ISSN 2322-066X

PEDAGOGY AND PRAXIS

JOURNAL

Volume IX

October 2018

St. Ann's College of Education
(Autonomous)
(Accredited by NAAC with 'A' Grade: 3rd Cycle)
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AND

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ST. ANN'S COLLEGE OF EDUCATION

(AUTONOMOUS)
S. D. ROAD, SECUNDERABAD

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Preface

Keeping in mind the search for quality assurance in Teacher Education and the paradigm shift in teaching learning process it is a great challenge in bringing this volume of the journal 'Pedagogy and Praxis' into the educational scenario especially when this journal aims to publish with the research culture of the College. Innovation, openness to learning and freedom to raise to higher standards helps in professional development. This academic freedom helps the teacher and learner to be creative and the resulting in better research culture that is proactive, reflective, effective as well as productive.

Teaching should be more participative and collaborative in approach, focusing on learning through the pragmatic approach. The M.Ed. dissertation studies have been a major focus in this journal and many scholars understand its value which is the foundation for their further research. This volume focuses its readers to research articles on a wide variety of issues related to education.

Here, at St. Ann's College of Education, the dissertation work of the M.Ed. students is taken care with diligence and quality. The present volume is beneficial to all those, who go through it for enhancing their professional capacities. Being in electronic form, it is to initiate less usage paper.

- **Chief Editor**
Dr. Sr. Marry Kutty P.J.
Principal

Use of Suggestopedia as an Innovative Strategy for Effective Classroom Management an Experimental Study of English Language Teaching (ELT) at Secondary School Level

Dr. Sr. Marry Kutty (Principal)
Ann Glory P.S (M.Ed Student)

Abstract
The objectives of this research entitled "Use of Suggestopedia as an Innovative Strategy for the effective classroom management in English language teaching at secondary school level." The purpose of the study is to assess the impact of using Suggestopedia on the reading comprehension levels of ninth grade students. This research used quantitative and qualitative method of pre-experimental design with one group pretest and posttest design with the sample population of forty (40) students. The results of data analysis showed that the impact of using Suggestopedia Method on the reading comprehension levels in English at secondary school level was effective in improving students' ability in reading comprehension and it also meant that the research hypotheses was accepted because the *t* observed was higher than *t*-table value (13.96>2.02).

Introduction

Meaning of Suggestopedia

Suggestopedia is a teaching method which is based on a modern understanding of how the human brain works and how we learn most effectively. It was developed by the Bulgarian doctor and psychotherapist Georgi Lozanov . The term 'Suggestopedia', derived from suggestion and pedagogy, is often used loosely to refer to similar accelerated learning approaches. However, Lozanov reserves the title strictly for his own method, and he has his own training and certification facilities. Suggestopedia was originally applied mainly in foreign language teaching, and it is often claimed that it can teach languages approximately three times as quickly as conventional methods. It is now applied in several other fields, and its central ideas inspired the development of my own Brain ware workshops. Another revolutionary language teacher who developed his own distinctive methods was the late Michel Thomas, his numerous famous clients including: Woody Allen, Bob Dylan and Eddie Izzard.

Suggestopedia is a language teaching method developed by the Bulgarian psychologist, Georgi Lozanov (see picture on the right.) Like Community Language learning results. Lozanov claimed that by using this method one can teach languages approximately three to five times as quickly as conventional methods. The name of Suggestopedia is from the words "suggestion" and "pedagogy." It is a set of learning recommendations derived from Suggestology, which Lozanov describes as "a science … concerned with systematic study of the non-rational and/or non-conscience influences" that human beings are constantly responding to. The method also draws from insights from yoga and the Soviet psychology. From yoga it draws the importance of relaxation of mind for maximum retention of material. From Soviet psychology Lozanov took the idea that "all sudents can be taught a given subject matter at the same level of skill."

The main features of Suggestopedia are:
• The use of music to relax learners.
• The furniture, decoration and the arrangement of the classroom.
• Teacher's authority. The teacher plays a central role and he/she is the source of all information.

Suggestopedia is a teaching method which is based on a modern understanding of how the human.
brain works and how we learn most effectively. It was developed by the Bulgarian doctor and psychotherapist Georgi Lozanov (1982: 29). The term 'Suggestopedia', derived from suggestion and pedagogy, is often used loosely to refer to similar accelerated learning approaches. However, Lozanov reserves the title strictly for his own method, and he has his own training and certification facilities. Suggestopedia was originally applied mainly in foreign language teaching, and it is often claimed that it can teach languages approximately three times as quickly as conventional methods

Importance of the study

Language is the most significant possession of human being to communicate and to convey and share idea, feeling, emotion, and information to people both in spoken and written forms. Language has an important role in everyday life interactions. Globalization has created a smaller world for people. The spread of internet technology has networked the world and our world is like a global village. When people of different backgrounds meet, they need to communicate using a common language. When we examine this situation English is the only language that appears to be the only alternative which can be used as a common language. English as a global language has been used by people in the world as a first language, a second language and a foreign language. According to academic research, linguists have demonstrated that there is no best method for teaching in all contexts to the other. Also, it is not always possible- or appropriate-to apply the same methodology to all learners, who have different objectives, learning environments and learning needs.

Objectives

- The use of Suggestopedia enhances the Reading comprehension levels of English at secondary school level.
- The use of Suggestopedia enhances the language ability in English at secondary school level.
- The use of Suggestopedia enhances the performance levels in English at the secondary school level.
- The use of Suggestopedia enhances classroom management at the secondary school level.

Research Hypotheses

- There is a significant impact of the use of Suggestopedia on reading comprehension levels in English at secondary school level.
- There is a significant impact of the use of Suggestopedia on the language ability in English at secondary school level.
- There is a significant difference in the performance levels in English at the secondary level by using Suggestopedia.
- There is a significant difference in the classroom management after the post-test at the secondary school level by using Suggestopedia.

Variables of the Study
There are two research variables, independent variable and dependent variable.

Independent variable: Suggestopedia method.

Dependent variable: comprehension levels in reading, language ability, and classroom management.

