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A STUDY ON TEACHER’S COMPETENCIES AND ACADEMIC ACHIEVEMENT OF SECONDARY TEACHER TRAINEES

*Ms.G.Amutha Ranjini, **Dr. K. Mohanasundaram

ABSTRACT

The present study aims at investigating the teacher competencies and academic achievement of secondary teacher trainees. The sample consists of 189 secondary teacher trainees from Thoothukudi. A teacher competency scale, academic achievement and the personal information from were used for collecting the data. Survey method was adopted for this present study. The data was analysed using percentage analysis and 't' test. The major findings of the level of teacher competency and academic achievement of secondary trainees s average. And there is significant difference in teacher competencies of secondary teacher trainees and academic achievement with reference to gender and religion.

Key words: Competencies, Achievement.

INTRODUCTION

Education is the human process, which involves the teacher and the taught. The teacher is the kingpin of the process. The teaching profession is regard as most important profession as its educational and social values lies in its significant contribution to the development in the quality of life and betterment of the society. Successful professional performance is possible only to a teacher who is committed to his profession. As the educational scenario goes through a vast change in the newly emerging society, the teacher need to be well equipped with knowledge which would create curiosity in the students to learn new things. Therefore, the role of a teacher has taken on new dimension. Since teaching occupies an honourable position in the society, therefore Teacher Education Commission recommended the introduction of a sound programme of professional education of teachers.

NEED AND SIGNIFICANCE OF THE STUDY

The teacher of today must be the teacher of a whole man. The teacher will have to integrate the skills of teaching with his life style and also to help the students to develop not only intellectually but also emotionally. Every teacher should possess competence and

* Ph.D. Scholar, Manonmani Sundaranar University, Tirunelveli.
** Prof. & Head, Dept of Education, Tamil University, Thanjavur.
professional skills, which make his task easy, useful and effective. Teacher education seeks to develop competencies in the prospective teachers, which will make everyone as a successful teacher. In the present situation teacher’s competencies plays an indispensable role in all the development of educational activation.

Competency is meant for the skills knowledge, value, etc. which a teacher process and they are the tools of teaching. Only the teacher who processes all the skills, knowledge and values can function effectively in a academic situation and is said to be competent to teach in any particular situation. The attitude of students are changing rapidly day-by-day, and the method of teaching technologies are also changing continuously. So, in order to meet the present status of students’ attitudes, the teacher should adopt with various competencies. If a teacher is effective in his classroom, the teacher will bring their students up to the expected level in the every educational area.

Proper work habits, desirable attitude, value judgment and adequate personal adjustment of students are the assets of committed teacher and (Ryan 1969). Colleges of education play a vital role in shaping the secondary teacher trainees with all competencies. So in order to meet the present state of student’s expectations, the investigator carried out the topic “Teacher’s competencies and academic achievement of secondary teacher trainees”.

STATEMENT OF THE PROBLEM

The statement of the problem is entitled as “A STUDY ON TEACHERS COMPETENCIES AND ACADEMIC ACHIEVEMENT OF SECONDARY TEACHER TRAINEES”.

OPERATIONAL DEFINITIONS

Teacher Competencies: “Testing designed to measure specific abilities and skills that have been determined to be relevant for educating students”.

“A method of evaluating teacher performance that has been suggested as a means for upgrading the quality of personal in education and increasing teaching accountability”. (Dictionary of Education -2005) Academic achievement : “Accomplishment or proficiency of performance in a given skill or body of knowledge”. (Dictionary of Education -2005) Secondary Teacher Trainees : “They are the student trainees who undergo a pre-service training on learning process that provides experience for development towards good teaching”. (Dictionary of Education -2005)
OBJECTIVES

1. To find out the level of teacher’s competencies of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status.
2. To find out the level of achievement of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status.
3. To find out the significant difference between teacher’s competencies of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status.
4. To find out the significant difference between academic achievement of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status.
5. To find out the relationship between teacher’s competencies and academic achievement of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status.

HYPOTHESES

The following hypotheses were formulated based on the objectives of the present study.

1. The level of teacher’s competencies of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status is average.
2. The level of academic achievement of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status is average.
3. There is no significant difference in the teacher’s competencies of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status.
4. There is no significant difference in the achievement of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status.
5. There is no significant relationship between teacher’s competencies and academic achievement of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status.

METHODOLOGY FOR THE STUDY

The investigator adopted the survey method to find out the teacher’s competencies and academic achievement of secondary teacher trainees.

