (rather than just the research project).

A mentoring pedagogy for the future needs to acknowledge and adapt to the way in which the context of research-based learning in universities is evolving. There are implications for being able to scale up research teams while maintaining a quality experience where students feel supported emotionally, as well as academically. Furthermore, the importance of reward and recognition for UR mentors and support for this activity within and outside of the curriculum in administrative and resource management systems is clearly apparent. Yet the changing nature of both higher education and research pose significant challenges to the one-to-one model of mentored UR, the implications of this challenge will be discussed.

References

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