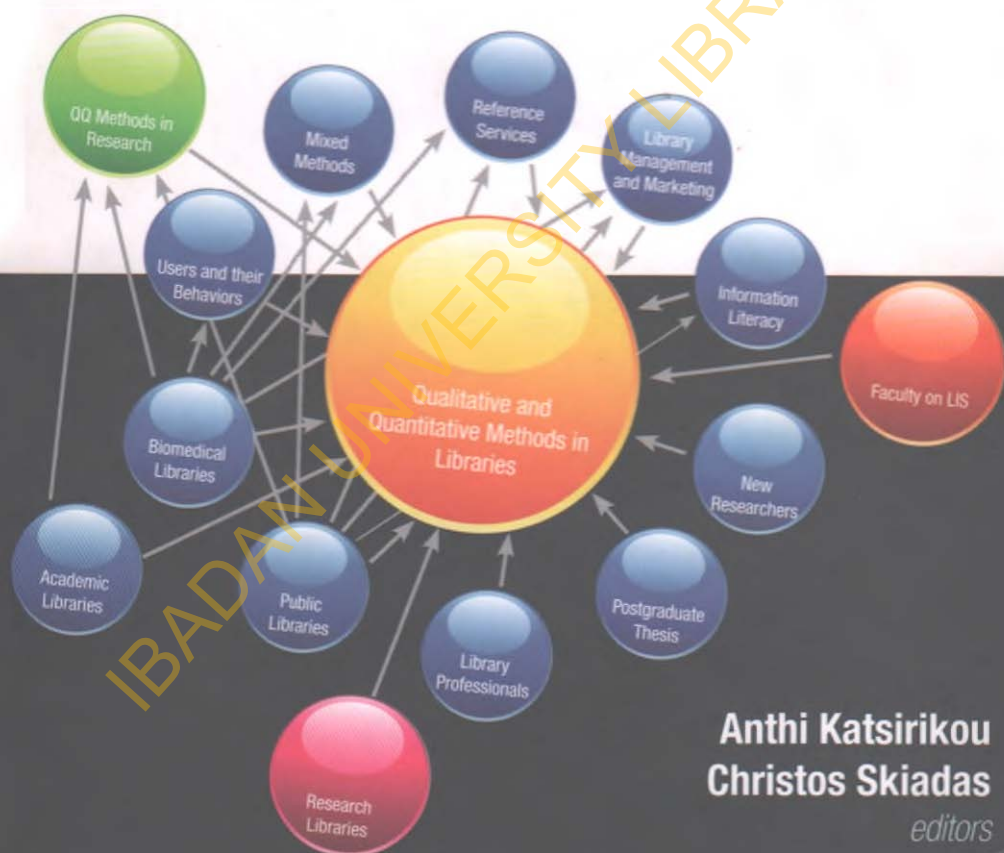


New Trends in Qualitative and Quantitative Methods in Libraries



Anthi Katsirikou
Christos Skiadas
editors

New Trends in Qualitative and Quantitative Methods in Libraries

Selected Papers Presented at the 2nd Qualitative and
Quantitative Methods in Libraries

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Editors

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Chapter 3. Using Qualitative and Quantitative Methods in Digital Library Education and Research

The Use of Phenomenographic Approach to Investigate Students' Conceptions of the Use of Web 2.0 Tools

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Abstract: This paper discusses the data collection instrument and data analysis using phenomenography, a qualitative research approach used to investigate DILL students' conceptions of the use of Web 2.0 tools. The research was undertaken as researcher's master's thesis in the digital library learning programme at the Institute of Information Studies, Tallinn University. The iterative process of phenomenography research specialization and justification for its use for the current study are discussed.

Keywords: Web 2.0 tools, phenomenography, DILL students, semi-structured interview, categories of description, and outcome space

1. Introduction

In the past five years the use of Web 2.0 tools has permeated many human spheres including higher education sector. Its incorporation into higher education is a new phenomenon, though many higher education institutions have experimented with it. Consequently, evidence showed that its incorporation into higher education sector is not without challenges or problems (Franklin and Harmelen, 2007). The challenges of the incorporation of Web 2.0 tools into higher education, include, the students' preferences of the use of Web 2.0 tools and the required skills to use it. Therefore, the aim of the research was to acquire a deeper understanding of Digital Library Learning (DILL) students' conceptions of the use of Web 2.0 tools focusing on students' preferences and the required skills to use Web 2.0 tools. DILL programme is an international master in Digital Library Learning which runs among three European universities (Oslo University College, Norway, Tallinn University, Estonia and Parma University, Italy).

To achieve the aim of the research, the following research questions were framed.

Research Questions

1. How do DILL students experience Web 2.0 tools?
2. What are the DILL students' preferences of the use of Web 2.0 tools?
3. What are the required skills to use Web 2.0 tools?