POPULATION

The population of the study was secondary teacher trainees from B.Ed College of education under the control of Tamil Nadu Teacher Educational University, Chennai.
The investigator has selected five B.Ed. Colleges from Thoothukudi area. A sample of 189 secondary teacher trainees was randomly selected from various Teacher educational institutions for the present study.

**TOOLS**

The investigator has used the following tools

1. **Teacher’s Competencies** - constructed and validated by the investigator and Dr. K. Mohanasundaram.
2. **Academic achievement** - constructed and validated by the investigator and Dr. K. Mohanasundaram.

**STATISTICAL TECHNIQUES**

Data collected and analysed by using SPSS packages. Statistical techniques Mean, Standard deviation, Percentage analysis’s’ test and Correlation used for analysis.

**DATA ANALYSIS**

**HYPOTHESIS: 1**. The level of teacher’s competencies of secondary teacher trainees with reference to gender, age, educational qualification and marital status is average.

**TABLE: 1**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>No</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
</tr>
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<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>46</td>
<td>11</td>
<td>23.91</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>143</td>
<td>18</td>
<td>12.59</td>
<td>105</td>
</tr>
<tr>
<td>Age</td>
<td>Below 25</td>
<td>147</td>
<td>23</td>
<td>15.65</td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>Above 25</td>
<td>42</td>
<td>06</td>
<td>14.29</td>
<td>32</td>
</tr>
<tr>
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<td>UG</td>
<td>99</td>
<td>17</td>
<td>17.17</td>
<td>73</td>
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<tr>
<td></td>
<td>PG</td>
<td>90</td>
<td>12</td>
<td>13.33</td>
<td>62</td>
</tr>
<tr>
<td>Religion</td>
<td>Hindu</td>
<td>138</td>
<td>23</td>
<td>16.67</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Non Hindu</td>
<td>51</td>
<td>06</td>
<td>11.76</td>
<td>34</td>
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<tr>
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<td>18.32</td>
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<tr>
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<td>Married</td>
<td>58</td>
<td>05</td>
<td>08.62</td>
<td>47</td>
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</tbody>
</table>

It is inferred from the above table that the level of teacher's competencies of secondary teacher trainees with reference to background variables is average.

**HYPOTHESIS: 2.** The level of achievement of secondary teacher trainees with reference to gender, age, educational qualification and marital status is average.

**TABLE: 2.**

**THE LEVEL OF ACADEMIC ACHIEVEMENT OF SECONDARY TEACHER TRAINEES WITH REFERENCE TO BACKGROUND VARIABLES**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
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<th>Average</th>
<th>High</th>
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</thead>
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<td></td>
<td></td>
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<td>%</td>
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<td>05</td>
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<td>38</td>
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<td></td>
<td>Female</td>
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<td>14</td>
<td>09.79</td>
<td>110</td>
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<tr>
<td>Age</td>
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<td>147</td>
<td>14</td>
<td>9.52</td>
<td>113</td>
</tr>
<tr>
<td></td>
<td>Above 25</td>
<td>42</td>
<td>05</td>
<td>11.19</td>
<td>35</td>
</tr>
<tr>
<td>Qualification</td>
<td>UG</td>
<td>99</td>
<td>09</td>
<td>09.09</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>PG</td>
<td>90</td>
<td>10</td>
<td>11.11</td>
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<tr>
<td>Religion</td>
<td>Hindu</td>
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<td>16</td>
<td>11.59</td>
<td>109</td>
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<tr>
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<td>Non Hindu</td>
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<td>58</td>
<td>04</td>
<td>6.90</td>
<td>48</td>
</tr>
</tbody>
</table>

It is inferred from the above table that the level of achievement of secondary teacher trainees with reference to background variables is average.

**HYPOTHESIS: 3.** There is no significant difference in the teacher's competencies of secondary teacher trainees with reference to gender, age, educational qualification and marital status.

**TABLE: 3.**

**DIFFERENCE IN THE TEACHER'S COMPETENCIES OF SECONDARY TEACHER TRAINEES WITH REFERENCE TO BACKGROUND VARIABLES**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
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<td>219.133</td>
<td>20.005</td>
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<tr>
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<td>147</td>
<td>217.878</td>
<td>21.681</td>
<td>0.761</td>
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<tr>
<td></td>
<td>Above 25</td>
<td>42</td>
<td>215.071</td>
<td>20.910</td>
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<td></td>
</tr>
</tbody>
</table>

HYPOTHESIS: 4. There is no significant difference in the academic achievement of secondary teacher trainees with reference to gender, age, educational qualification and marital status.

