DEVELOPMENT OF A PROGRAM ON WEB 2 TOOLS & TEST THE EFFECTIVENESS OF THE PROGRAM

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Abstract:

Sub theme: Innovative & Best practices for excellence

'The great Growling Engine of Change today- Technology'

Web 2.0 technologies have "blurred the line between producers and consumers of content and has shifted attention from access to information toward access to other people" (Brown & Adler, 2008, p. 18). Emphasizing a participatory culture, Web 2.0 technologies encourage and enable teachers and learners to share ideas and collaborate in innovative ways. They also force educators to rethink the way we teach and learn and to transform our education practices so that we can support more active and meaningful learning that involves "learning to be" as well as "learning about."

The study is significant because, today's is the age of digitization and it is very important that teachers make use of ICT in their teaching learning process. Today's students are more technosavy then the teachers so it is very essential to make use of this positive aspect in the teaching learning and making this process a two way learner centered process. The research is a guideline for the teachers to know how technology can be use d in knowledge creation and what difficulties are experienced when using technology.

The present action research is on web 2 tools where tools like blogs, you tube videos and Adobe Flash CS6 is used as a web tool for the student teachers of M. Ed course as these students are would be teacher educators and also would be teachers, heads in different educational institutions. This paper focuses on assessing the awareness of the use of web 2 tools in their teaching learning process and development of a program based on web 2 tools. A program was developed by the researcher for the student teachers and it was implemented for a period of 20 days. The researcher also interviewed the student teachers to find out what they felt about the program. The sample included under the study was 30 student teachers from one teacher education college of Pune City for the program and 67 student's teachers from different teacher education colleges were selected for assessing the awareness of use of web 2 tools. The sample was selected by purposive sampling technique. Multi method approach was adopted by the researcher as the study included survey, product development method and grounded theory. Mixed method design was used as the research included both qualitative and quantitative methods. The research design adopted was convergent parallel design. The tools included open and close ended questionnaire for survey, program on web 2 tools was developed which consisted of lessons to be taught using you tube video sessions, and blogs were created by the students where they posted their discussions or views related to the topics taught. A separate aspect of ADOBE Flash CS6

was also taught to them where they learnt to make invitations cards, banners, certificates as a part of their skill development. From the data obtained analysis was done. The study revealed that most of the student teachers of Pune city had heard about web 2 tools but were unaware of how it could be used in teaching learning process. The program was found to be effective as there was a difference in their post test scores after the program was implemented. The qualitative findings revealed that Use of web 2 tools helps in knowledge creation, better interaction & communication; it provides flexibility in learning for the students they can learn at their own pace and it enriches the teaching learning process. Everyone felt that Adobe Flash CS6 was very beneficial for them as they learnt and got varied experiences and apart from teaching learning it also helped in skill development which is a necessity for the today's teachers'

'It is a time consuming process & if technology fails then the lessons can't be effective, from all the student teachers who participated in the program all were not comfortable using technology. Adobe Flash CS6 was useful but few student teachers could not use the software'.

1.1 Introduction

1. *'The science of today is technology of tomorrow'*

Web 2.0 technologies – such as blogs, wikis, podcasting, social bookmarking, and social networking sites – have allowed users to easily publish content online and to connect and network with other people from all over the world who have similar interests.

Web 2.0 in Teaching and Learning

As addressed above, Web 2.0 technologies have "blurred the line between producers and consumers of content and has shifted attention from access to information toward access to other people" (Brown & Adler, 2008, p. 18). Emphasizing a participatory culture, Web 2.0 technologies encourage and enable teachers and learners to share ideas and collaborate in innovative ways. They also force educators to rethink the way we teach and learn and to transform our education practices so that we can support more active and meaningful learning that involves "learning to be" as well as "learning about."

Web 2.0 has the potential to create more interactive and powerful learning environments in which learners become knowledge creators, producers, editors, and evaluators (Richardson, 2009). Learners' critical thinking skills can be enhanced through the opportunity to regularly compare their own contributions to those of their peers, and the affirmation of their relative standing in the class may be powerful motivation for learning (Hurlburt, 2008). Thus, Web 2.0 technologies has the ability to "support active and social learning, provide opportunities and venues for student publication, provide opportunities to provide effective and efficient feedback to learners, and provide opportunities to scaffold learning in the student's Zone of Proximal Development" (Hartshorne & Ajjan, 2009; Vygotsky, 1978). In addition, Web 2.0 provides numerous opportunities for social interactions and collaboration among students, teachers, subject matter experts, professionals in different fields, as well as a host of others with related interests.

1.2 Significance of the Study:

- Today's is the world of Information & Communication Technology, It is very important that teachers make use of ICT in their teaching learning process.