Research Design
The design of the study used one group pretest and posttest design. (Hatch and Farhadi, 1982:19) stated, the research is pre-experimental design. This study is undertaken "To assess the impact of using Suggestopedia on the reading comprehension levels in English at Secondary school level." The pre-experimental research method is adopted to complete the study. The data was collected from Rockwoods High School Domalguda, Hyderabad. The sample size of the study is forty (40) it is a one group pre-test and post-test for ninth class students. The basis for the research was a couple of sessions conducted wherein two different English prose text lessons were taken for ninth class students. First pre-test task taught with normal class teaching after the class a test was conducted and evaluated. Second for the posttest another prose text lesson was taught using Suggestopedia method with back ground music, exercise and suggestions and a test was conducted to evaluate the understanding of the secondary school level students.

Population and Sample
The populations of this research were students of Rockwoods High School Domalguda Hyderabad. There are 40 students in this research. The sample was equal for both pre-test and post-test.

Sampling Techniques Adopted
The study was divided into two phases i.e. pre-test and post-test. In the first phase, the researcher gave the text from the prose lesson and taught them at the end of the session data was collected in the form of test conducted to check their understanding abilities in language and reading comprehension. In the second phase, Suggestopedia method was applied to conduct the class for secondary level students here the kind of innovative strategy that researcher tried to implement here was Suggestopedia method using background music, relaxation exercises, suggestions and one prose text.

Description of the tool:
For the data collection a questionnaire with four multiple choice questions for the pre-test and post-test, it consists of 30 questions out of which 14 questions were testing the level of understanding the text and testing the language ability and 16 questions were on the reading comprehension.

Statistical Enquiry

The data of this study were analyzed using experimental method. After all of the data were collected, the data were analyzed by following steps: first, the main data obtained from the pre-test and post-test were identified and analyzed. Second the researcher evaluated the results of pre-test and post-test undertaken by the students. Third, the researcher found out the students level of mastery. Fourth, the researcher found out the students performance in the classroom. The last, the researcher found out the students mean scores. The mean scores showed the level of improvement achieved by the students after following teaching and learning process through the implementation of Suggestopedia. At the same time t-score was also calculated to understand the significant difference in learning and understanding the reading comprehension in English of secondary school students by using Suggestopedia method.

Statistical Approach and Analysis

The data collected formed basis for analysis using t-test as it was a paired sample of one group. Mean (*m*) and Standard Deviation (SD) are used to interpret and compare the difference in individual and overall difference in English language after the application of Suggestopedia method. t-test helped in understanding the difference between the pre-test and post-test and difference in various components of English language as it compares the performance of the group with a known scale of evaluation. The interpretation at the end of each table provides inferential analysis of the statistics and provides for accepting or rejecting the said hypothesis.

Research Hypothesis: There is a significant impact of the use of Suggestopedia on reading comprehension levels in English at secondary school level.

Null Hypothesis: There is no significant impact of the use of Suggestopedia on reading comprehension levels in English at secondary school level

Table I: Comparison of reading comprehension levels of Pre-test and Post-test

	N	Mean	Standard Deviation	t- test	Level of significance
Pre-test		10.02	1.40		Significant at 0.05 level
	40			13.82	
Post-test		13.45	.677		

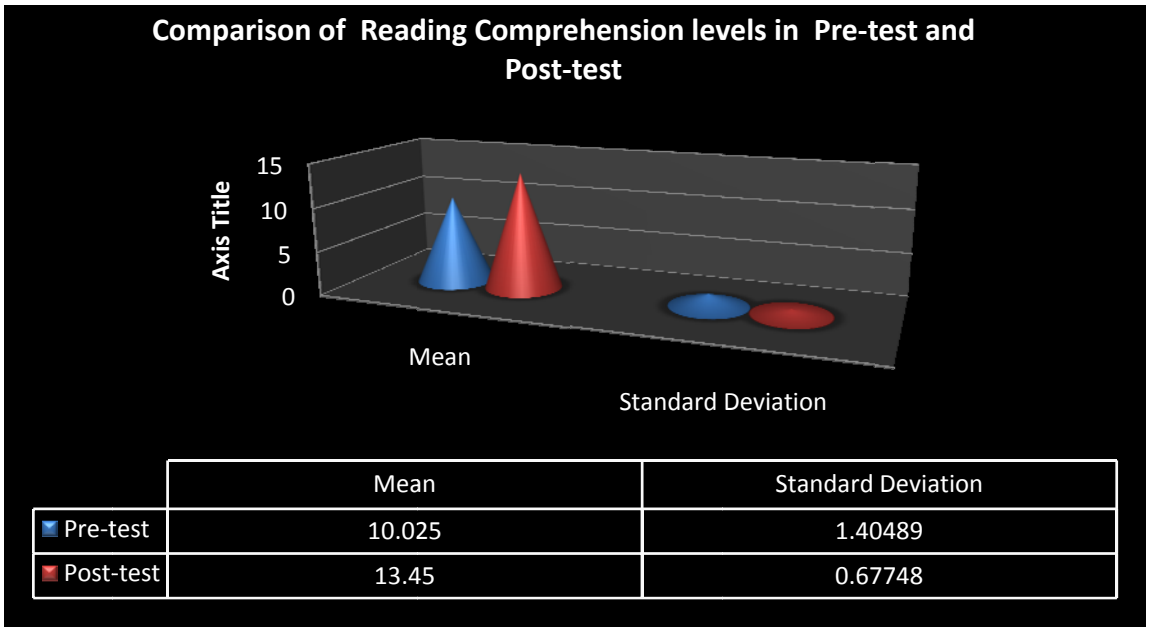
df = 39 , *t* value = 2.02

Interpretation

The results of the data analysis showed that the mean scores of the post-test (13.45) is higher than the mean scores of the pre-test(10.02) so, there is a significant difference in the reading comprehension levels of post-test of Suggestopedia method which is indicated by the Mean (*m*=13.45>*m*=10.02). The Standard Deviation of the pre-test is higher than the Standard Deviation of post-test the variation of the standard deviation showed that there is a variance between the pre-test more than the post-test so, it is deviated as (SD=1.40489>SD=.67748).

The obtained *t*-value is (13.82 at *df* = 39) is greater than the table value (2.02) at 0.05 level of significance therefore the null hypothesis is rejected and research hypothesis "there is a significant impact of Suggestopedia on reading comprehension levels of pre-test and post-test in English at the secondary school level by using Suggestopedia" is accepted.

Graph I: Comparison of reading comprehension levels in Pre-test and Post-test



	Mean	Standard Deviation
Pre-test	10.025	1.40489
Post-test	13.45	0.67748

Hypothesis II

Research Hypothesis: There is a significant impact of the use of Suggestopedia on language ability in English at secondary school level.