TABLE: 4

Difference in the academic achievement of secondary teacher trainees with reference to background variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>No</th>
<th>Mean</th>
<th>SD</th>
<th>CR value</th>
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<td>35.671</td>
<td>5.266</td>
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<td></td>
</tr>
<tr>
<td>Age</td>
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<td>147</td>
<td>35.143</td>
<td>5.340</td>
<td>0.652</td>
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<td></td>
<td>Above 25</td>
<td>42</td>
<td>35.548</td>
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<td>34.758</td>
<td>4.812</td>
<td>0.682</td>
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<tr>
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<td>PG</td>
<td>90</td>
<td>35.289</td>
<td>5.799</td>
<td></td>
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<td></td>
<td>Non Hindu</td>
<td>51</td>
<td>36.706</td>
<td>4.795</td>
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<td>34.710</td>
<td>5.510</td>
<td>1.241</td>
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<td></td>
<td>Married</td>
<td>58</td>
<td>35.690</td>
<td>4.764</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The null hypothesis accepted in the case of gender and religion, and rejected in the case of age, qualification and marital status.

HYPOTHESIS: 5. There is no significant relationship between teacher competencies and academic achievement of secondary teacher trainees with reference to gender, age, educational qualification and marital status.
**TABLE: 5**

RELATIONSHIP BETWEEN TEACHER’S COMPETENCIES AND ACADEMIC ACHIEVEMENT OF SECONDARY TEACHER TRAINEES WITH REFERENCE TO BACKGROUND VARIABLES

<table>
<thead>
<tr>
<th>Variable</th>
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<th>‘r’ Value calculated</th>
<th>‘r’ Value table</th>
<th>Remarks</th>
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<td>0.664</td>
<td>0.291</td>
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</tr>
<tr>
<td></td>
<td>Female</td>
<td>143</td>
<td>0.741</td>
<td>0.162</td>
<td>S</td>
</tr>
<tr>
<td>Age</td>
<td>Below 25</td>
<td>147</td>
<td>0.754</td>
<td>0.162</td>
<td>S</td>
</tr>
<tr>
<td></td>
<td>Above 25</td>
<td>42</td>
<td>0.635</td>
<td>0.304</td>
<td>S</td>
</tr>
<tr>
<td>Qualification</td>
<td>UG</td>
<td>99</td>
<td>0.661</td>
<td>0.197</td>
<td>S</td>
</tr>
<tr>
<td></td>
<td>PG</td>
<td>90</td>
<td>0.783</td>
<td>0.207</td>
<td>S</td>
</tr>
<tr>
<td>Marital status</td>
<td>Unmarried</td>
<td>131</td>
<td>0.757</td>
<td>0.171</td>
<td>S</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>58</td>
<td>0.631</td>
<td>0.259</td>
<td>S</td>
</tr>
</tbody>
</table>

(At 5% level of significance the table value of ‘t’ is 1.96)

It is inferred from the table that there is significant relationship between the teacher’s competencies and academic achievement of secondary teacher trainees with reference to background variables.

**FINDINGS**

1. The level of teacher’s competencies of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status is average.
2. The level of achievement of secondary teacher trainees with reference to gender, age, educational qualification, religion, and marital status is average.
3. There is no significant difference in the age, educational qualification and marital status in their teacher's competencies. But there is significant difference between the gender and religion in their teacher competencies.
4. There is no significant difference in the age, educational qualification and marital status in their achievement. But there is significant difference between the gender and religion in their achievement.
5. There is significant relationship between teacher’s competencies and academic achievement of secondary teacher trainees with reference to background variables.

**INTERPRETATION**

The percentage analysis reveals that the level of teacher competencies and academic
achievement of secondary teacher trainees is average. This shows that most of the competencies of the teacher trainees developed by the teacher education programme. They gain all the competencies through the teacher education training practices. They have the high teacher competencies and academic achievement due to their well organized curriculum for the development of the inspirational teacher.

The 't' test reveals that there is significant difference between male and female, secondary teacher trainees in their teacher’s competencies. Female secondary teacher trainees are better than the male secondary teacher trainees in their teacher’s competencies. This may be due to that the female trainee teacher’s have more responsibilities, higher level dedication towards their and towards in their duties and professional aspiration than male teacher trainees. Female secondary teacher trainees are better than the male secondary teacher trainees in their academic achievement. This may be due to that the female trainee teacher’s are work hard to achieve than male their counterparts.