- Student teachers will be the future teachers enriching the lives of other many more students so it is important that they are aware of using ICT in their teaching learning process
- Today's students are more techno savy than the teachers, so it is the challenge for the teachers. This study will help the teachers to understand how to use web 2 tools in their teaching learning and it will also benefit them with new outputs which they can give to their students.
- It will also help them to develop an understanding of how different experiences can be gained by students after the use of web 2 tools.
- It will also help the student teachers to understand what are the different barriers in the use of web 2 tools

1.3 Statement of Problem:

To develop a program on Web 2 tools for students of M. Ed Course and to test the effectiveness of the program.

1.4 Objectives of the Study:

- To assess the awareness of M. Ed students towards the use of Web 2 tools in teaching learning.
- To develop a program based on Web 2 tools for teaching learning among M.Ed students of Pune city.
- To test the effectiveness of the program after the implementation of the program

1.5 Definition of the Terms:

Conceptual Definition:

Web 2 tools:

Web 2.0 is the term given to describe a second generation of the World Wide Web that is focused on the ability for people to collaborate and share information online. Web 2.0 basically refers to the transition from static HTML Web pages to a more dynamic Web that is more organized and is based on serving Web applications to users (Beal,Vangie)

Effectiveness:

The degree to which something is successful in producing a desired result; success (http://www.oxforddictionaries.com/definition/english/effectiveness)

1.6 Operational Definition:

Web 2 tools program:

It is a program which includes teaching the student teachers using various web 2 tools. The tools selected for this study were blogs, Adobe Flash CS6 & you tubes videos. Lessons were developed using blogs & you tube videos in teaching and ADOBE Flash CS6 was taught to the students as a separate component where they learnt to make certificates, invitation cards, banners, newsletters using Adobe Flash CS6 as a part of skill development.

Effectiveness:

It is the difference in the achievement of the pre test & post test scores of the student teachers after implementing the program.

1.7 Hypotheses of the Study:

- **Research Hypothesis:** The program based on Web 2 tools helps in effective teaching learning and creation of knowledge.

- **Null Hypothesis:**

- There is no significant difference between mean scores of post test of experimental group based on Web 2 tools.

- **Research Questions:** What is the status of use of web 2 tools among M.Ed students of teacher education colleges in pune city?

1.8 Assumptions:

- Web 2 tools are beneficial in teaching learning strategies (Rich, 2011)
- Web 2 tools have benefits and limitations in their use (An, Aworuwa,Ballard& Williams)

1.9 Scope of the Study:

- The study focuses on M.Ed students studying in teacher education colleges only
- The study is related to teacher education colleges in Pune city only.

1.10 Delimitations:

- The study is delimited only to teacher education colleges affiliated to Pune University.
- The study is delimited only to Post Graduate students of Teacher education colleges
- For experiment the study is delimited to only one teacher education college of Pune city.
- The tool for the survey and the program is developed by the researcher
- Only you tubes videos, blogs & Adobe Flash CS6 was used as Web 2 tools in teaching learning process.

1.11 Limitations:

- The responses obtained are solely dependent on the participants
- The level of motivation, attention span of student's interest in the subject area etc shall not be under the control of the researcher.

1.12 Research Methodology:

- The current research is Multi method research
- The research is also Mixed Method Research as it includes both Qualitative & Quantitative Methods

Research Design: Convergent Parallel Design

Objective	Method	Informants	Data Collection Tool
1)	Descriptive Research-Survey	67 student teachers from three teacher education colleges affiliated to Pune university selected by purposive sampling	Questionnaire

| 2) | Product development | 30 teachers from 1 teacher education college affiliated to Pune university selected by purposive sampling technique | Use of web 2 tools (You tube videos, blogs, Adobe flash CS6) for teaching learning designed by the researcher. |
| 3) | Single Group Pre test Post Test Design | | Post test prepared by the researcher |

1.13 Experimental Research Design: Single Group Pre-test Post test design.

Variables of the Experimental Study:

Independent Variables: Program based on Web 2 tools

Dependent variables: Performance in the pre test & post test of the teachers.

1.14 Sample of the Study:

Method of sampling: Non Probability sampling technique i.e. Purposive sampling technique

The sample selected for the present study comprises of 67 student teachers from 3 teacher education colleges for survey. Technique used is purposive sampling technique.

- Non-probability Sampling technique i.e. purposive sampling for the experiment
- The sample selected comprises of 30 teachers from 1 teacher education college

1.15 Data Collection Tool:

- The tool for the present study comprises of questionnaire to check the awareness which is made by the researcher
- The program developed by the researcher for Web 2 tools.