Null Hypothesis: There is no significant impact of the use of Suggestopedia on the language ability in English at secondary school level.

Table II: Comparison of language ability of Pre-test and Post-test

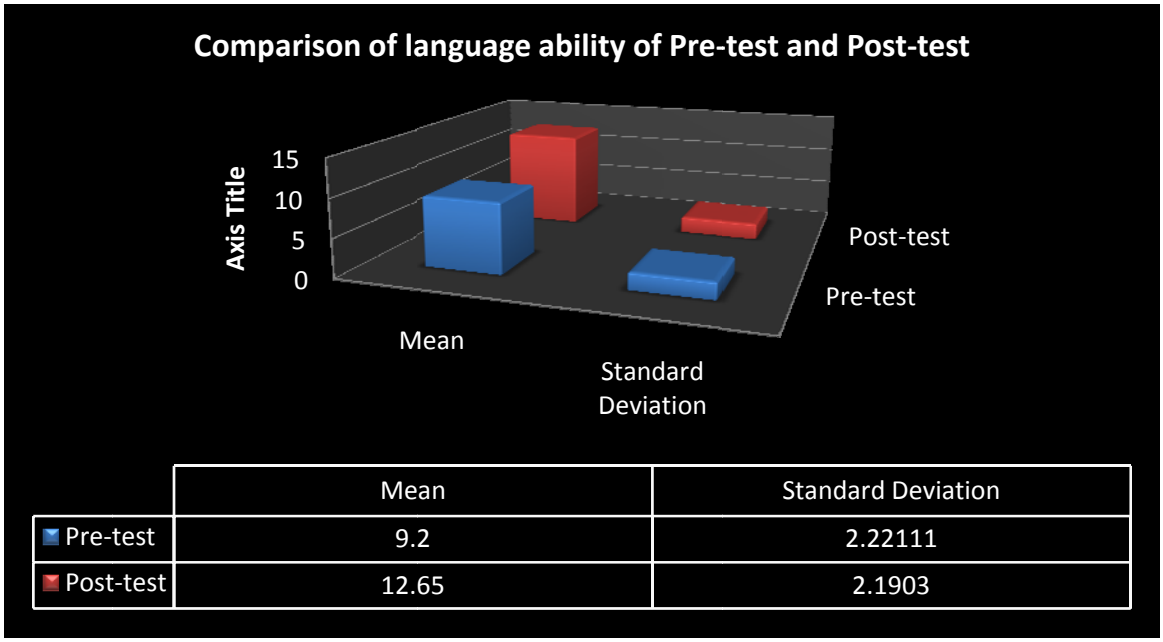
	N	Mean	Standard Deviation	t-test	Level of Significance
Pre-test		9.2	2.22		Significant at 0.05 level
	40			7.716	
Post-test		12.65	2.190		

df = 39 , *t* value = 2.02

Interpretation

The results of the analysis showed that the mean of the post-test(12.65) is higher than the mean of the pre-test(9.20) so, there is a significant difference in the performance levels in language ability of post-test of Suggestopedia method which is indicated by the Mean (m=12.65>m=9.20). The Standard Deviation of the pre-test is higher than the Standard Deviation of post-test the variation of the standard deviation showed that there is a variance between the pre-test is more than the post-test so, it is deviated as (SD=2.22111>SD=2.19030). The obtained t-value is (7.716 at df = 39) is greater than the table value (2.02) at 0.05 level of significance therefore the null hypothesis is rejected and research hypothesis "there is a significant impact of the use of Suggestopedia on the language ability in English at the secondary school level by using Suggestopedia" is accepted

Graph II: Comparison of Language ability of Pre-test and Post-test



	Mean	Standard Deviation
Pre-test	9.2	2.22111
Post-test	12.65	2.1903

Hypothesis III

Research Hypothesis: There is a significant difference in the performance levels of pre-test and post-test in English at the secondary school level by using Suggestopedia.

Null Hypothesis: There is no significant difference in the performance levels of pre-test and post-test in English at the secondary school level by using Suggestopedia.

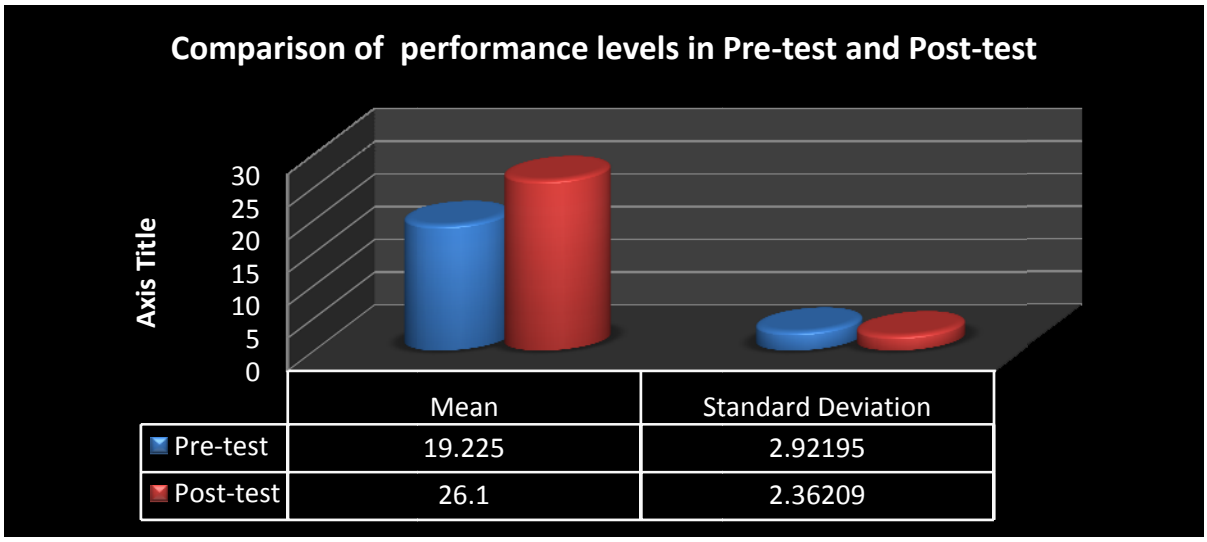
Table III: Comparison of performance levels in Pre-test and Post-test

Pre-test		**19.22**	**2.92**		**Significant at 0.05 level**
	40			13.96	
Post-test		26.10	2.36		