The correlation test shows that there is significant relationship between teacher’s competencies and academic achievement of secondary teacher trainees with reference to background variables. This reveals that highly aspirational teachers must have these essential factors as inevitable for a better societal transformation.

RECOMMENDATIONS

1. Trainee teachers should be trained to apply the principles of educational psychology in their classroom situations.
2. The teacher trainees should follow teachers’ policies and strategies whose performance is good in teaching. These practices will provide the opportunity to enhance their competencies.
3. High motivation should be given to the teacher trainees to develop the competencies before commencing the programme.
4. They should have an opportunity to mingle with the students so as to realize the psychology of each and every student and to promote the competencies based on the need of students.
5. Internship programme duration is to be increased to one full semester with a sort of sandwich model that is the alternative between the college of education and practicing schools.

CONCLUSION

In the present study, student-teachers were highly rated in terms of perceived competence Teacher education system which is an important vehicle to improve the quality of school
education. The revitalization and strengthening of the teacher education system is, therefore, a powerful means for the enlistment of education standards in the country. It inculcates the necessary pedagogical skills and competencies among the teachers and makes them professionally competent to meet the demands of the society. It is hoped that the research findings and theories presented in this paper will help to improve teacher characteristics, especially teacher personality, with a view to promoting teaching effectiveness and upgrading the quality of teaching.

REFERENCES

www.edu.com
www.wikipedia.com
EMPOWERING PROSPECTIVE TEACHERS IN CHANNELING CHILDREN'S MEDIA MANIA

Proceeding of the Seminar held on 31st March & 1st April, 2011
(Co-Sponsored by Alumni)

V.O. CHIDAMBARAM COLLEGE OF EDUCATION
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THOOTHIKUDI - 8.
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NATIONAL CONFERENCE

ON

"Empowering Prospective Teachers in Channeling Children’s Media-Mania"

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E-LEARNING: INTEGRATING MEDIA AND INTERACTIVITY

G.Amutha Ranjini

INTRODUCTION

E-learning comprises all forms of electronically supported learning and teaching. The information and communication systems, whether networked or not, serve as specific media to implement the learning process. The term will also be utilized to reference out-of-classroom and in-classroom educational experiences via technology, even as advances continue in regard to devices and curriculum. E-learning is essentially the computer and network-enabled transfer of skills and knowledge. E-learning applications and processes include Web-based learning, computer based learning, virtual classroom opportunities and digital collaboration. Content is delivered via the Internet, audio or video tape, satellite TV, and CD-ROM. It can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio. The E-learning plays more in high education for the reason of fast need of higher education.

DEFINING E-LEARNING

Tom Kelly, Cisco: “E-learning is about information, communication, education and training. Regardless of how trainers categorize training and education, the learner only wants the skills and knowledge to do a better job or to answer the next question from a customer.”

Rosenberg: “E-learning refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance.”

E-LEARNING AN INTEGRATING MEDIA

Media such as audio, video, animation, etc. integrated with E-learning for teaching and learning process.

1. Incorporating audio: The power of audio may often be overlooked but the combination of written and spoken words does have a big impact on recall and retention. The hard part is determining where to use audio, and knowing how much is too much. Audio, just like other media files, requires good bandwidth Web-based program.

2. Incorporating video: Streaming media which allows the student to see the video (or hear the audio) immediately rather than waiting for the complete file to download, the student hears it as it is “streamed” to his or her computer.

- Use video stories to put the subject into its context of use.
- Use video clips followed by questions to encourage active participation from trainees and build on existing knowledge.

*Assistant Prof, in Bio-Science, V.O.C. College of Education, Tuticorin-8, Tamilnadu.

- Ensure that these clips have the information required to answer the questions.
- Limit the length of taking head video clips and use them to elaborate on specific points.

3. Incorporating animation: Animated graphic elements are great to use in training. They're fun to watch, and can get a message across that words or audio. Animation is another element, however, that has to be used appropriately.

4. Incorporating quizzes and tests: Interspersing the course with quizzes that pop up after material has been presented offers good feedback and reinforcement for learning. In most learning situations, the more immediate the feedback, the better it's the building effect of learning. Inserting multiple choices, multiple-multiple choice, true or false, matching or fill in the blank questions is simple, and feedback can be given immediately after the question is answered. The feedback can be in the form of an audio response or text response with the E-source.

