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Using in-depth interviewing to evaluate deep learning in students who use online curriculum: a literature review

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Using in-depth interviewing to evaluate deep learning in students who use online curriculum: a literature review.

Abstract

There are numerous difficulties associated with evaluating student experience of online curriculum, not least of which is the fact that different research methods elicit different types of information. The usefulness of choosing either quantitative or qualitative methods depends on their power to bear upon the research questions. This concept paper presents the learning experience as a qualitative event and argues that the in-depth interview is an apt tool for discovering to what extent students experience deep-learning in studying online subjects. To this end, this concept paper will consider the literature surrounding the in-depth interview as a research method. It will look at why interviews are used, what characterises an in-depth interview, the strengths and weaknesses of the method, and how interviewer skill and technique affects data quality. This paper argues that using in-depth interviews as part of a mixed method approach to evaluation strengthens the picture of what type of learning occurred and at what levels. This in turn leads to further ideas of how online subjects can be modified to enhance deep learning and so ensure continuing quality of educational practice at tertiary level.
Introduction
The assessment of students is a serious and often tragic enterprise. (Ramsden, 1992, p.181)

As online curriculum becomes more prevalent, it is essential to devise appropriate means of evaluating the teaching-learning experience that students receive through this study medium. However, there are a number of difficulties associated with evaluating student experience of online curriculum, not least of which is the fact that different research methods elicit different types of information. Consequently, the guiding factor when choosing either quantitative or qualitative methods should rest upon on a particular method’s power to bear upon the research question.

As this concept paper presents the learning experience as a qualitative event, it subsequently argues that the in-depth interview, as a qualitative research method, is an apt tool for discovering to what extent students experience deep learning in studying online subjects. To this end, this concept paper will consider the literature surrounding the in-depth interview as a research method. It will look at why interviews are used, what characterises an in-depth interview, the strengths and weaknesses of the method, and how interviewer skill and technique affects data quality.

This paper also argues that using in-depth interviews as part of a mixed method approach to evaluation strengthens the picture of what type of learning occurred and at what levels. This in turn leads to further ideas of how online subjects can be modified to enhance deep learning and so ensure continuing quality of educational practice at tertiary level.

What is the purpose of higher education?
Before looking at the in-depth interview as a research method for evaluating online curriculum, it is important to reflect on the kind of graduates universities want to see from their system. After all, what constitutes quality educational practice depends very much on what we understand the purpose of higher education to be (Alexander, 1995).

At the national level, the Senate Standing Committee on Employment, Education and Training (1990) reported on the qualities which graduates from Australia’s higher education institutions should possess. In addition to the broader aims about being good communicators, ‘lifelong learners’ and being familiar with the society in which they are going to practice their professions, the a number of recommendations were also made. These were that graduates should possess a capacity to:

- look at problems from a number of different perspectives
- analyse
- gather evidence
- synthesise and
- be flexible, creative thinkers (xiii, p. 3.)

This list implies that students need to be able to do more than just access information — they need to be able to do something with that information. Such behaviour requires students to engage...
in 'higher order' thinking processes (1990, p. 28). Quality educational practice, therefore, reflects these concepts and seeks to foster these qualities in students by embedding them in online curriculum. The term 'learning', however, is understood differently by individuals and it is important to be aware of the variation in meaning since the way educators understand learning has a significant impact upon the teaching strategies they adopt (Alexander, 1995).

**Deep and surface learning**

One of the most widely reported studies into learning strategies is that of Marton and Saljo (1975, 1976) who carried out an interview study of what individuals understood by learning. In this study they identified two 'functional differences in the level of processing' which they felt might explain the differences in outcome of learning. These two distinct approaches to learning were characterized by 'surface-level processing' and 'deep-level processing' (Marton & Saljo, 1976, p. 9). Very broadly, this study found that students who engage in a learning task with the intention of understanding or seeking meaning are said to be adopting a deep learning approach, while those who engage in a task with the intention of memorising information are said to be adopting a surface learning approach.