Interpretation

The analysis of the results showed that the mean scores of the post-test(26.10) is higher than the mean scores of the pre-test(19.22) so, it showed that there is a significant difference in the performance levels of post-test of Suggestopedia method which is indicated by the Mean (*m*=26.1>*m*=19.22). The Standard Deviation of the pre-test is higher than the Standard Deviation of post-test the variation of the standard deviation showed that there is a variance between the pre-test is more than the post-test so, it is deviated as (SD=2.92195>SD=2.36209). The obtained *t*-value is (13.96 at *df* = 39) is greater than the table value (2.02) at 0.05 level of significance therefore the null hypothesis is rejected and research hypothesis "there is a significant difference in the performance levels of pre-test and post-test in English at the secondary school level by using Suggestopedia" is accepted

Graph III: Comparison of performance levels in Pre-test and Post-test



Qualitative Analysis

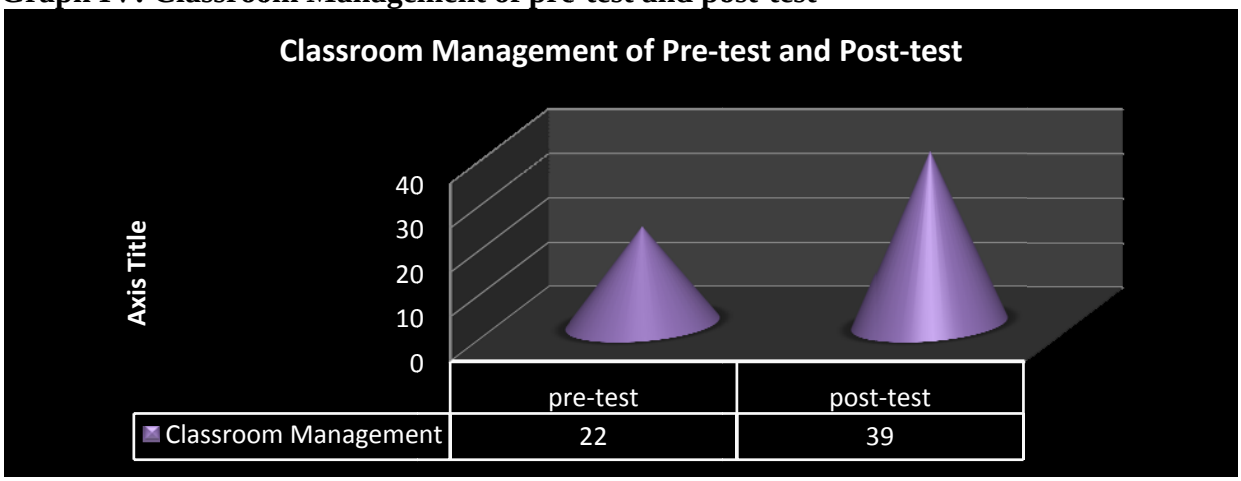
Hypothesis IV

- **Research Hypothesis:** There is a significant difference in the classroom management after the post-test at the secondary school level by using Suggestopedia.
- **Null Hypothesis:** There is no significant difference in the classroom management after the post-test at the secondary school level by using Suggestopedia
- .

Interpretation

There is a significant difference in classroom management after the post-test treatment because the learning environment was effective and interactive with the light music throughout the lesson. When learners are placed in the relaxed atmosphere their concentration levels increases

Graph IV: Classroom Management of pre-test and post-test



Implications of the Study:

The researcher would like to propose some suggestions for the teacher who wants to try using the Suggestopedia method to improve students reading comprehension levels.

The suggestions are:

- The teacher must have a good preparation in selecting the text material for the students
- The background music that used in this method must be in soft instrumental music like Baroque music, Classical music
- Reading comprehension is a process that needs more time in which the students can practice their reading with their partners more.
- The teacher should be creative in creating the classroom atmosphere and using the media to attract student's interest in learning the language.

Conclusion

Researcher believes that there are still other effective techniques waiting out there for us to tap into and discover. Teaching English does not have to be only a challenge, it can actually be one of the most rewarding experiences of our lives. If creativity and resourcefulness are always considered and implemented we may elevate some of the day to day struggles facing this noble profession

Limitation

The results though indicated positive changes are subject to limitations. The research was carried out on ninth grade students. The study in general is an indicative of the learning curve of secondary school students who are taught using English as a medium of instruction. The study was conducted over a limited period where it did not provide ample time to studystudent's performance over a period of time.

Recommondations

- Since the study ends in the conclusion that there was a significant difference on the students' reading comprehension, it is highly suggested to other English teachers to use background music in reading comprehension activity.
- Besides, the researcher expects other researchers who are interested in the same topic to investigate the effect of background music on other skills such as listening, writing or speaking so that the benefits of background music can be fully empowered.
- The results indicate that applying Suggestopedia method to teach reading comprehension in English to secondary school students does bring about a positive change.
- The results are indicative of the fact that rather than sticking to a particular method of teaching which might not yield much results, it is better to switch between different methods as and when required to maximize the learning and produce better results.
- The results are indicative of the fact that rather than sticking to a particular method of teaching which might not yield much results, it is better to switch between different methods as and when required to maximize the learning and produce better results.

Bibliography

Anderson, M and Anderson, K. (2002). *Text Type 3*. South Yara: McMilan Education Australia PTY LTD

Berry, James. (2005). *Levels of Reading Comprehension*. Viewed 27 July, available at :

http;//www.sc4.edu

Bowen, T., What is Suggestopedia?, Macmillan PublishersLtd.,2002

Brown, Gillian, and George Yule. 1983,*Teaching the Spoken Language*, Cambridge University.

Brown, H. Douglas. 1994. *Teaching by Principles*: An Interactive Approach to Language Pedgogy.San Francisco:Prentice-Hall,Inc.

Gaston, E.T.(Ed) 1968 Music in Therapy. New York/; MacMillan

Lozanov, G.1982. *Suggestology and Suggestopaedia*, New York

Prof Mohanraj S. (2014) B.Ed: Methods of Teaching English

Westwood, Peter.(2001). *Reading and Learning Difficulties*. Victoria: Acer Press

Open Book Examination to Enhance Students Conceptual Comprehension

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Abstract

The present experimental study was done on the student teachers of St. Ann's College of Education. A pre test as per open book examination and the post test as per closed book examination had been conducted. The researcher has selected the experimental study and questionnaire method for the present research. The researcher has conducted and used questionnaire tool for research to complete data collection in the present research work. The numerical data has been collected by the researcher and the mean, standard deviation and paired t test is taken out with the help of available numerical data by the researcher. The analysis and interpretations has been made to check out the enhancement of student learning through restricted type in open book examination.

