Discussion Paper: Improving the participation of students in health professional education research

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Abstract

Health professional education (HPE) has grown as a field of research, with an increasing number of publications since the 1990s. Interprofessional education is a specific area of growth with ongoing debate in the literature, at least in part due to the challenges that exist in implementation, and further research is needed to inform ongoing practice. Participant recruitment is a major challenge, and poor participation rates lead to bias and a failure to demonstrate outcomes.

There is a lack of information about why students decline to participate in research to inform and improve education. Motivation for volunteerism in other contexts and recruitment of human participants in other types of research are examined as a way to understand the likely motivations of student participants. Disincentives to participate include time commitment, survey fatigue and a poor understanding of the value of HPE research and the processes involved. The ethical considerations for teacher-researchers add another layer of complexity to recruitment.

A multifaceted approach, involving all stakeholders and targeting known influences, is needed to improve recruitment in health professional education research, and clear communication of the research rationale and its potential impact on curriculum design is essential. Explicit communication and adequate information to allow informed student choice are also required, while improved literacy in HPE research may provide students with a better basis for decision making when considering participation. In addition, partnership and student co-design could be a mechanism for more meaningful engagement.

Keywords: medical education; health professional education; participation; recruitment.

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ISSN 1442-1100

Introduction

Research and scholarship are essential for the advancement of health professional education (HPE) (Heflin, DeMeo, Nagler, & Hockenberry, 2016; Keune et al., 2013; Schuwirth & Durning, 2018). Such research requires the active participation of a range of stakeholders. Due to their unique position within the HPE system, students, as stakeholders, can provide valuable insight into different aspects of teaching and learning activities and processes, and promote innovation (Cook-Sather, Bovill, & Felten, 2014; Matthews et al., 2018). HPE research includes numerous studies involving undergraduate and postgraduate healthcare students, however very few of these studies discuss the complexities and challenges of the involvement of students as research participants. In the context of a broader discussion about the responsible conduct of education research in the health professions (Maggio, Artino, Picho, & Driessen, 2018), student participation in HPE research deserves further scrutiny.

Tertiary education literature has noted the challenges encountered in relation to student participation in research. Reflecting the problems with recruitment encountered in other areas of research involving human participants (McDonald et al., 2006), authors have noted that participation rates of one third and attrition rates of 20% are common in research involving university students (Cyr, Childs, & Elgie, 2013). Studies which fail to achieve their recruitment targets are unlikely to be published, thus making it difficult for researchers to learn from their experience. The validity of education research has been questioned in light of poor participation rates, and the high rate of withdrawal in longitudinal studies raises the question of bias (Callahan, Hojat, & Gonnella, 2007; Sarpel et al., 2013; Walsh, 2013). Similarly, the credibility and usefulness of educational research may be questioned due to the response bias associated with those students who do volunteer to participate and how representative they are of the larger student cohort (Walsh, 2014). Participants in longitudinal education research are more likely to have performed better academically and less likely to come from a minority group, which may limit transferability of results to the wider student population (Callahan et al., 2007). The ethical issues involved in working with students as research participants in education research also add to the complexity, since the researchers may also be the teachers (Brown, 2010; Chen, 2011; Ridley, 2009; Voo, 2009; Walsh, 2014).

Whilst the problem of recruitment in health professional education research is acknowledged, student participation in HPE research is not well articulated in the literature (Chen, 2011). Currently, there is little published literature exploring the reasons why students do not participate in education research (Khatamian Far, 2018; Stovel, Ginsburg, Stroud, Cavalcanti, & Devine, 2018). However, it is important to develop more nuanced understandings about the elements that influence student participation in HPE research if we are to meaningfully engage and empower this valuable stakeholder group.

The aim of this paper is to illustrate the multiple interrelated influences on student participation in HPE research. In the next section, we consider the motivations and disincentives for participation and the ethical complexities characterising healthcare

ISSN 1442-1100

students' participation in education research. We conclude the paper with an exploration of what the HPE research community might do to improve student participation in education research.

Influences on student participation

In order to understand the factors influencing student participation, we looked outside of the education research literature to the clinical trials literature and the practice of "volunteering" in a broader sense. This research provides a framework to situate and understand the influences on student participation in education research.