According to Ramsden (1992, p. 48 & 54) the concept of memorizing conveys the idea that learning is something external to the learner. Deep learning, on the other hand, is characterized by the more complex task of internalising principles and reapplying those principles to other situations. In contrast to a surface approach, a deep approach to learning implies an active, rather than a passive, orientation. A model of active learning rejects the notion that students are 'empty vessels' waiting to be filled with the knowledge imparted by the lecturer or expert (Absalom, 1999; Holstein & Gubrium, 1995, p. 8). It therefore follows that, because deep learning is consistent with higher education goals for graduates, quality education practice should foster this concept. The difficulty, however, lies in how to evaluate the extent to which students experience deep learning and higher order thinking. This is a particular concern for online subjects which do not have face-to-face contact between students and lecturers. As a surface level approach to learning is 'qualitatively different' (Marton and Saljo, 1976) from a deep approach to learning, this paper argues that the qualitative research method of the in-depth interview is an apt tool to explore the incidence of deep learning in students engaged in online studies.

**Literature review**

If you want to know how people understand their world and their life, why not talk with them? (Kvale, 1996, p. 1)

I interview because I am interested in other people's stories (Seidman, 1991, p. 1).

The skilled questioner and attentive listener knows how to enter into another's experience (Patton, 1990, p. 278).

**Introduction**

A review of the literature serves to put the in-depth interview, and its application to educational research, in context. One of the major concerns of the literature surrounding the evaluation of student
learning is that educators cannot assume that high scores in assignments or exams are an indication that students are learning at a deep level (Marton & Saljo, 1976, p. 4). Nor do marks necessarily reflect the degree to which students engage with concepts, or the degree to which they can apply theory to practice in a real situation. In fact, Marton and Saljo (1976, p. 7) make the point that the outcome of learning is not as important as the process of learning. This concept is supported by Von Glasersfeld (1987, p. 11) who states that, for students to be competent it is not enough to understand what they are doing, they must also understand why it is right. The only way to obtain this sort of information from students about their learning experiences is to ask them (Kvale, 1996, p. 1; Patton, 1990, p. 278; Seidman, 1991, p. 1). According to Seidman, interviewing is 'a powerful way to gain insight into educational issues through understanding the experience of individuals whose lives constitute education' (1998, p. 7).

**What is an interview?**

Researchers have come up with numerous definitions of the interview. According to Brenner, Brown and Canter (1985, p. 3) an interview is taken as any interaction in which two or more people are brought into direct contact in order for at least one party to learn something from the other. Kvale (1996, p. 2) describes the interview as an 'interview', that is, an 'interchange of views between two persons conversing on a theme of mutual interest'. Many researchers liken the interview to a conversation that has a structure and a purpose (Kvale, 1996, p. 6; Lincoln & Guba, 1985, p. 268; Rubin & Rubin, 2005, p. 12 & 79; Liamuttong & Ezzy, 2005, p. 55). However, the research interview is not a conversation between equal partners, because the researcher 'defines and controls' the situation (Kvale, 1996, p. 6). Instead, the interview becomes a careful questioning and listening approach with the purpose of eliciting detail about people’s life experiences (Kvale, 1998, p. 6; Rubin & Rubin, 2005, p. 4; Seidman, 1998, p. 3).

**Different sorts of interview**

There are many forms of the research interview which, in turn, cover a wide range of practices (Brenner, Brown & Canter, 1985, p. 1; Rubin & Rubin, 2005, p. 5). These range from tightly structured, survey interviews with preset, standardised, normally closed questions and quantitative in nature to open-ended, apparently unstructured, anthropological interviews that closely resemble conversations and are generally qualitative in nature (Briggs, 1986, p. 20; Ellen, 1984, p. 231; Liamuttong & Ezzy, 2004, p. 54; Fontanna & Frey, 2000, p. 645; Lincoln & Guba, 1985, p. 268-9; Holstein & Gubrium, 1995, p. 7; Mishler, 1986, p. 14-15; Rubin & Rubin, 2005, p. 12; Seidman, 1998, p. 9). Not only can the interviews be categorised by their 'degree of structure', but they can be categorised further by their 'degree of overtness' and the quality of the relationship between interviewer and participant (Lincoln & Guba, 1985, p. 268; Holstein & Gubrium, 1995, p. 4). Because of its multitudinous forms, the interview has been found to be useful and valuable in a diversity of contexts (Brenner, Brown & Canter, 1985, p. 1). However, in order to choose the most suitable form of interview for a particular research, it is important to understand the theory underpinning the research framework as the method follows from theory (Denzin, 1997, p. 21; Kvale,

The in-depth interview

...how you study the world determines what you learn about the world (Patton, 1990, p.67).