Introduction

Examination is a feedback mechanism for both teachers and students. Closed book examination is an established procedure in traditional assessment. The major purpose of assessment often refers to the rating of students' abilities, but it is also an exercise to obtain students' feedback. Assessment also reflects information on teaching and learning effectiveness. Such information is of particular importance to students and teachers. Open-book examination is believed to be enhance conceptual comprehension. It is also hoped that open-book assessment could have a powerful contribution to teaching and learning at higher levels.

An "open book examination" is one in which examinees are allowed to consult their class notes, textbooks, and other approved material while answering questions. There are two types of Open Book Examination; they are the restricted type and the unrestricted type. In the restricted type of open book examinations, students are permitted to bring into the examination room one or more specific documents approved by the course instructor. In the unrestricted type of open book examinations, students are free to bring whatever they like. There are no restrictions on what the students can bring in an unrestricted open book examination. They may bring books (with or without scribbles on the margin), lecture handouts of the course instructor, or their own handwritten notes. The use of such examinations presupposes certain teaching strategies and types of questions. In particular, it demands that the course focuses on a set of intellectual skills , rather than on the information content , and that no content based questions be asked in the examination. If the course instructor has concentrated on handing down currently available knowledge, and the question paper contains traditional content based questions like "Write an essay on the difference between British and American English", the use of the unrestricted open book examination would be disastrous.

Smith, Feller and Cain all argued in favour of open-book tests because they expected them to encourage higher-order thinking and deeper learning approaches. A deep learning approach seems more likely because students are able to study by reading and thinking rather than reading and memorizing. However, there is scarce empirical data to support these expectations: only one study has closely examined the level of preparation by students for closed and open-book tests. The researchers asked students of a programme in the field of education to score a questionnaire twice, once about open-book tests and once about closed-book tests. According to the results, students who prepared for an open-book test tended to apply higher-order thinking and study the course material in-depth. When they prepared for a closed-book test they applied surface learning and memorized information. However, the participants in this study were undergraduates whose assessment programmes did not regularly use open-book tests. Moreover, the students were to become educationalists and therefore were specifically interested in education and learning. Consequently, these results might be difficult to generalize to a medical setting, especially in conditions where open book tests are a regular part of the assessment programme.

Objectives of the Study

- To understand the difference in student learning through open book and traditional mode of examination
- To study deeper learning in students
- To analyze the anxiety level of students during exams
- To study the improvement in the writing skills of the students

Hypotheses of the Study

- There is significant improvement in student learning through open book examinations
- There is a significant level of difference in the anxiety level of the students in open book examination
- There is a significant level of enhancement in deeper learning strategies through open book examination
- There is significant level of difference in the improvement of writing skills in students through open book examinations
- There is a significant level of difference in the time management of the students through Open book examination

Variables of the Study

Independent Variables: In this research open book examination and Closed book Examination are the independent variables

Dependent Variables: In this research Student learning, Writing skills, Anxiety level, Deeper learning and Time Management and Memorization are the dependent variables

Research Design

The researcher in the present study designed an outline for conducting the research through which the objectives of the study are achieved. The objectives of the study come under the purview of "Experimental study". This is a status study of which is made on the basis of conducting pre-test and post-test. It involves collecting data in order to test the hypotheses or to answer questions concerning the current status of the subject of the study. Quantitative statistical methods are used in describing, analyzing, interpreting the data collected from the sample.

Sample

In the present study the student teachers from St. Ann's College of the education are the target sample. The sample includes 41 student teachers from St. Ann's College of Education.

Tool

A self developed tool consisting of 31 questions with five point scale rating(Never, Rarely, Sometimes, Often, Always) with 25 positive questions and 6 negative questions are used for the study. The questionnaire consists of 6 components which reflects the dependent variables.

Scale

5 Point Likert scale has been taken. The scale has five points such as Never, Rarely, Sometimes, Often and Always. The students were expected to put a tick against each question. A quick and accurate response was expected. The researcher was present all throughout in case of any difficulty arise in understanding of the questionnaire. The positive statements of the scale are given the scoring order as 1,2,3,4,5 and scoring order 5,4,3,2,1 is followed for negative statements.

Validity and Reliability

The reliability of each item was established by using coefficient of correlation as a statistic measure .The coefficient of correlation was found for the given responses in the pilot study. The range 0.4 to 0.8 was considered for coefficient of correlation to establish the reliability of each item in the questionnaire.

Analysis and Interpretation

HYPOTHESIS 1:

H_1 : There is significant improvement in student learning through open book examinations

H_0 : There is no significant improvement in student learning through open book examinations

Table 4.1 Differences in Mean, Standard Deviation and t-Value between Pre-test and Post-test Scores on Student teachers.

Sample Size= 41

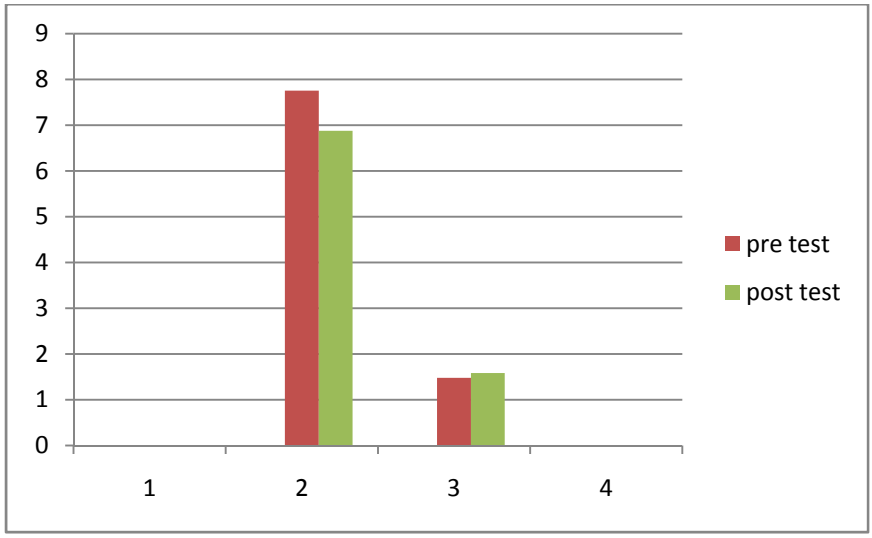
Assessment	Mean	Standard deviation	t-test
Pre test	7.7561	1.4795	3.023
Post test	6.8780	1.5842	

Df= 40 **table value= 2.021**

Interpretation:

From Table 4.1 The obtained t-value *(df=40) is 3.023* is greater than the table value *t (40) =2.021; p < 0.05.* Therefore the research hypothesis is accepted and null hypothesis is rejected. It clearly indicates that there is significant improvement in student learning through open book examinations.