REVOLUTIONIZED INTERACTIVE LEARNING

In the 21st century, people have to learn more than ever before. Especially for global organizations, live classroom based training is becoming too costly and cumbersome. Even if employees had the time to attend all the courses and seminars and to read all the books and reports they should remain up-to-date in their area of work, the cost of such learning would be prohibitive. The mission of corporate E-learning is to supply the workforce with an up to date and cost effective program that yields motivated, skilled, and loyal knowledge to all.

1. Anywhere, anytime and anyone: The Internet can offer the logical solution for teaching and learning process. Approximately 80% of the professional workforce already uses computers on the job. Technical obstacles, such as access, standards, infrastructure, and bandwidth, will not be an issue in a few years. The growth of the World Wide Web, high capacity corporate networks, and high speed desktop computers will make learning available to people 24 hours a day, seven days a week around the globe. This will enable to distribute training and critical information to multiple locations easily and conveniently. Online sources can easily be accessed at anywhere, anytime and anyone.

2. Substantial cost savings due to elimination of travel expenses: The biggest benefit of E-Learning, however, is that it eliminates the expense and inconvenience of getting the instructor and students in the same place. Opting for E-Learning also means that courses can be pared into shorter sessions and spread out over several days or weeks.

3. Just in time access to timely information: Web-based products allow instructors to update lessons and materials across the entire network instantly. This keeps content fresh.
and consistent and gives students immediate access to the most current data. Information can be retrieved just before it is required, rather than being learned once in a classroom and subsequently forgotten. Technology based training have a better consistency of learning than traditional classroom learning (e-learning).

4. Higher retention of content through personalised learning: Technology based solutions allow more room for individual differences in learning styles. They also provide a high level of simulation that can be tailored to the learner's level of proficiency. Since they can customize the learning material to their own needs, students have more control over their learning process and can better understand the material, compared to instructor led training. The delivery of content in smaller units, called "chunks," contributes further to a more lasting learning effect.

5. Improved collaboration and interactivity among students: In times when small instructor led classes tend to be the exception, electronic learning solutions can offer more collaboration and interaction with experts and peers as well as a higher success rate than the live alternative. Teaching and communication techniques which create an interactive online environment include case studies, story telling, demonstrations, role-playing, simulations, streamed videos, online references, personalised coaching and mentoring, discussion groups, project teams, chat rooms, e-mail, bulletin boards, tips, tutorials, FAQs, and wizards. Online students had more peer contact with others in the class, enjoyed it more, spent more time on class work, understood the material better and performed, better than students who were taught in the traditional classroom.

CONCLUSION

E-learning or electronic learning in India is gaining prominence slowly, but indeed steadily E-learning in India is especially popular with the young professionals who have joined the work force quite early but still would like to continue their education that may help them move up their career ladder quickly and safely. Thus e-learning in India makes it possible for the learners to pursue their education from reputed institutes without much hassle. Some E-learning portals in India are also providing tutorials for school students. Thus the reach of E-learning in India has expanded from teenagers to teenagers.

REFERENCE

- http://clifmims.com/blog/archives/2605
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STRATEGIES TO ENHANCE INTERACTIVITY IN DISTANCE EDUCATION

Amutha Ranjini, G, Ph.D Scholar, M.S University, Tirunelveli

Introduction
The distance education format challenges teachers to develop a learning environment that places more responsibility on the student to accomplish academic tasks with minimal teacher assistance. This early form of distance education moved the learning frontiers to the learners' home. Successful distance education system involves interactivity between teachers and students, between students and the environment, and among students themselves, as well as active learning in the classroom. Garrison (1990) argued that the quality and integrity of the educational process depends upon sustained, two-way communication. Although such commitments are time consuming in terms of design, preparation, and teaching, they are necessary for student success in distance education.

Distance Education
Distance education represents a unique context for the teaching and learning process. Spitzer (1998) notes that “those involved in distance education grossly underestimate the difficulty involved in changing deeply entrenched teaching and learning habits, and consequently we grossly underestimate the difficulty of changing from a traditional classroom environment to a distance learning context”. It represents the connectivity the students feel with the distance teachers, aides, counselors, facilitators, and their peers. In some forms of distance education, this is practically non-existent, but most cases, it is considered important. Historically, the learning process has taken place with the infrastructure of institutions such as schools, university campuses, technical colleges, etc. The need to be part of such institutions was driven by the notion that to access information and knowledge, a learner had to be present where the teacher was. The first separation between the teacher and the student occurred with correspondence education, which offered information and knowledge mediated by some form of media, usually print.