1.16 Data Analysis Tool:

Descriptive statistics: Mean

Inferential Statistics: t-test

1.17 Major Findings of the Research:

- **Objective 1:** To assess the awareness of M. Ed students towards the use of Web 2 tools in teaching learning.

Observations of Qualitative & Quantitative data analysis for objective 1 (Survey)

- 85% of the student teachers in Pune are not aware of the concept of Web 2 tools
- 45% of the student teachers say that their teachers use technology in teaching learning process
- Most of the students say that their teachers make use of technology sometimes
- Only Power point presentation are used to deliver their lectures

- 35% student teachers have made use of technology in talking their B.Ed , M.Ed lessons but only in the form of power point presentations
- 90% student teachers are not aware of the different Web 2 tools which can be used
- Most of the student teachers are not aware of web 2 tools but they feel that use of technology in teaching learning process in any form can benefit in the knowledge development of the students

Objective 2 & 3:

- To develop a program based on Web 2 tools for teaching learning among M.Ed students of Pune city.
- To test the effectiveness of the program after the implementation of the program

The scores of the pre test & post test were taken into consideration & Inferential Analysis of the data was done.

T test was calculated for the pre test and post test scores and compared with T table at 0.01 and 0.05 levels of significance. If:

T cal > T tab = null hypothesis is rejected and research hypothesis is accepted

T cal < T tab = Null hypothesis is accepted and research hypothesis is accepted

The following hypothesis was tested using above mentioned criteria

Hypothesis: There is no significant difference between the mean scores of the pre - test and post - test on implementation of the program

The following table 1 shows the descriptive statistics of pre test and post test scores of teachers after implementation of program based on web 2 tools.

Table 1

Scores of pre test and post test

Analysis	Pre test	Post test
N (Total number of score)	55	55
Mean	7.71	16.50
Standard Deviation (SD)	1.16	4.12
Standard error	0.16	0.56
T cal	18.31	

Interpretation: From the above table it is evident that there is difference of 8.79 units in the post test and pre test scores before and after implementation of the program on web 2 tools.

Researcher calculated T test value for the above data that is 18.31 and after comparing with the T table following interpretation was done by the researchers.

No. Of degrees of freedom= N – 1 = 55-1= 54

t table at 0.05 level = 2

t table at 0.01level = 2.66

t $_{Cal}$ = 18.31 is greater than t $_{tab}$= 2 & 2.66 at 5% &1% level of significance respectively. Hence it is to be taken as significant, resulting in the rejection of null hypothesis. It can be said that there exists a significant difference between the pre-test and post-test scores.

Conclusion: It is seen that the difference between mean scores of pre test and post test is not by chance but due to introduction of the program.

Objective 3:

To test the effectiveness of the program after the implementation of the program

Both Quantitative & Qualitative data analysis was done. After the implementation of the program the student teachers were interviewed by the researcher to find out the effectiveness of the program.

(Qualitative Data Analysis)

Responses of student teachers on the effectiveness of the program

- Did you feel that use of wed 2 tools in teaching learning process is beneficial for the development of the students? If yes in what ways?
- What are the limitations of web 2 tools in the teaching learning process?

Discussion:

The respondents have given reasons saying that use of web 2 tools is beneficial in the teaching learning process. It helps in better learning and understanding of the subject. Using Axial Coding the theme that arose from the responses was that '**Use of web 2 tools helps in knowledge creation, better interaction & communication, it provides flexibility in learning for the students they can learn at their own pace and it enriches the teaching learning process. Everyone felt that Adobe Flash CS6 was very beneficial for them as they learnt and got varied experiences and apart from teaching learning it also helped in skill development which is a necessity for the today's teachers'**

'**It is a time consuming process & if technology fails then the lessons can't be effective, from all the student teachers who participated in the program all were not comfortable using technology. Adobe Flash CS6 was useful but few student teachers could not use the software'**

Interpretation:

Web 2 tools are beneficial in teaching learning process and also motivate the students. Adobe Flash CS6 helped in skill development like they learnt to make cards, banners, newsletters which were very helpful for them in their school activities.

Some of them who were not techno savy were not comfortable using Adobe Flash CS6 but they enjoyed the program which included other aspects like you tube videos, blogs etc.

1.18 Suggestions for further research:

- A study can be conducted to assess the awareness of web 2 tools among school teachers and a program should be developed for them as to how web 2 tools can be use din teaching learning process.
- Studies can be conducted at University level and research scholars can be taught to use online tools for data collection
- In Higher Education Web 2 tools can be used for giving projects and assignments where there is credit system to be followed.
- A study can also be conducted to analyze the benefits, problems in use of technology for the teaching learning component

- In curriculum of the school students a part of use of web 2 tools should be there as a part of skill enhancement program.

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