Figure 4.1 Represents the graphical representation of the improvement in student learning through open book examinations.



Hypothesis 2

$H_{1:}$ There is a significant level of difference in the anxiety level of the students in open book examination

$H_{0:}$ There is no significant level of difference in the anxiety level of the students in open book examination

Table 4.2 Differences in Mean, Standard Deviation and t-Value between Pre-test and Post-test Scores on the anxiety level of the Student teachers.

Sample Size= 41

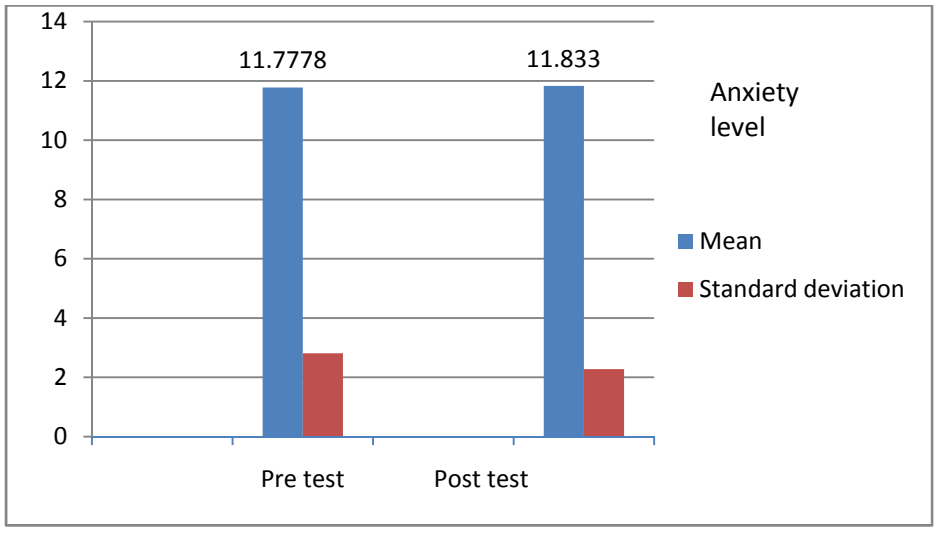
Assessment	Mean	Standard deviation	t-test
Pre test	11.7778	2.81	0.54
Post test	11.833	2.28	

Df= 40 **table value= 2.021**

Interpretation:

From Table 4.2 The obtained t-value *(df=40)* is *0.54* is less than the table value *t (40) =2.021; p < 0.05*. Therefore the null hypothesis is accepted and research hypothesis is rejected. It clearly indicates that there is no significant difference in the anxiety level of the students in open book examination

Figure 4.2 presents the graphical representation of the difference in anxiety level of the student through open book examinations



Hypothesis 3

H_1 : There is a significant level of enhancement in deeper learning strategies through open book examination

H_0 :There is no significant level of enhancement in deeper learning strategies through open book examination

Table 4.3 Differences in Mean, Standard Deviation and t-Value between Pre-test and Post-test Scores on deeper learning of the Student teachers.

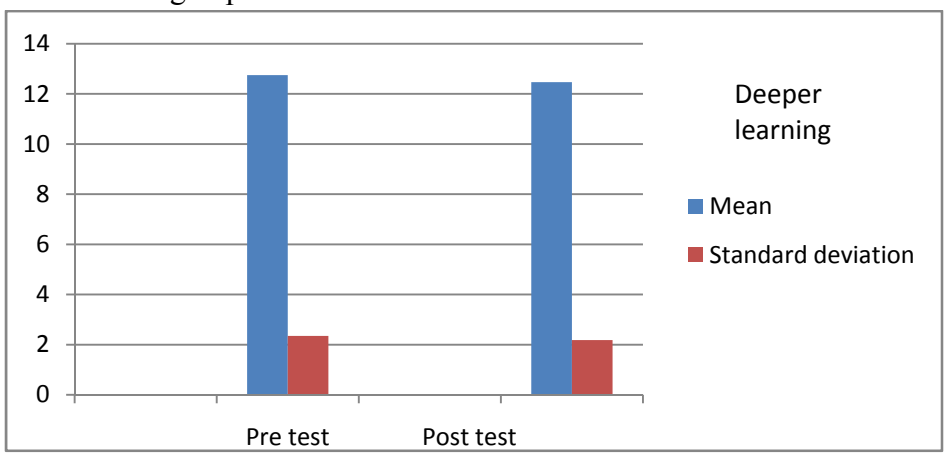
Sample Size= 41

Assessment	Mean	Standard deviation	t-test
Pre test	12.75	2.35	0.51
Post test	12.47	2.18	
Df= 40	**table value= 2.021**		

Interpretation

The obtained t-value *(df=40) is 0.51* is less than the table value *t (40) =2.021; p < 0.05.* Therefore the null hypothesis is accepted and research hypothesis is rejected. It clearly indicates that there is no significant difference in the deeper learning of the students in open book examination

Figure 4.3 presents the graphical representation of the difference in deeper learning of the student through open book examinations



Hypothesis 4

H_1 : There is a significant level of difference in the time management of the students through open book examinations

H_0 : There is no significant level of difference in the time management of the students through open book examinations

Table 4.4 Differences in Mean, Standard Deviation and t-Value between Pre-test and Post-test Scores on the time management of the Student teachers.

