



Perceptions, Attitudes and Digital Efficacy towards OER of Teacher Educators: A Computer Assisted Qualitative Analysis of the Mixed Study

KEYWORDS

computer assisted qualitative data analysis, teacher education, open educational resources, perceptions, attitudes, digital efficacy.

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ABSTRACT *The present paper presents the use of computer assisted qualitative data analysis software (CAQDAS) for the qualitative-research of the mixed study. The qualitative study was phase one of the mixed method study and it was based on the sequential exploratory design. The CAQDAS Dedoose is an easy-to-use, collaborative, web based application that facilitates all types of research data management and analysis. The software was used for the qualitative analysis and to interpret emergence of patterns from the study. A sample of ten teacher educators from colleges of education affiliated to University of Mumbai. Semi-structured interviews were conducted and transcribed. The perceptions, attitudes towards Open Educational Resources (OER), perceived usefulness and perceived ease of use of OER were the endogenous variables and the exogenous variable digital efficacy of the study. The TAM model was proposed as a reference for study of use of OER and from the qualitative analysis a revised model was developed.*

INTRODUCTION

In a 2006 survey conducted by the Organisation for Economic Co-operation and Development (Hylén, 2006) more than half of the sample of OER users was comprised of educators. They found that motivation to use these resources came from the practitioners and not from administrative guidance. In teacher education colleges affiliated to University of Mumbai still fail to tap the valuable and rich educational resources from the OER repositories and do not create much resources as OER for global use.

DEFINITION OF OER: An open educational resource(OER) is any educational material that uses a Creative Commons license or resides in the public domain (i.e., outside of copyright regulation).the researcher finds the definition of OER relevant to indian needs. It is defined as “Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation.”

The present research was conducted in two phases. The phase on was qualitative study followed by phase two of quantitative study. The phase one was based on grounded theory and inspired by the activity theory.

NEED OF THE STUDY: The phase one research was qualitative because the researcher wished to conduct an indepth study into the cognitive, affective and the behavior aspects of teacher educators in context to OER. The pursuit of the truth was of great interest to the researcher since the teacher education programs have remained outside the benefits of OER that it has to offer.

DESIGN OF THE STUDY: The design was sequential exploratory research design because the study is exploratory with the intention to find out the reasons the teacher educators do not adopt, use or share OER. The variables of the study based on the cognitive, affective and behavioral components of OER were attitudes towards OER (AT), Perceived Usefulness (PU), Perceived Ease of Use (PEU), digital efficacy (DE), and actual use (AU). The actual use included the intentions of the use of OER since the intentions to use would eventually lead to actual use of OER

Major Categories of OER Research:

OER research can be put into four categories: models of sharing OER, models of producing OER, the benefits associated with OER, and the challenges associated with OER.

The place of OERs in India has a special place because of the large multitude of students who have no quality access or even access to education. The constitutional obligation of the Indian constitution to the “ right to education “ can be facilitated and realised by none other than open education and open education resources.

RESEARCH DESIGN AND METHODOLOGY: The research design was based on activity theory and the qualitative study was a sequential exploratory design. The Qualitative research was conducted to find the reasons and the teacher educators' perceptions, attitudes, and their digital efficacy towards OER. The general perceptions were studied and two specific areas of perceptions related to use were also studied. They are Perceived Usefulness and Perceived Ease of use. These two constructs came into existence from the TAM model given by Davis and Venkatesh (1989) where the Technology Acceptance Model (TAM) was studied in context to use of technology. The study proposed a modified model based on the TAM model which is shown below.

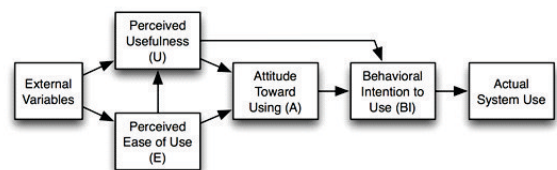


Figure 1: TAM model for use of technology (Davis and Venkatesh, 1989)

The qualitative study was conducted with the help of semi-structured interviews of ten teacher educators (TE), teaching at colleges of education affiliated to University of Mumbai. The semi structured interview questions were designed after extensive observations of the literature related to cognitive, affective and behavioral aspects of use of OER by TE. The research questions were a guide to the questions of the semi-structured interview. There were about 34 questions covering the aspects of perceptions, PU of OER, PEU of OER, and DE. The questions for the interview were validated for content by three

experts, and after necessary modification it was considered ready to be used for interview. The interviews conducted which were for thirty minutes. It was done after taking necessary permissions from heads of institutions. The memos or notes of the interviews were maintained for the same. The colleges were geographically spread for the purpose of a sample that would be representative. The colleges included aided and unaided, with different medium of instruction namely English and Marathi. The interviews were face to face and in few cases there were telephonic interviews. All the interviews were audio recorded and the Transcribed using software called "Transcribe" which is available at minimal cost for a year at www.transcribew.really.com. These interview transcripts were saved as word or .docx files and were ready to be used in Dedoose software for qualitative analysis.

QUALITATIVE ANALYSIS USING DEDOOSE: The Dedoose Analyze Workspace offers a wide variety of data visualizations. The researcher followed the steps of qualitative analysis namely - marking excerpts, developing codes, tagging the excerpts with codes, the codes were developed dynamically and led to sub-codes. Thus a code tree was formed. The details of the participants were loaded as descriptors that helped in analysis and visualizations. These visualizations have been used to examine the general nature of the data, understand how the code system has been applied to the qualitative content, and expose patterns of variation in the qualitative data and coding activity across sub-groups. The visuals have been exported to facilitate the presentation of research findings, and as filters or windows to drill deeper into findings. These charts, tables, and plots were designed to be as informative, intuitive, and transparent as possible. These data have been used in numerous combinations and flexibly adapted to address the mentioned research questions. Finally, most visuals have a variety of options while online that is found in upper right corner of display, the icons can help to swap display format, expand view, export, include sub-code count.

