TEACHING ADVANCEMENT AT UNIVERSITY (TAU) FELLOWSHIPS PROGRAMME

TAU PROJECT:

SELF-DIRECTED LEARNING IN EDUCATING HEALTH PROFESSIONALS: A SCOPING REVIEW OF THE LITERATURE

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Introduction

Given the information explosion in the health sciences and the impossibility of keeping up with ever-increasing amounts of new medical research, health professionals must have the ability to identify, appraise and use appropriate information on an ongoing basis for safe, evidence-based practice. It is thus critical that faculties of health science train health professionals who are able to do this effectively and are steeped in the habit of doing it so that they will continue practising in this way for the rest of their working lives ("lifelong learning").

Self-directed learning (SDL) arose as an approach to adult education in the field of continuing education in the 1970s. Knowles (1975) defined SDL as a process in which learners take the initiative, with or without the help of others, in diagnosing their own learning needs, formulating their own objectives, identifying the available resources for learning, choosing and implementing appropriate strategies to meet their objectives, and evaluating their achievements. In the context of health professions education, it has been defined as an ability to search for new information, to evaluate this information critically and to adopt the information retrieved in the clinical decision-making process (Avdal, 2013). This approach has been suggested as a promising methodology to inculcate lifelong learning in medicine (Murad & Varkey, 2008). However, the concept of self-directed learning in medical education is somewhat elusive, with students and educators finding difficulty in defining it and agreeing on its worth (Ainoda et al, 2005).

At the same time, the drive to expand the numbers of health professionals being trained and to produce graduates who are more relevant to and ready to practice in a diversity of South African communities means that distributed or decentralised training of health professionals is going to become increasingly common in this country, as is already the case in many other countries, especially developed countries with significant rural populations such as Australia and Canada (Frenk et al, 2010; Couper et al, 2011). The Stellenbosch Faculty of Medicine and Health Sciences is leading a national project, called Stellenbosch University Collaborative Capacity Enhancement through Engagement with Districts (SUCCEED), which is specifically looking at models of decentralised training in South Africa. SDL is thought to be crucially important for such programs.

My question is, therefore, in terms of health professional education, how does one best facilitate and promote self-directed learning (on a distributed platform) – both in terms of process and content – in a way that contributes to lifelong learning.

Aim

This study aimed to understand the place of SDL in health professions education (HPE), using a scoping review of the literature. Specifically, it sought to:
- define SDL in HPE;
- ascertain the factors that facilitate SDL in HPE;
- establish the role of SDL in decentralised HPE; and
- determine the link between SDL and lifelong learning in HPE.

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Methods

An initial search was carried out by the researcher, using the National Library of Medicine PubMed database. The terms "self-directed learning" OR "self directed learning" were used. An initial screening search yielded 1171 articles. This was refined to articles published in English (1134).

The researcher then undertook a title review, including articles that were focused on generic health professions training (undergraduate, postgraduate or continuing education), and that did not exclusively consider specific limited skills development processes or training of patients and caregivers as opposed to health care workers. This yielded 356 articles. Articles that were not available electronically were excluded, in order to facilitate access, leaving 299 articles.

An abstract review was then carried out by the researcher. Articles were excluded that focused only on assessing SDL in students to determine the extent of SDL amongst them, their receptivity to it or readiness for it, unless these were linked to specific outcomes or compared to alternative approaches, as well as those focused simply on faculty acceptability of SDL. Also excluded were evaluations of specific interventions to assess whether there was greater SDL resulting therefrom, unless this were conceptualised in relation to overall program objectives or outcomes. This yielded 163 articles.

The full articles were downloaded. Nine articles could not be sourced, due to lack of institutional access or other technical issues. This left 154 articles. (See flow diagram, Appendix 2.)

A further search was then undertaken using the Education Resources Information Center (ERIC) database. The terms "self-directed learning" and "health profession" were used and 27 additional articles were identified. Of these, 14 were deemed relevant, using the same process above, and 12 full-text articles were obtained, which were included in the articles to be reviewed.