One definition of the in-depth interview positions it midway on the interview continuum between the highly structured, standardised survey on the one hand, and the unstructured, open ended life history on the other (Fontana & Frey, 2000, p. 646). In-depth interviews are also called focussed interviews, non-directive interviews, open-ended interviews, unstructured interviews, active interviews, and semi-structured interviews (Liamputtong & Ezzy, 2005, p. 52). As there are some differences in emphasis, this paper will adopt the term in-depth interview.

As previously mentioned, choosing an appropriate method to suit a particular task depends upon the nature of the researcher’s view about the physical and social world (Pring, 2000, p. 43). The in-depth interview fits within the theoretical framework of qualitative research because it rests on the ontological assumption that the world is not an ordered place that can be measured objectively (Eisner, 1991, p. 44) and takes the epistemological view that knowledge is individually constructed (Pring, 2000, p. 47). Holding the view that social reality is the product of meaningful social interaction binds the researcher to understanding social phenomena from the actor’s perspective (Minichiello, Aroni, Timewell & Alexander, 1995, p. 2).

Because in-depth interviews are more like conversations than structured questionnaires, they can be used to explore the complexity and nature of meanings and interpretations that cannot be examined using positivist methodologies that just tally results (Liamputtong & Ezzy, 1999, p. 51; Weiss, 1994, p. 1 & 2). In-depth interviewing encourages people to reconstruct their experiences actively within the context of their lives and treats individuals as ‘the heros [sic] of their own drama’ (Brenner, Brown & Canter, 1987, p. 3). To reflect this idea, this paper chooses the word ‘participant’ to refer to people who are interviewed. As Seidman (1998, p. 8) argues, that word seems to capture both the sense of active involvement that occurs in an in-depth interview and the sense of equity that the interviewer tries to build into the interviewing relationship.

Strengths and weaknesses

Like every research method, the in-depth interview has inherent strengths and weaknesses. The disadvantages in using the in-depth interview include the fact that it is a time consuming, labour intensive, expensive process, and, as a result, the sample group is necessarily small (Darlington & Scott, 2002, p. 53). Another potential problem when considering the in-depth interview in an online environment, is the practical one of how to contact and meet with participants. This point will be discussed later.

An interesting point about the literature surrounding the in-depth interview is that while researchers using the method are careful to point out the limitations and obstacles associated with the practice, the general consensus is that, as a tool for investigating people’s life
experiences, the advantages of the method outweigh the disadvantages. As mentioned earlier, the in-depth interview is informed by a qualitative ontological and epistemological view of the world which embraces the subjective nature of reality and holds the view that knowledge is socially constructed (Douglas, 1974, p. 12; Silverman, 1993, p. 91). This orientation is one of the greatest strengths of the method and is a major advantage in the context of educational research as it allows participants to reflect upon, interpret and give voice to their experiences by providing a vehicle within which students can articulate the nature of their learning pattern.

Why use the in-depth interview to evaluate online curriculum?
As mentioned earlier, traditional online assessment involves tallying scores, but a high score outcome is not necessarily evidence of a deep-learning process. This problem is exacerbated in an online environment as there is no personal contact between student and lecturer. All communication is done via the computer. An in-depth interview allows for personal interaction and communication beyond the typed word. In particular, nonverbal cues add a new level of communication that is absent from online communication.

Another aspect of the in-depth interview is its versatility in the way the data can be used. The in-depth interview can be used either as the sole research method, as in the Marton and Saljo (1976) study, or used in combination with other methods where multiple data sources undergo triangulation, that is, 'cross-checking of data and interpretations' (Lincoln & Guba, 1985, p.109). The advantage of using the in-depth interview as part of a mixed method approach to evaluate online curriculum is that the data provides a system of checks and balances which can strengthen the picture of what type of learning occurred, and at what levels. This, in turn, can lead to further modifications to enhance the teaching-learning capacity of online curriculum and so ensure continuing quality of educational practice.