Motivation to participate

Exploration of the practice of "volunteering" may afford insights into students' motivations to participate in research. Although complex and multifaceted, with variation between individuals, the motivation to volunteer can be largely distilled down to benefit to self and benefit to others. Benefit to self encompasses both intrinsic and extrinsic rewards. These two categories are interdependent and are also impacted by the expectations of others. Commonly cited personal drivers for volunteering are the desire to help others and to feel useful or needed (Cuskelly, Hoye, & Auld, 2006; Holdsworth, 2010). Other personal benefits include social contact, gaining new skills, improved career opportunities and financial reward (Edwards et al., 2002; Jenkins & Fallowfield, 2000; Limkakeng et al., 2013; McCann, Campbell, & Entwistle, 2010). In some cases, volunteers will be driven to meet the normative expectations of others by donating their time or skills (Einolf & Chambré, 2011; Holdsworth, 2010). When focusing specifically on students, the subtle or overt potential for students to gain a real or perceived personal advantage (e.g., opportunity for improving performance through participation in additional educational activities or being seen in a positive light by faculty) may also act as an inducement to participation (Bartholomay & Sifers, 2016; Boileau, Patenaude, & St-Onge, 2018).

Altruism, or the desire to help others, is a commonly cited motivation for participation in clinical trials research (Newington & Metcalfe, 2014). Education research may be expected to hold a similar attraction for health professions students, but educational improvement within health is perhaps not rated as highly or seen as a worthy cause in comparison to the possible health benefits clinical trials can yield. This is an aspect that is yet to be explored in empirical research. Moreover, the translation of the findings of education research into teaching and learning practices and curricula occurs over the long term and may be unseen by students. This lack of immediacy may reduce the perceived value and benefit (either to oneself or others) of participating in education research. While altruism might incline a student towards participating, it does not always ensure participation (McCann et al., 2010). Furthermore, even those who are altruistically oriented are more likely to participate if they believe they will personally benefit (McCann, Campbell, & Entwistle, 2013).

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External incentives, mostly financial, are also regarded as positively influencing participation rates, and incentives are often used in research studies to compensate participants for their time and contribution (Edwards et al., 2002; Phillips, Reddy, & Durning, 2016; Thornton et al., 2016). However, such rewards and incentives can have unintended negative consequences and result in an opposite effect to that which is intended. For some people, the intrinsic drive to volunteer may be lost or diluted with the provision of payment or incentives. The desire to benefit others is linked to intrinsic motivation, and this is more enduring and rewarding than extrinsic motivation arising from incentives (Holdsworth, 2010; Warburton & Smith, 2003). Monetary incentives are sometimes perceived as implying that the task is difficult or unpleasant (requiring "compensation"), and this may act as a disincentive (Gneezy, Meier, & Rey-Biel, 2011). However, there are established models in which students are routinely rewarded for participation in research, for example, in undergraduate psychology, where course credits are awarded (School of Psychological Sciences, 2017). Although this is seen by some as a valuable way to promote understanding of research and research conduct, the ethics of this approach have been questioned (Cleary, Walter, & Jackson, 2015). Of note, most published HPE research studies do not describe incentives for participation (Stovel et al., 2018).

Disincentives for participation

Time required to participate in research is a well-recognised disincentive (Christakis, 1985; Keune et al., 2013; Sarpel et al., 2013). Health professions students typically have heavy course workloads, including clinical attachments; thus, additional time commitments for research are likely to be perceived as a significant impost. Overload, or fatigue due to multiple evaluators and HPE researchers targeting the same student cohort, can also be an issue for students (Adams & Umbach, 2011). This further adds to concerns about whether student participants are representative of the wider student group, as those who are less academically sound or have other commitments may be less inclined to participate due to time contraints (Callahan et al., 2007).

More broadly, the local educational context, culture, expectations and beliefs are also likely to be influential. There are also peer influences on participation. Conformity is a powerful and pervasive influence on how people behave and interact in groups, and this may have implications for participation, non-participation and bias in HPE research (Beran, Kaba, Caird, & McLaughlin, 2014). An understanding of student norms of participation, and the factors that influence this, is important. The wider context of staff and community expectations in this regard may be equally important. In some programs, the expectation from staff is that students routinely participate in education research as part of their learning (School of Psychological Sciences, 2017).

Research literacy

Students' level of familiarity with education research is an important consideration. It is possible that a failure to make explicit the value of health professional education research and the processes involved is a less obvious but critical negative influence on

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student participation. There is a paucity of education research training in many health professions programs, and where students are trained in research, it is heavily weighted towards the clinical paradigm. The differences between the clinical and educational paradigms are well established in the literature (Schuwirth & Durning, 2018). Thus, students may be unfamiliar with the conduct of health professional education research, including, for instance, qualitative study designs and how research informs teaching, learning and curricula. This also intersects with students' capacity to see the relevance and benefit of research to themselves or others.