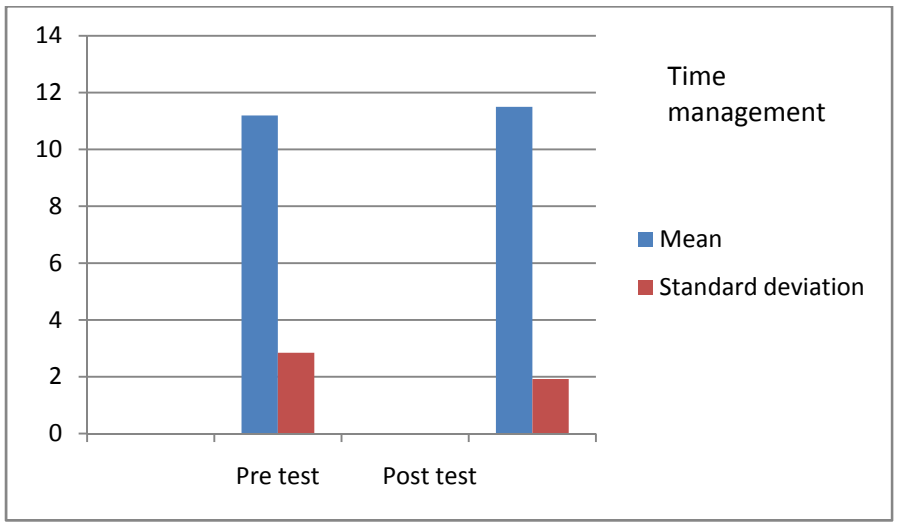
Sample Size= 41

Assessment	Mean	Standard deviation	t-test
Pre test	11.1944	2.8467	0.544
Post test	11.5000	1.9182	
Df=40	**Table value=2.021**		

Interpretation

The obtained t-value *(df=40) is 0.54* is less than the table value *t (40) =2.021; p < 0.05.* Therefore the null hypothesis is accepted and research hypothesis is rejected. It clearly indicates that there is no significant difference in the time management of the students in open book examination

Figure 4.4 presents the graphical representation of the difference in time management of the students through open book examinations



Hypothesis 5

H_1 : There is a significant level of difference in the writing skills of the students through open book exams.

H_0 :There is no significant level of difference in the writing skills of the students through open book exams

Table 4.5 Differences in Mean, Standard Deviation and t-Value between Pre-test and Post-test Scores on the writing skills of the Student teachers.

Sample Size= 41

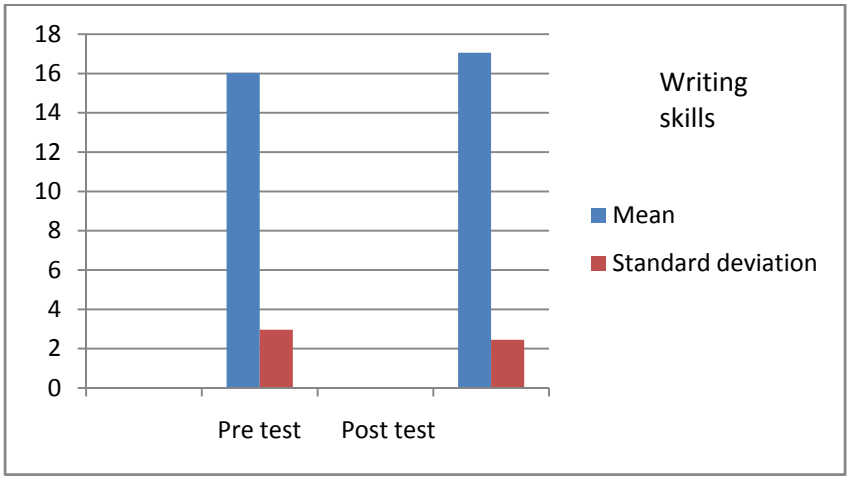
Assessment	Mean	Standard deviation	t-test
Pre test	16.0278	2.9615	1.551
Post test	17.0556	2.4488	

Df= 40 **table value= 2.021**

Interpretation

The obtained t-value (df=40) is 1.55 is less than the table value *t (40) =2.021; p < 0.05*. Therefore , the null hypothesis is accepted and research hypothesis is rejected. It clearly indicates that there is no significant difference in the writing skills of the students in open book examination

Figure 4.5 presents the graphical representation of the difference in the writing skills of the students through open book examinations



Results and Discussions

1. The scores obtained by the student teachers in open book examination were more when compared to closed book examination. This may be due to the students being well prepared for the open book examination by referring more number of books.
2. There was no significant level of difference in the anxiety level of the students in open book examination when compared to the closed book examination . This may be due to gaining the confidence level of the students after writing the open book examination and the preparation for the closed book examination might have become much easier in attempting questions.
3. There was no significant level of enhancement in deeper learning strategies through open book examination since the students already referred the books and collected a lot of information attempted the questions in more detailed manner in closed book examination
4. There was no significant level of difference in the improvement of writing skills in students through open book examination. This may be due to less time duration given to the open book examination as the students spent more time in gathering the information rather the putting some own thoughts in the writing process.
5. There was no significant level of difference in the time management of the students through open book examination. This may be due to unaware of open book examination

Conclusion

Open book examination questions are asked from higher order thinking skill. Students have to think to their own for writing these types of question because no direct answers of such questions would be found from books. In our traditional system of examination most of the questions are asked directly from the books and those questions are mostly of knowledge level. These types of questions only compel the children to memorize the answer of the questions without adding any thinking to it. Even in the traditional examination, questions of higher order thinking could be asked. But students should be prepared well to answer the questions of higher order thinking. The examination bodies including State Boards and Central Board could start preparing the question papers including more ‘higher order thinking questions’.

Curriculum need to be prepared in the similar line. As the examination pattern decides the teaching learning pattern, bringing changes in the examination system may help to bring changes in teaching learning system. Above all, teacher plays a vital role to bring the change in their classroom transactions. There is a need to train teachers to develop students’ higher order thinking. It is high time to reshuffle our educational policies that would help our children to develop their personalities to their fullest.

Recommendations

It would also be very interesting to conduct longitudinal studies of students at various levels of academic experience and development. These longitudinal studies offer the promise of understanding open-book preparation and performance differences for students with different levels of experience and academic maturity. Well-constructed longitudinal studies could also follow specific students throughout their academic careers to evaluate possible effects the open-book methodology has on student development and performance. These longitudinal studies can also give greater insight into possible negative impacts of open-book exams on student learning and performance. For example, mixed findings have been reported regarding long-term or delayed retention of material covered in open-book exam approaches (Agarwal, Karpicke, Kang, Roediger, & McDermott, 2008). Longitudinal studies are important as these long-term effects of the methodology are more carefully studied and reported.

Future research oriented toward addressing these potential research topics will contribute to the ongoing open-book versus closed-book exam debate. These educational process improvement efforts will help address demands that the educational community enhance student learning and success, as well as future professional performance.