Scope and Limitations

- The target sample for the study was DILL students (groups 2 and 3) from Africa and Asia, other DILL students were not considered.
- Only English language literature was reviewed for the study.

This paper examines phenomenography, a research approach used by the author for her master's thesis.

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2. Methodology

The study is based on interpretivist paradigm and qualitative research design. Phenomenographic approach was used with semi-structured interviews. Data analysis was done phenomenographically which resulted in four categories of descriptions and an outcome space. This paper discusses the phenomenographic research approach from the data collection to results' stage.

Phenomenographic Research Approach

Phenomenography was etymologically derived from two Greek words '*phainomenon*' which translates as appearance and '*graphein*' which means to describe in words or picture (Hasselgren and Beach, 1997, p.192). It originated from the Department of Education and Educational Research, Goteborg University in Sweden in the 1970s. It is a qualitative research approach which aims at understanding different ways a group of people conceptualize, perceive, understand, or experience a phenomenon, in order to bring out different variations in their experiences. Marton and Booth (1997, p.136) define phenomenography as a research approach that "aims to reveal the qualitatively different ways of experiencing various phenomena".

Ontological assumption of phenomenography is subjectivist, a non-dualist view and second order perspective. It is an empirical approach to study other people's perspective of the world around them and devise collective categories of description that describe the variation of these experiences (Marton and Booth, 1997, p.116). Orgill (2002) notes that the intent of phenomenographic research is to identify multiple conceptions or meanings that a particular group of people have for a particular phenomenon. In this study, the researcher investigated DILL students' experiences to identify multiple conceptions of Web 2.0 tools. In other words, the researcher looked into the use of Web 2.0 tools through the perspective of DILL students.

Research Sample

In phenomenographic study, the samples are traditionally small and purposive in order to cover variations of experience in population being covered. The population for the current research was DILL students set 2 and 3 from Africa and Asia. The sample size was two DILL students for pilot study and twelve DILL students for the main study. Six DILL students from each of the two continents comprising of three males and three females from each of the two continents.

Phenomenographic Data Collection Instrument

The study used an interview which is the main and richest data collection instrument in phenomenography (Marton, 1994; Akerlind, 2005). An interview is a descriptive qualitative and an in-depth data collection instrument (Pickard, 2007). In phenomenographic interview the motive is to elicit the meanings and variation in meanings of a phenomenon through the interviewee's experience of such phenomenon. The interviewee gives examples of how he or she have experienced the researched phenomenon (Akerlind, 2005). That is, the example is to show what the interviewee thinks about the phenomenon at the point of the interview to reveal the interviewee's awareness level of the phenomenon.

In this regards, how DILL students experienced the use of Web 2.0 tools revealed their level of awareness. The current study used the phenomenographic preferred method of data collection, a semi-structured interview, with open-ended questions which aim to persuade the interviewees to focus on describing their experience of the phenomenon. A semi-structured interview has a pre-determined interview guide where all the relevant areas of the topic have been listed in the questions but the

interviewer is free to expand it. Apart from the interview guide the interviewer could ask other probing questions (Pickard, 2007).

The interview sessions were conducted using a natural conversational approach aiming to move from the general to the specific (Akerlind, 2005). Importantly, the interviewer bracketed her opinion on the phenomenon in order not to influence the interviewees and for validity of the data (Ashworth and Lucas, 2000). The main interview questions were (1) what do you think Web 2.0 tools are all about? How have you used them? Which of them do you use? Why do you use those Web 2.0 tools you mentioned? What skills do you think would be required to use these tools effectively in your opinion? How did you acquire these skills? What skills do you think you still need to enhance your usage of Web 2.0 tools? Also, other unstructured questions were asked to further probe the interviewees. The interview sessions were audio recorded for transcription purpose.

Phenomenographic Data Analysis

The data analysis in phenomenographic research aims at developing categories of descriptions which represent different ways of understanding a phenomenon, and an outcome space or 'giving' a map of the 'collective mind', (Marton, 1994), which are the phenomenography results. The analysis was iterative and in stages which included familiarization, condensation, comparison, grouping, articulating, labelling and contrasting to arrive at categories of description and outcome space (Bruce, 2003; Alsop and Tompsett, 2006).

The first phase is the transcription of an interview or "utterances of research subjects" (Hasselgren and Beach, 1997). In the current research, each interview session was transcribed verbatim immediately after each session, besides, the raw interview transcripts were used and manually analyzed. It was rigorous and iterative to get all the information transcribed verbatim. Having done the transcription, the researcher got familiarised with the transcripts, by reading through it several times, then condensed and compared the data.

The next stage was grouping of the data; the framework for this stage of the data analysis is based on referential components, the dimension of variation and structure of awareness (Marton and Booth, 1997). The referential aspect is the "what" of an experience or phenomenon, the core meaning given to a phenomenon or object of research by the respondent. For the current research, the core meaning that DILL students gave to the use of Web 2.0 tools.