The often-blurred distinction between education research and evaluation of teaching and courses may unduly negatively influence student participation in research. There is evidence of student skepticism of the value of university surveys to evaluate higher education programs (Spooren & Christiaens, 2017). Although disgruntled students may utilise evaluation surveys for their complaints, they often perceive that few actions result from them (Uttl, White, & Gonzalez, 2017). This may, in part, reflect poor communication from staff about how the outcomes of evaluation have been used to implement program and curriculum improvement. This is a vicious cycle, since university surveys for evaluation of teaching are widely dismissed by teaching staff as poor-quality evidence due to low participation rates, and participation in evaluation is enhanced by student perception that teachers will utilise the results (Hornstein & Law, 2017; Iqbal, Lee, Pearson, & Albon, 2016; Uttl et al., 2017). This conflation between educational evaluation and research can engender poor perceptions and attitudes about education research, which impact on intended and actual participation. Both health professional education evaluation and research require high levels of student participation to yield meaningful results and inform educational improvement.

Ethical considerations

The ethical considerations associated with education research are immense and add another layer of complexity to student participation in health professions education research. The teacher as researcher has generated considerable debate. The main ethical concern is that of coercion (Aycock & Currie, 2013; Sarpel et al., 2013). Some maintain that a teacher drawing upon their own student cohort as participants is fundamentally unethical due to the power imbalance between student and teacher or educational institution (Ferguson, Yonge, & Myrick, 2004). This may compromise the nature and quality of the data that are collected. Other authors have noted the blurring of boundaries and roles that can occur when a teacher takes on the role of researcher of their own teaching program (Boileau et al., 2018; Regan, Baldwin, & Peters, 2012). Parallels can be drawn between the conflicts of interest experienced by the physician-researcher and educator-researcher (Henry & Wright, 2001). The double agency of fulfilling two roles simultaneously may lead to ethical threats at various stages of the research process: recruitment, consent, confidentiality and participant withdrawal (Ferguson et al., 2004).

Although some have suggested that health professions students are better informed about research compared to many target populations, their position may render them

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more vulnerable to perceived pressure or coercion by teacher-researchers (Bartholomay & Sifers, 2016). The validity of informed consent in the context of the student-teacher power differential is questionable, and the decision to participate may be significantly influenced by the (perceived or real) potential effect on grades or career. These ethical considerations have major relevance for education research in terms of balancing the needs of teachers and institutions to examine and critique educational practices through evaluation and research and what may be considered as reasonable means of engaging students in research. Many have argued that education research is of clear benefit to students and to the curriculum and have suggested that explicit voluntary consent is not warranted (DuBois, 2002; Forester & McWhorter, 2005).

The level of scrutiny of education research by institutional ethics committees and other bodies compounds the problem. In the past, health professional education research has been viewed, understood and treated in different ways by institutional ethics review committees. Differing levels of scrutiny of the education research process, ranging from exemption to full review, has meant variability in the protection offered to participants, including students (Chen, 2011; Regan et al., 2012). With the expansion of the field, however, the review of education research has become more uniform, and most studies usually require formal ethics approval, or at least need to demonstrate adherence to ethical principles for publication (Boileau et al., 2018). Still, in some instances, the lack of education research expertise on these committees can add to the disparity in the review processes (Brown, 2010). The lack of distinction between evaluation and research mentioned earlier can also add to the confusion.

Despite being categorised as low risk, health professional education research can have a range of unforeseen consequences for participants. For students, these may include diversion from academic commitments, psychological effects, delayed responses to the research phenomenon being studied and the establishment of new dynamics. Unintended psychological effects may occur when the topic of study encroaches on a sensitive topic in health education (e.g., learning about death and dying), and this impact may be felt after the study has concluded, leaving the student without a clear avenue for seeking assistance. In addition, despite attempts to preserve anonymity, a teacher-researcher may recognise a participant and react consciously or unconsciously to their comments. The unintended consequences of education research participation remain an area where evidence is lacking.

The above analysis has illustrated that there are multiple interrelated influences on student participation in education research. While a number of ethical concerns have also been raised, interestingly, students do not appear to have the same concerns about risk and, reportedly, value education research (Forester & McWhorter, 2005; Sarpel et al., 2013), yet their participation in education research is poor.

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Recommendations

In this section, we consider what can be done to improve student participation in education research within the health professions. The strategies and potential solutions to the problem of students as participants in health professions education research will be complex and multifaceted.

Educators and researchers are familiar with the need to understand local context and the multiple factors that may influence an educational method (Schuwirth & Durning, 2018). A similar approach will be needed in facilitating student recruitment into education research. Recent evidence from the clinical trials context has identified that tailored approaches that address the local context are successful in improving recruitment (Rooshenas et al., 2019). Notably, the majority of issues identified pertain to communication of the trial information to eligible participants. This implies that clear communication about the purpose, potential outcomes and application of education research; the commitment required of participants; and how their data will be used is paramount. This can foster mutual respect between researchers and participants and enable students to make informed choices about participating in education research. Multiple and complementary modes of communication should be utilised to reach all potential participants. If provided with sufficient disclosure and opportunity to consider options, students may be more likely to consent to participate (Henry & Wright, 2001).