Distance Educator Competencies
Salmon (2000) offers superb insights into essential teacher competencies from her action research studies on Computer Mediated Conferencing (CMC). Salmon utilizes research studies to develop a comprehensive chart of five e-moderator competencies:

- Understanding of online process: understand how to promote group work, pace online discussions, experiment with new ideas.
- Technical skills: use software to facilitate student interaction by monitoring student messages and create conferencing opportunities.
- Online communication skills: able to effectively interact with students by using concise and clear messages that encourage academic dialog and personalize the online experience.
- Content expertise: credible subject matter knowledge and experience to share comments/questions that stimulate lively debate.
- Personal characteristics: able to adapt to different teaching situations and demonstrates a genuine excitement about online learning.

Importance Of Interaction In Distance Education
As educators refine their philosophy of distance learning, they are concerned about sustaining interactivity in their educational process. Today's distance learning theories are built upon the premise that teachers will assist their students to become self-directed and independent (Moore, 1990). Learners must assume responsibility for their educational experiences, but independent study has natural limitations. If learners do not receive adequate teacher feedback and reinforcement, students will not always know whether they possess an accurate knowledge of their subject matter. A primary goal of distance education is to promote self-directed attitudes while discouraging excessive dependency upon the instructor (Milheim, 1993). Computer-mediated education creates unique risks for both tutors and learners. Tutors can face heavy workloads from large online classes that require large amounts of personal emails, phone calls, and discussion forum comments. Learners devalue their personal knowledge and life experiences, their online contributions can become more driven by an obligation to get through the experience. Collis (1998) shared the following four vital instructional principles for distance education:

1. Both learner and educator play an active and unique role in the educational process.
2. The process of creatively acquiring knowledge involves human interaction and learner competence.

3. Contemporary models of learning support learned centered instruction that encourages self-assessment, personal reflection, and elicit learner articulation of their ideas.

Enhancing Interactivity In Distance Education

1. Promote critical thinking

Students use written comments to share conceptual knowledge with their classmates and teachers. The reading and writing process does promote cognitive and metacognitive skills due to the opportunity to reflect before responding to comments (Hannafin, Hill and Land, 1997). Online dialogue over written messages can offer more in-depth intellectual inquiry than face-to-face conversations which usually encourage immediate responses. Instructors must strive to develop questions that are interesting and reflect a diversity of ideas to stimulate online dialogues. Instructors must use conversational techniques to sharpen dialog focus by providing direction, offering commentary that sorts ideas according to their relevance. The dialogue can be enriched by instructors who offer a diverse range of questions that cause individuals to examine their assumptions, beliefs, ideas and rationale. Instructors should post comments that indicate that they honour a multiple of perspectives.

2. Relevant and engaging lectures

Lectures can be used to personalize the learning environment when instructors develop a conversational style that reflects their personality. Additionally, it is wise to include diverse discussion questions with lectures that explore vital content issues and enable students to refer to their work and life experiences. Shearer, (2003) stresses “without the proper use of, sequence, pace, and feedback, the learner perceives little control over the learning environment, and without other means of timely interaction with the instructor (e.g. by phone or fax) the psychological distance may feel immense”. Instructors learn to translate their knowledge and wisdom into a lecture that effectively communicates. It takes time to create quality lectures which reflect creativity and capture the imagination and attention of students.

3. Positive affirmation of student work

Instructors can promote greater online participation by affirming their students' abilities and knowledge. The teacher can make positive comments about an individuals' expertise in a public forum such as a newsgroup and through private email messages. The key is to be sincere and share positive comments with every student in the class. Distance learners appreciate being recognized for their accomplishments and online classes offer numerous opportunities for instructors to affirm quality work.

4. Integrate stories into the class discussions

Online students want classes that stress the human side of learning. The author has found that students really enjoy stories from the teacher's life because it makes the class more personal and assists them with their academic work. In a doctoral research class, it would be a good opportunity for the instructor to share stories that provides insights on how he or she arrived at their dissertation topic. The wise instructor will use short stories to generate lively discussion within the class on a variety of social issues.