The different types of graphs and their corresponding data are displayed in tables and graphs. They are

1. Profiles of teacher educators – descriptors in Dedoose
2. Code tree that emerged during data analysis
3. The data and bar charts of codes vs counts
4. The data of each teacher educators vs Codes count
5. Packed Code Cloud (dynamic)

The researcher used only text files as transcripts for the study. Dedoose linked each participant's transcripts with excerpts, codes and the weights of codes. It also gave code count, with weight of the whole group and the individual teacher educator. On starting a new project for the present study the qualitative analysis gave the following data.

The different types of tables and corresponding graphs as bar graphs or grids are presented below:

Table 1: Code X Descriptor – Type Of College

	Aided College	Unaided College
Actual Use of OER	14.4	12
-Intention of use of OER	4.8	1
Attitude towards OER	13.2	51
-access OER	8.4	9
-attitude towards sharing	13.2	23
-attitude towards redistribution of OER	4.8	11
-awareness about Creative Commons licenses	4.8	17
-awareness of OER	21.6	13
-subjective norms	19.2	13

	Aided College	Unaided College
Digital Efficacy	13.2	37
- Cost Of OER	4.8	4
- Know Ledge Of Sharing Back	7.2	4
- Pedagogy Of Teaching With Use Of OER	10.8	16
- Redistribution	8.4	2
- Student Autonomy In Learning With OER	8.4	6
- Time Save For Creating OER	7.2	1
- Various Types Of OER Data And Their Formats	10.8	8
- Perception Towards OER	2.4	56
- Appetite For Open Educational Resources	12	11
- Knowledge Of Use Of Technology	18	12
- Locating OER	13.2	6
- use of Creative Commons licenses	4.8	10

	Aided College	Unaided College
Perception Towards OER	2.4	56
- Appetite For Open Educational Resources	12	11
- Degree of involvement to develop OER	3.6	27
- Information OER in a judicious way	15.6	7
- Open Educational Practices (OEP).	9.6	9
- Usefulness of the Content	10.8	9
- Utility and Impact	14.4	12
- Attitude of Sharing	10.8	8
- Contextualizing OER	2.4	14
- Need Training in OER	6	13
- Quality of Open Resources	4.8	14
- Degree of Institutional Support for Development of OER	7.2	6
- PEU	10.8	10
- PU	38.4	27

The code counts for codes and sub-codes for aided and unaided college thus helped to see the inclinations of the teacher educator's cognitive, affective and behavior in context to OER.

Table 2: A sample excerpt of coding is shown the table2 below:

TE name	Codes assigned	Excerpt of interview of Teacher Educator 3
Tr 3 female Eng Interview 005_2016-07-03_8-28-pm.doc	Actual Use of OER, Attitude towards OER, Digital Efficacy, Appetite for open educational resources, PU	I told you I use YouTube videos in my classroom and then in the presentation. I put the link down from where were the sources that I have taken and then leave the PPT on the lecture hall computer so that all the students can access it.

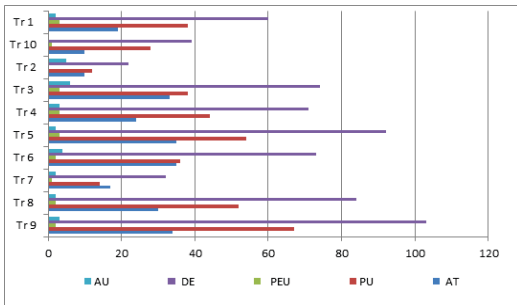
The codes were identified from the implied meaning of the excerpt than descriptive nature of the excerpt. The researcher focused on the intentions of what the teacher educator wished to express than go literal for the context. The following table gives the total code count for each theme, as emerged from the analysis.

Table 3: code count of each theme of teacher educators (Tr)

	AT	PU	PEU	DE	AU
Tr 9	34	67	2	103	3
Tr 8	30	52	2	84	2
Tr 7	17	14	1	32	2
Tr 6	35	36	2	73	4
Tr 5	35	54	3	92	2
Tr 4	24	44	3	71	3

Tr 3	33	38	3	74	6
Tr 2	10	12	0	22	5
Tr 10	10	28	1	39	0
Tr 1	19	38	3	60	2
Totals	247	383	20	650	29

The code count for teacher educator can be seen in the following graph



The computer assisted qualitative analysis gave a sense of quantification by measuring the code frequency, the dominant codes and the contributions of the participants. The visual representations of the graphs and their corresponding data in counts or percentages helped to develop the pattern of the said themes AT, PEU, PU, DE & AU. The codes DE, PU & AT were dominant as seen in the graph and hence a model could be developed based on TAM model which is shown below:

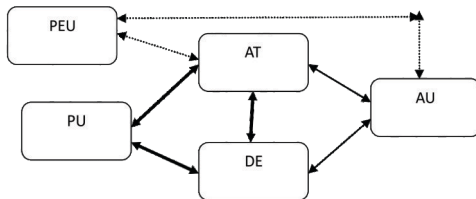


Figure 2: A Model from developed Code Count.

In the figure 2, the thickness of the arrows indicate the code count and their weight and by interpretations from the TAM model, the researcher concludes that perceived usefulness, attitudes towards OER, digital efficacy towards OER will facilitate the use of OER.

The phase two of the study was quantitative and the findings of the blind survey of teacher educators will help the researcher to twine the findings to further strengthen the developed model.

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