The dimensions of variation are aspects or factors that are common to all the categories of description yet which are experienced differently in each category and it results in some expansion of awareness. These factors are presented as phenomenographic "dimensions of variation" (Boon, Johnston and Webber, 2007, p.214). In this study the dimensions of variation were the contextual focus, the preferential focus and the skills focus. The variation focuses on the context within which Web 2.0 tools were experienced by the DILL students; the students' preference among Web 2.0 tools; and the skills required and its acquisition to use Web 2.0 tools.

The structure of awareness is the "how" of an experience or phenomenon. It could be explained as what the subject is aware about an object at the time of the expression of the experience of that object. Marton and Pang (1999) note that structure of awareness in phenomenography analysis framework is a modern trend and it has been emphasized in the recent research. It consists of what Booth (1997) called 'theme', and Bruce (2003) referred to as 'internal horizon'. Internal horizon or theme is the central focus or initial theme (theme of awareness) that comes to the mind of subject/student when faced with an object/problem, The second element is 'thematic and margin' (Booth, 1997) or 'external horizon' (Bruce, 2003) which is the other

associated both relevant and irrelevant themes present at the time of the awareness but recede at the background. For the current study, internal and external horizons were used for the structure of awareness.

At the initial stage of the grouping several themes were discovered. Afterwards, it was reduced to four articulated groups because the main aim of phenomenographic research is to identify small number of qualitatively distinct descriptive categories of the ways a group of people experience a phenomenon (Booth, 1997), in this context, Web 2.0 tools. Then the four categories of descriptions were labelled, the labels were taken from the interview transcripts.

Phenomenographic Results

As mentioned above, categories of description and outcome space are results of phenomenographic study. For the current research four distinct qualitative categories of descriptions were discovered: category 1: communication tools conception, category 2: educational tools conception, category 3: professional tools conception and category 4: multi-purpose tools conception. Subsequently, an outcome space was constructed. In phenomenography, outcome space is the articulation of a comprehensive expression of the researched phenomenon and it is often presented in a hierarchical way (Marton, 1994). The outcome space for this study is presented below in Fig. 1.

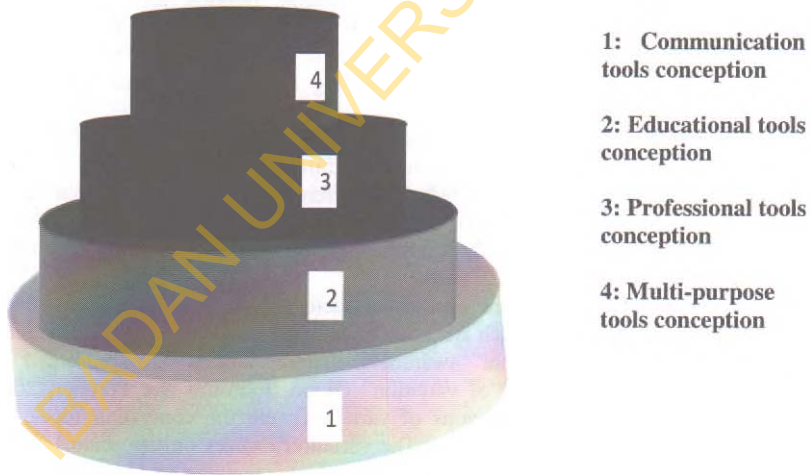


Fig.1: Outcome space showing the four categories of description of Web 2.0 tools of DILL students in hierarchical order.

3. Justification of Phenomenographic Approach for the Current Study

Phenomenographic approach was chosen for the current study because the research aimed to acquire a deeper understanding of the Digital Library Learning (DILL) students' conceptions of the use of Web 2.0 tools. To achieve this aim, phenomenography was found to be appropriate because it is a research approach that brought out the holistic variation in experience, with simplicity and elegant

descriptions of the experience of the phenomenon. The focus of this study was on collective holistic variation of the experience of DILL students and the structural relationship between the different ways of experiencing Web 2.0 tools. Besides, the incorporation of Web 2.0 tools in higher education sector is a new phenomenon, thus, phenomenography is suitable to bring a detailed qualitative data.

4. Conclusions

A phenomenographic research approach was used to investigate students' conception of the use of Web 2.0 tools. Using phenomenographic research approach, four distinct categories of descriptions of the use of Web 2.0 tools were discovered and thereafter an outcome space was constructed. This research results brought out a detailed qualitative data on the use of Web 2.0 tools by the DILL students (sets 2 and 3) from Africa and Asia.

Importantly, the results of this research are limited to the group of DILL students studied. Therefore, there is a need for further research to study other groups of students if the results might be similar or different.

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