5. Provide student's with flexibility

Instructors must be careful not to provide excessive structure to their classes that eliminates the potential for students making critical decisions about their assignments. The term flexibility refers to making the learning more relevant to the student's needs or circumstances. The instructional emphasis is to make the learning experiences more individualized. Collis (1998) relates, "These relate to time flexibility, content flexibility, entry and completion flexibility, instructional-approach flexibility, learning-resource flexibility, technology-use flexibility, interactivity and communication flexibility, course-logistics flexibility, as well as location flexibility."

Conclusion

Today's professional development programs for online teachers would benefit from interactivity research studies and tailor their curriculum to better prepare their instructors. Teachers need the expertise to develop a class structure that stimulates social interaction and affirms rigorous academic standards while fostering independent learning skills. Successful distance education system involves interactivity between teachers and students, between students and the environment, and among students themselves, as well as active learning in the classroom.

Department of Education, CDE

Bharthidasan University, Tiruchirappalli
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Abstract

The most striking innovation in the field of educational technology is the use of computers. The main objectives of computer assisted instruction is to provide the needed flexibility for individualizing the educational process. CAI (Computer Assisted Instruction) an increasingly popular instructional delivery system provides a learning environment that is self-paced, learner controlled, and individualized. Computer Assisted Instruction is to be used in the curriculum transaction for the teacher trainees and also this should be treated as a practice oriented paper for Teacher Education courses to prepare CAI contents and to plan their lesson plans with the use of CAI. This instructional technology contains different modes as Drill and Practice, Tutorial, Simulation, Instructional Game and Problem-solving. Teacher trainers and Trainees are to be given intense practice in using CAI. This paper discusses about the operation of different modes of CAI, their cognitive functions, values, motivational attributes, advantages of different modes of CAI and the strategies to select the appropriate one for the classroom teaching.

1. Introduction

Due to rapid booming of computer technology, the practices of our classroom teaching and learning have been deeply impacted. Traditional media technology can no longer meet the needs of our classroom teaching practices and learning processes, as the direct result, and they have been rapidly replaced or going to be replaced by computer and its technology. In the past multimedia has been referred to the use of several media (slides, film, audio tape, etc) simultaneously in a coordinated manner. Today Computer integrates these media
and others (video, text, graphics, and sound) to allow interaction and control by the learner. Initially, it is critical for students and faculties, of course including many media professional themselves, who are used to or familiar with the traditional media environment, to understand its applications advantages and implications behind this technique. It is believed that once faculties or students are able to benefit from these multimedia technologies they will use them anxiously.

2. Computer Assisted Instruction

CAI (Computer Assisted Instruction) an increasingly popular instructional delivery system provides a learning environment that is self-paced, learner controlled, and individualized. The existence of computer and use of related technology is going to become a common part of our classroom teaching and learning activities. Few would dispute the importance of making instructor and student aware of the rapidly advancing technology and information handling which is in the process of transforming our classroom practicing. Then what is CAI? What kind of technologies does it imply?

"CAI is the process by which written and visual information is presented in a logical sequence to a student by a computer. The computer serves as an audiovisual device. The students learn by reading the text material presented or by observing the graphic information displayed. The primary advantage of the computer over other audiovisual devices is the automatic interaction and feedback that the computer can provide. Multiple paths through the course material can be taken, depending upon the individual student's progress."

3. CAI and Teacher Education

Computer Assisted Instruction is to be used in the curriculum transaction for the teacher trainees and also CAI should be treated as a practice oriented paper for Teacher Education courses to prepare CAI contents and to plan their lesson plans with the use of CAI. Internet facility is everywhere now, and most of the teachers are accessing the internet. But they are referring the sources and deliver
them to the students with usual lecturer method only. To prepare their own teaching material, the teacher trainer and the trainee should have proper training in CAI content preparation.

4. **Common Categories of CAI**

1. Drill and Practice
2. Tutorial
3. Simulation
4. Instructional Game and
5. Problem-solving

5. **Drill and Practice**

Exercises (physical or mental) designed to increase fluency in a new skill or body of knowledge or to refresh an existing skill or body of knowledge are coming called Drill and Practice. This approach assumes that the learners have previously been introduced to the content, i.e. do not include instruction. For a learner to learn efficiently, performance of lower-level subskills must become automatic.

6. **Operation of Drill & Practice**

![Diagram of Drill & Practice]

7. **Cognitive Functions of Drill & Practice**

- transfers knowledge from STM to LTM
- aids the learner in retrieving knowledge
- helps the learner to learn and to remember by repetition and examples
- follow up for the instructor
- most common format in the market because easiest to write
- traditionally associated with basic mathematics and language skill practice.
- in science education, it can be used to help students with such topics as: scientific notation, terminology, parts of a microscope,
classification, balancing equations, nomenclature, etc.