Thus a total of 166 articles were included in the review process at this stage of the project. An Excel spreadsheet was developed to enable a summary of each article to be entered into a database by a research assistant, with a focus on collecting data to address the key objectives of this study. Qualitative review of the spreadsheet contents enabled these main questions to be addressed.

A number of frequently cited source books on SDL were also reviewed to assist analysis.

Preliminary results

The process of data collection is still continuing, with about 50% of the articles having been reviewed. However, collation of data entered thus far together with the researcher's initial review of all the abstracts, indicates clear trends in the literature and enables provisional conclusions to be reached.

Articles were published from a wide range of countries, both developing and developed, with the USA being the single biggest contributor. In terms of professions, medicine dominated, with nursing being the next biggest group. A large majority of articles related to undergraduate training, with fewer about postgraduate training and continuing professional development.

Knowles' (1975) definition of SDL is largely accepted uncritically. Variations on this definition were largely explanations or elaborations. Contract learning, as described by Fox and West (1983), was

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seen to be the forerunner to self-directed learning (SDL) in medicine; the authors argued even then that it develops competence for lifelong learning, but provided no empirical evidence for this (see below). Ainoda et al (2005) found that only 8% of SDL articles published between 2000 and 2004 provided a clear definition of SDL, suggesting the need to clarify what is meant by this; a larger proportion of articles in the current review did provide definitions (about 35%), but it has been noted that the way SDL is understood, at least in the health professions, does vary greatly (Ash, 1985).

The major reasons provided for using SDL (from most to least common) were: promotion of lifelong learning, developing critical thinking, empowerment of learners, motivation of leaners and enhancing academic performance. In a useful summary of the evidence, Jennings (2007) states that SDL has been shown to be associated with increased curiosity, critical thinking, quality of understanding, better decision making, achievement satisfaction, motivation, competence and confidence, which tie in well to these reasons, but that there is no evidence that self-directed as opposed to teacher-directed learning improves learning outcomes.

Links with outcomes were seldom provided, as was previously also found in a review by Murad and Varkey (2008). Some evidence was found that problem-based learning (PBL), as a form of SDL, links with improved graduate competence, particularly in terms of the knowledge domain (as opposed to skills and attitudes) and to the use of clinical guidelines. If self-management and personal autonomy are seen as outcomes in themselves, as argued by Hiramanek (2005), a stronger link is demonstrated between SDL and outcomes in HPE. If one assumes that PBL is equivalent to SDL, which is a common belief in HPE, the case is further strengthened. A systematic review of the curricular effectiveness of PBL in medical schools found that it had a positive effect on physicians' performance and competence after graduation (Karimi, 2011).

A wide range of factors were seen to promote SDL, with the most common being a facilitative relationship between learners and teachers/mentors; self-motivation and confidence; group work and peer feedback; methods to track progress including learning contracts; prior learning, particularly including experience in SDL; individual learning styles and propensity towards lifelong learning; and self-efficacy. While noting that the scaffolding of SDL, which is essential, requires mentoring by well-trained facilitators, multiple short reflections were found to enhance students' clinical reasoning, while saving time for clinical faculty members (Bok, 2013).

The link to lifelong learning was assumed, without evidence being presented regarding this connection. It is argued that the advantages of SDL include facilitating the development of skills for lifelong learning (Levett-Jones, 2005; O'Shea, 2003), but no evidence was provided for the effectiveness of SDL in developing lifelong learning.

No explicit links were found in the literature to decentralised learning, but it was implicit in some articles, such as a recent program description emanating from Makerere University in Uganda (Galukande, 2015). It is important that SDL is described as being context-specific (Jennings, 2007) and that students learn better in a real context (Towle, 1996); appropriate context is a major reason for decentralised training. It was also noted that the effectiveness of SDL increases with lower tutor: student ratios (Cadorin, 2015) which are often found in decentralised training sites. A number of articles allude to the resources required for SDL, even more so on a decentralised platform, which accords with comments by Tough (1979), who described the strong reliance of adults on external resources, both human and material, in carrying out learning projects.