Studies which use interviews to evaluate the nature of the learning experience.
Recent studies by Hulten and Booth (2002) and Houldsworth and Hodgson (2002) replicated the Marton and Saljo (1976) studies, and used in-depth interviews to discover evidence of deep learning experienced by tertiary students engaged in various online curriculum. From the successful outcome of these studies, one might be forgiven for assuming that the interviewing process is a seamless and relatively uncomplicated procedure. Other research, however, has suggested that, whilst agreeing in theory that the in-depth method is a useful and appropriate research tool for education, administering the method skillfully is another matter. According to Patton (1990, p. 279) although a deep and genuine interest in learning about people is essential, it will lead nowhere without 'disciplined and rigorous inquiry based on skill and technique'.

Hosie (1986) and Partington (2001), respectively, raise the issue of skill and technique. Both papers discuss the process of the in-depth interview method by examining the relationship between interviewer skill and data quality and identify interviewer technique as the most significant factor likely to affect the
outcome. According to Partington, effective interviewing is a complex task which requires attending to a range of skills and information all at the one time. Partington maintains that the quality of data obtained can vary considerably depending upon the skill of the interviewer in establishing rapport, following up leads, and demonstrating attention and interest. Berry (1999) also addresses the issue of technique. Berry’s report on how she used the in-depth interview as a research method to collect data for her study identifies nine useful probing techniques for in-depth interviewing, and gives an example for each one. Berry’s conclusion cautions researchers to familiarise themselves with questioning techniques informed by the literature and exhorts novices to gain ‘hands-on’ experience of these techniques before entering the field.

Dortins (2002), on the other hand, looks at issues affecting data quality from a different angle and takes a reflective look at the data obtained in interviews. The paper begins by acknowledging that data quality is dependent, to a large extent, upon the relationship between interviewer and participant, as well as on the skill and experience of the interviewer, and establishes the interdependence of the two issues. This paper then goes on to explore the transcription as a transformative process and examines the problems inherent in translating from one medium into another. Dortins discusses this issue both from the perspective of spoken to written language, and from living and personal conversation to a ‘frozen’ text which is to be read analytically (Kvale 1996, p. 165). Dortins notes that not only are the changes of meaning involved in the translation ‘palpable’, but, often, spoken language appears as ‘inarticulate utterings’ when expressed in written form (Kvale, 2002, p. 208). The paper concludes that an awareness of these inherent difficulties in analysing data contributes to quality results and that reflection on the process of the interview can only increase the integrity of our practice and enrich the research experience.

**Difficulties with administering the in-depth interview in an online environment**

One of the challenges facing interviewers who wish to interview online students is how to contact them. The project I am currently involved with has come up with a simple solution for contacting students and inviting them to participate in an in-depth interview. At the end of the semester the target population, which consists of ECU undergraduate computer science students enrolled in a particular AI games simulation class, will be asked to respond to a routine on-line survey form. An email link will be placed at the end of their online survey form so that any students interested in participating in an in-depth interview will be able to contact the researcher directly via this link. In this way anonymity will be preserved, as the researcher will be the only person who will have contact with the students. If there are concerns about whether or not enough students will respond, the researcher can always consider some form of incentive, such as offering a small prize for a lucky participant.

**Conclusion**

In the context of evaluating on-line curriculum, the in-depth interview is generally regarded as a useful method for gathering data about learning patterns as it forms a framework within which students are encouraged to reflect
upon, and articulate about, their learning experiences with online subjects. In addition, using the in-depth interview data as part of a mixed method approach provides a system of checks and balances which can strengthen the picture of whether or not students experience deep-learning and at what levels. This, in turn, can lead to further modifications to enhance the teaching-learning capacity of online curriculum and so ensure continuing quality of educational practice. However, while both the literature and the research support using the in-depth interview to evaluate the occurrence of deep learning in students, there are, clearly a number of difficulties which face the researcher who wishes to conduct interviews in an online environment. These range from how to go about contacting students and ensuring a large enough sample group through to eliciting quality data. Unfortunately, while the literature encourages novices to familiarise themselves with the techniques of in-depth interviewing before engaging in the field of research, there is no general consensus on how a novice attains the skill and experience needed to produce quality data. Yet, despite these obvious drawbacks, there is a uniform agreement throughout the literature that the benefits of in-depth interviewing far outweigh the difficulties and that by identifying and exploring the weaknesses and limitations of the method and working through the problems, this will enhance methodological rigour and add to the integrity of the outcomes.
References


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