- good for basic skills/knowledge where rapid student response is desired.
- usually best to use in a series of brief sessions.
- mainly intended for use by individuals.
- should be geared to a level appropriate for the students

8. Tutorial

A form of CAI in which the computer assumes the role of a tutor — introducing content, providing practice, and assessing learning, tutorials are used to introduce new content to learners in much the same manner that a human teacher might.

9. Operation of Tutorials

```
   Present Info ———— Ask Question ———— Judge Response ———— Provide Feedback ———— Next Sequence
              |                            |                            |                        |
                        |                Hints or remediation |
```

10. Cognitive Functions of Tutorials

Since tutorials present content to students, they can be used in any area of the sciences for:

- remediation when learners lack necessary background knowledge.
- enrichment when learners wish to go beyond the basics.
- introduction of content to all learners (freeing the instructor to do other things).
- good for verbal and conceptual learning, may require significant investment of students' time,
- can be effectively used by individuals or groups of 2-3 students.
- should be followed by opportunities for student application of knowledge.

11. Simulation

Simulation is a form of CAI that provides a simplified
representation of a real situation, phenomenon, or process. It provides the opportunity for students to apply knowledge in a realistic format but without the time, expense, or risk associated with the real thing.

12. General Structure of Simulation

13. Value of Simulations

This involves less risk than reality, training costs are reduced, more convenient than real-life situations, minimize the negative effects of time, ability to focus on specific aspects of a phenomenon is frequently increased experiences in a simulation are repeatable, one of the best ways to use CAI in the sciences; simulation makes good use of what the computer does well.

14. Cognitive Functions of Simulation

Best used for application of knowledge, problem solving, and thinking skills. Time involvement may be brief or extended depending on the simulation. Simulations are good for small groups of students, although can be used by individuals, often requires guidance and follow-up for effective use.

15. Instructional Games

Another type of CAI (e.g., drill and practice or simulation) modified to include gaming elements. Generally features, preestablished set of rules of play & an end goal, sensory appeal, force or coercion to play is not required, games are fun and they provide recreation.

16. General Structure of Instructional Games
17. Motivational Attributes of Instructional Games

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18. Cognitive Functions of Instructional Games

Usually, they are aimed at younger learners such as those in the elementary grades. Common characteristics of those applications are:

- edutainment
- problem solving
- critical thinking
- facts and concepts
- strategy development
- nurtures maturity

19. Problem Solving

This is type of CAI program, designed to foster thinking or problem solving skills, but does not fit into one of the other categories. Usually focuses on a specific type of problem solving and provides practice on a number or variety of problems. Problem solving applications have emerged in science education. Examples include topics such as: motion of bodies in physics, chemical reactions, and biological topics such as genetics.

20. For Effective Problem Solving One Should Have;

- a desire to solve the problem
- a base of knowledge & experiences
- a repertoire of possible actions / solutions
- the ability to take action
- the resources to monitor & assess the mental & physical actions / solutions as they unfold
- the controls to effect changes in those actions as the need arises.
21. Functions of Problem-Solving

- increases the user’s self-confidence in understanding that other similar problems can be solved
- create a sense of being self-directed
- increase knowledge and experience base
- adds to repertoire of possible solutions or actions
- enhances analysis and decision-making skills
- increase a person’s ability to deal with change

22. Advantages of CAI Applications

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<td>Effects of chance</td>
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<td>Variable level of difficulty</td>
<td>Record keeping</td>
<td></td>
</tr>
</tbody>
</table>

23. Selecting & Using Applications in the Classroom

While selecting and using the CAI in class rooms, the students' background, real life utility, easiness, documents clarity and accuracy, interest, time expenditure are to be considered. By considering all these, we have to choose best suited applications to help students obtain those specified objectives.

24. Conclusion

Computer assisted instruction provides for individualized instruction, motivates students to go through a unit or course through its varied presentation modes and by instant feedback, encourages
learners to proceed with the lesson. There is a tremendous saving of students and teachers time. Computers are adaptive to students changing performance and relate the learning to suit their cognitive potentials. However, computer can never replace teacher as the human aspect is vital for learning and behaviours of the effective domain can only be developed by a teacher.

References