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Discussion

Despite challenges raised in the general educational literature, most authors in this review accepted and used Knowles' definition of SDL. This is often problematic, because of the limitations within which HPE largely functions. Brookfield argues that the most fully adult form of SDL occurs when the technical process of SDL (the steps defined by Knowles) is combined with internal change arising from critical reflection (Brookfield, 1985). This accords with Mezirow's understanding of learning as a process of developing meaning, in which we interpret our experiences and seek to validate that understanding (Mezirow, 1985). How much of that is actually taking place within the circumscribed SDL described in much of the HPE literature is unclear.

A major issue in SDL is for the teacher to be a facilitator of learning, and not a provider of information (Brockett, 1983). This is a challenge for much HPE. The predominant ethos and style of HPE is still a teacher-centred one, fitting in with the hierarchical nature of hospital-based health care and the culture of the expert that prevails in medicine, with changes towards a transformative educational process happening slowly.

As noted by Brockett and Hiemstra (1985), true SDL is seldom achieved in institutional settings because the inherent structure of such institutions impose limits on self-directedness. In this regard, Ash (1985) describes SDL as a process that an individual uses to accomplish program objectives of a health professions education department (in her case, nursing education) in an institutional setting. The latter is certainly how SDL is largely understood in HPE. Ash goes so far as to question whether it is possible to achieve SDL in a hospital setting, if it is defined as adults being involved in the planning, conduct and evaluation of their own learning. (Ash, 1985)

The importance of context is a factor that requires further consideration in relation to the objective to determine the role of SDL in decentralised HPE. To be successful in SDL, learners must be highly aware of context, in that their learning occurs in a social setting in which the knowledge, attitudes and practices of fellow learners are crucial elements for success (Brookfield, 1985).

Many assumptions about SDL are made. The belief that the outcomes of graduates will of necessity be improved through SDL, and specifically its surrogate, PBL, is widely reported, but little evidence is provided. Similarly, the case is not made for why SDL produces lifelong learners, although many of the articles state this as a given. It seems this is not a unique problem in HPE; "it is not uncommon to hear practitioners and theorists declaring as self-evident a number of doubtful propositions that make self-directed learning the goal and method of adult education" (Brookfield, 1985, p.5)

Outcomes

Curriculum change is an ongoing, never-ending process. Changing the curriculum may enhance SDL and thus, possibly, lifelong learning. SDL can improve academic performance and also competence, as well as self-motivation and efficacy. Whether or not it does this more effectively than other forms of learning in HPE, and whether these attitudes link to lifelong learning, is not clear.

The role and impact of SDL in specific clinical contexts where health professions education occurs, including decentralised training sites, requires further exploration.

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APPENDIX 1:

<u>The Way forward</u>

1. The process of reviewing all articles and populating the spreadsheet will be completed, and a final analysis will be carried out.
2. An abstract was submitted for presentation at the HELTASA conference in November 2016 (accepted for a poster presentation) and a paper will be submitted for an international medical education conference in 2017.
3. An article based on the scoping review will be submitted to a medical education journal by the end of 2016.
4. The project will form the basis of further field-based qualitative research to understand how self-directed learning is perceived by health professional educators in South Africa, and how SDL is being applied in health science faculties, particularly in relation to decentralised training.

<u>The Way forward</u>

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APPENDIX 2:

PRISMA diagram: Process of selecting articles for the review

1134 articles
- Title review - focus on generic health professions training (undergraduate, postgraduate or continuing education)

356 articles
- Excluded articles not available electronically

299 articles
- Abstract review

163 articles
- Full articles downloaded review

154 articles
- ERIC search*

166 articles

*Additional search in Education Resources Information Center (ERIC) database, using terms "self-directed learning" and "health profession", yielded 12 new articles after following same processes.

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