What Teachers Of Medicine Understand About Learning: Seeking A Starting Point For Professional Development

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Overview

This research used Q Methodology to explore how medical teachers understand the processes whereby their students learn. We sought to make the teachers' assumptions about students' learning explicit as a prologue to professional development. Preliminary findings from this research indicate there are two predominant viewpoints among our sample of medical teachers. Group 1 represented 60% of the sample and Group 2 represented 3% of the sample. We conclude that there appears to be high degree of consensus about the optimal ways that students learn among teachers in our sample. We are currently analysing the subtle differences between the two groups and preparing a paper for publication. Other outputs include a workshop presented at the Australian & New Zealand Association for Health Professionals Educators (ANZAPHE) Conference in Newcastle, Australia on 31st March on the development of our research instrument. As a result of this presentation and other discussions that colleagues at University of Melbourne and University of Bristol have indicated an interest in replicating this study. Findings from this study will also be presented to the Otago School of Medicine.

Introduction and methods

Q Methodology provides a means to explore the subjective viewpoints of participants about a contested topic (Brown, 1996). The research process identifies common patterns in the way participants sort a set of statements that together build into viewpoints.

In Phase one of the research we developed the research instrument, a set of statements (i.e. Q-set) that provided possible answers to the research question: How do medical teachers understand the processes whereby their students learn? Statements were drawn from the literature, our experienced research team, and 20 semi-structured interviews with a wide range of medical teaching staff intentionally selected for their diversity of experience. The research team spent six months

developing a large set of over 100 statements. The statements were intended to represent the broadest possible opinions that could be held toward the research question. We then categorised the statements according to the seven curricular principles of the Faculty of Medicine, with one additional category added by the research team. This resulted in eight categories of statements (e.g. student centred learning; professional behaviours, experiential learning, etc). This set of statements was then reduced to a manageable number to facilitate 30-45 minute interviews. We were then piloted the statements with four academic staff to check for clarify of language in the statements. Following the pilot interviews, the Q-set was further reduced to 41 statements by eliminating cards that duplicated meaning or caused confusion.

Phase two of the research involved face-to-face interviews with a purposeful sample of 31 participants drawn from teaching staff who were from different disciplines and levels (i.e. Early Learning in Medicine and Advanced Learning in Medicine) and who had varying amounts of teaching experience. The sample included doctors, nurses and other clinicians as well as biomedical scientists with no clinical experience who teach medical students. Q Methodology attempts to reveal a range of viewpoints among a particular cohort of participants. The purposeful selection of participants was chosen to maximise the possibility of different points of view.

In the phase-two interviews, participants were asked to sort the statements rank the statements based on what they thought were the most optimal or least optimal ways that students learn and place them in a roughly equal distribution grid with an 11-point grid scale from -5 to +5. Following the sorting task, participants were asked their interpretation of the cards place to the far sides of the grid and why they placed the card in that position. The purpose of the post-sort interview is to allow participants to talk about the personal meaning they attached to the statements. In addition, participants were asked to provide demographic information about their discipline, years of teaching, what levels they teach, and what ways they thought the medical education curriculum could be improved.

The quantitative data collected in the interview process was analysed using PQ method (version 2.35). A centroid analysis followed by Varimax rotation resulted in a two factor solution or two groups. Group 1 represented 60% of variation in the sample and Group 2 represented 3% of variation. The viewpoint held by Group 1 represented the majority of the participants in the sample and indicates a high degree

of consensus among the medical teachers regarding the processes by which students. We are in the process of analysing the findings together with the qualitative interview data and are preparing a paper for publication.

Preliminary findings from PQMethod analysis:

Group 1:

The majority of medical teachers who participated in the study have similar views about the optimal ways that students learn. They place a high value on creating a supportive learning environment (9/+4) and they thing it is important to allow students to make mistakes in a safe environment (23/+4). They also believe strongly that students need to learn to be patient centred (17/+5) and develop self-awareness(14/+3).

Group 2

A central focus for these teachers is providing a conceptual framework that students can 'hang the facts' on (8/+5) and they find that telling stories is a good way to get concepts across to students (24/+4). They place a high value on asking students questions (2/-4) and they reject the idea that the best way for students to learn is to have experts explaining the facts (7/-4). They also think its important that students learning to collaborate in teams (19/-5).

Discussion and Implications

In light of the contemporary diversity and complexity of views and practice in medical education, it was surprising that to find only subtle differences and general unanimity in our data set. This may be explained by the unintended consequences of wording in the instructions for the sorting task. For the purposes of this brief report these implications are referred to as limitations of the study.

The one limitation of the study relates to how participants were instructed during the interview process. Participants were asked to sort the statements based on the 'optimal ways' that students learn. This may have inadvertently led the medical teachers to sort the cards based on their aspirations rather than what they actually do in their teaching practice. A second limitation of the study was the small sample size due to the difficulty we faced soliciting participation of clinical teaching staff as well as biomedical scientists who teach in medicine. These two groups represent a sizable number of medical teachers whose views are not represented in our findings, and who

we suspect may hold different views about students learning. Therefore we are not confident that we have obtained the diversity of opinions that may exist among the medical teaching staff. In essence, there appears to be a self -selection at work, so those with an interest in student learning took time to engage in the Q sort and answer questions.

The data from PQ method suggests there may be two or three additional groups or viewpoints. However, these groups did not reach an eigenvalue of 1 and therefore are not considered statistically significant. We have qualitative interview data for individuals in these groups and intend to explore the points of view expressed as we suspect that these individuals hold strong views that diverge from those of Group 1 and 2.

In conclusion, we do not think that our sample captures the diversity of viewpoint, especially when we consider the number of individuals and the diversity of disciplines as well as the different levels in medical education at the University of Otago. In addition, we believe the results indicate the aspirations of the medical teachers—what they think are the best ways that students learn, but not necessarily what happens in practice.