Students are a hugely diverse group and will have different perspectives and motivations for participating in education research. Context will dictate which factors are most important in harnessing individual student motivation to participate. Some students will need to be shown how education research can exert a beneficial influence on curriculum and have the benefit to self and others made more explicit and visible. Thus, they will require a level of immersion in the education research paradigm to ensure they have the opportunity to better understand the implications of such research. Students may also benefit from a more comprehensive approach, where educational theory and education research methodology (particularly qualitative and mixed methods) are embedded into health professions curricula to enhance research literacy. Participation in education research could be viewed as an educational activity in itself, provided sufficient information and scaffolding is given to participants so they can engage meaningfully (Chen, 2011).

While teacher-researchers need to ensure effort is directed at engaging students in education research in order to gain insights into teaching and learning activities and curriculum, they must also reflect on and be vigilant about the ethical issues inherent in studying their own students (Boileau et al., 2018; Cleary et al., 2015). Staff who are not involved in a dependent relationship with students should be selected to communicate with and recruit students to avoid coercion and pressure (Bartholomay & Sifers, 2016). Role modelling excellence in the responsible design and ethical conduct of health professional education research (Maggio et al., 2018) should be a goal of all educators. Teacher-researchers and other education researchers need to pay careful attention to the ethical principles of respect, welfare and justice (Boileau et al., 2018).

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Researchers should avoid collecting personal information unless it is directly relevant to the research, to safeguard confidentiality (Boileau et al., 2018). An opt-out strategy of recruitment is more likely to increase participation (compared with opt-in recruitment), but researchers should ensure that they address any perception of adverse consequences from non-participation. If incentives such as course credits are offered, there must be alternatives of equal time and effort available (Cleary et al., 2015).

Some authors have recommended specialised health professional education research review panels to improve quality and consistency of review (Heflin et al., 2016). Cultivating expertise in education research within institutional ethics review committees will assist in producing high quality research protocols, enabling role modelling of ethical principles in research design and conduct. Clarity about when data are collected for evaluation or for research is imperative to ensure appropriate ethical review (Sandars, 2009).

Larger collaborative health professional education research groups afford greater support for design and implementation than can be afforded a lone teacher-researcher. A coordinated approach among researchers may also address, in part, the issue of participant overload and fatigue and would likely increase the quality of those studies (Regan et al., 2012). An organised system allowing students to review all requests for participation in health professional education research studies in the coming year may allow students to develop a better understanding of the requirements as well as impacts of participation. The development of de-identified longitudinal education research databases may be a way to reduce the need to repeatedly approach students for information (Cook, Andriole, Durning, Roberts, & Triola, 2010). Examples of such databases include the Medical Schools Outcome Database (MSOD) in Australia and the Research on Medical Outcomes (ROMEO) registry in the United States of America (Thayer et al., 2016). As with any research design, health professional education researchers should ensure that all participant tasks are as efficient and streamlined as possible, as this is likely to pay dividends, particularly in retention for longitudinal studies.

Involving students as partners in co-design of education research may be the best way to deepen their understanding of the educational paradigm. This may translate into increased participation, as trusting collaborative research relationships are developed and the benefits of education research to themselves and others is made more visible. Student researchers may be able to contribute to projects by opening up areas of poor understanding and identifying alternative communication channels, targeted recruitment strategies, effective language (ensuring clarity of communication) and building trust with participants. Student partnerships with academic staff in teaching and learning have been embraced in higher education and may provide some useful models (Cook-Sather et al., 2014; Matthews et al., 2018). Although such partnerships take many forms, the common features are a collaborative, reciprocal process through which all participants have the opportunity to contribute to elements of teaching and learning. Positive experiences in participating in education research may also foster student interest in future HPE career pathways.

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Conclusion

Health professional education research is needed for the advancement of the field. As major stakeholders who are at the centre of the education process, health professions students have many insights to contribute in terms of pedagogical methods and curriculum innovations. When student participation in education research is not forthcoming, it represents a significant missed opportunity and impacts the quality and generalisability of findings. Health professional education researchers need to recognise that student participation in education research is a complex issue, the challenges of which cannot always be easily anticipated or managed.

Improving health professions students' participation in education research will require a multifactorial approach that may involve a range of strategies tailored to the local context. Communicating effectively about the rationale, process and outcomes of research is key to improving stakeholder engagement, and most effort should be expended on this aspect. Oversight and monitoring of research projects to ensure efficient data collection methods will help to prevent participant overload and "survey fatigue". More broadly, educators should seek to embed education research training into curricula, thus developing higher levels of education research literacy among students. Raising the expectation of student involvement may be best achieved by partnering with students in co-designing education research.

Funding and conflicts of interest statement

The authors received no funding and have no conflicts of interest.

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