We are hopeful that educators in other disciplines find our study useful for their course development. At a minimum, we hope the readers of this study gained insight into a testing protocol they may have dismissed in the past, but now may consider adding to their assurance of learning repertoire in their quest to enhance their students' learning and future professional success.

Bibliography

- Agarwal, P. K., Karpicke, J. D., Kang, S. H. K., Roediger, H. L., & McDermott, K. B. (2008). *Examining the testing effect with open- and closed-book tests*. Applied Cognitive Psychology, 22, 861-876.
- Barnett, S. M., & Ceci, S. J. (2002). *When and where do we apply what we learn? A taxonomy for far transfer*. Psychological Bulletin, 128, 612-637.
- Cambridge, MA: MIT Press. Bransford, J. D., Franks, J. J., Morris, C. D. & Stein, B. S. (1979). *Some general constraints on learning and memory research*. In L. S. Cermak & F. I. M. Craik (Eds.), Levels of processing in human memory (pp. 331-354).
- Eilertsen, T. V., & *Valdermo, O. (2000). Open-book assessment: A contribution to improved learning?* Studies in Educational Evaluation, 26, 91-103.
- Feldhusen, J. (1961). *An evaluation of college students' reactions to open book examinations.* Educational and Psychological Measurement, 21, 637-646.

A Study on the Attitudes of School Teachers towards Solid Waste Management

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Abstract

Solid waste management is handling of discarded materials. Recycling and compositing, which transform waste into useful products, are forms of waste management. The study was based on the study of attitudes of school teachers towards concerns and willingness to participate in solid waste management activities. A survey method was adopted and the tool used was a questionnaire. The questionnaire was administered to a sample of 40 teachers i.e., 20 government school teachers and 20 private school teachers. Further, the questionnaire was analyzed, interpreted and subjected to the statistical techniques by using Mean, Standard Deviation and t-test. The analysis of the data interpreted and findings of the study revealed that there is no significant difference between the attitudes of government school teachers and private school teachers towards willingness to participate in solid waste management activities. And also found that there is no significance difference between the attitude of female teachers and male teachers towards willingness to participate in solid waste management activities. Hence, the study concludes that the solid waste management strategies can be improved by providing environmental awareness programmes.

Introduction:

Solid waste management is handling of discarded materials. Recycling and compositing, which transform waste into useful products, are forms of waste management activities. The management of waste also includes disposal, such as land filling, incineration. As per the Solid Waste Management Rules, 2016, the Central government has put the onus of segregating waste on residents and that they should handover only segregated waste. As per the rules, penalty can be imposed if un-segregated waste is handed over. The primary objective of waste management today is to protect the public and the environment from potentially harmful effects of waste. Some waste materials are normally safe, but can become hazardous, if not managed properly. Every individual, business or organization must make decisions and take some responsibility regarding the management of his or her waste. Solid waste management is a serious problem though it is an important service; it is not given priority. Solid waste is a vital, ongoing and large public service system, which needs to be efficiently provided to the community to maintain public health standards.

Day-by-day the amount of the waste generated is increasing and that producing enormous challenges to the environmental protection. The problem of solid waste needs extensive research to provide awareness for effective management of the wastes.

Importance of the study

Every man with his operation of daily domestic work creates solid waste for disposal. Solid waste disposal creates a problem primarily in highly populated areas. As the cities are growing in size and problems seen as the generation of plastic waste, various municipal waste treatment and disposal methods are now being used to try resolving these problems. Garbage generation in households and in Institutions can be recycled and reused to prevent creation of waste at sources and reducing amount of waste thrown into the community dustbins. Because of this the solid waste management is important and essential. The study was set up to find out the strategies adopted by the schools towards environmental regeneration.

1.1 Objectives of the study

1. To study the attitudes of government school teachers and private school teachers with respect to solid waste management.

2. To study the attitudes of male teachers and female teachers with respect to solid waste management.

3. To study the attitudes of government school teachers and private school teachers with respect to willingness to participate in solid waste management activities.

4. To study attitudes of male teachers and female teachers with respect to willingness to participate in solid waste management activities.

1.2 Hypothesis of the study

1. There is a significant difference among the attitudes of government school teachers and private school teachers with respect to solid waste management.

2. There is a significant difference among attitudes of male teachers and female teachers with respect to solid waste management.

3. There is a significant difference among attitudes of government schools teachers and private schools teachers with respect to willingness to participate in solid waste management activities.

4. There is a significant difference among attitudes of male teachers and female teachers with respect to willingness to participate in solid waste management activities.

1.3 Variables of the study

The independent variables of the present study are

- Gender – Male teachers and Female teachers
- Type of management of teachers -Government school teachers and Private school teachers.

The dependent variable is:

- Attitudes of school teachers towards solid waste management
- Willingness to participate in solid waste management activities.

1.4 Research design

Keeping in mind the nature of the present research problem, a survey method was found to be most suitable for the study. The descriptive survey method gathers data from a relatively large number of cases at a particular time. The purpose of this study is to initiate the descriptive study to study solid waste management strategies among government and private school teachers. The research design employed here is random selection technique.

1.5 Population and Sample

Sample – 40 teachers.

20 – Government school teachers – 10 female teachers and 10 male teachers.

20 – Private school teachers - 10 female teachers and 10 male teachers.

1.6 Research tool used

It is a self-administered scale. The tool employed in the present study includes a questionnaire which was developed and standardized by Dr. J. C. Goyal (New Delhi). The questionnaire contains 30 items which were divided again component wise to serve about the stated purposes. Component – I concern towards solid waste management and Component – II willingness to participate. Hypotheses are verified by independent sample t-test statistically analyzing the data and interpreting the results by comparing the values obtained with the table values at a particular degree of freedom (df) and level of significance based on which the research hypothesis is rejected or accepted.

Research hypothesis formulated in the present investigation are as follows:

Hypothesis I:

There is a significant difference among the attitudes of government school teachers and private school teachers with respect to solid waste management.

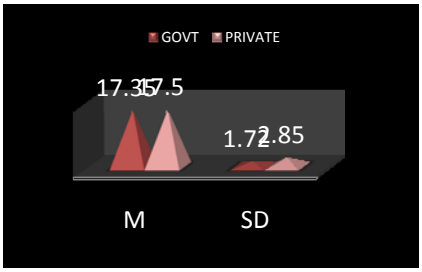
Table-1: Showing the mean value, standard deviation and t-value of attitudes of government schools teachers and private schools teachers with respect to solid waste management.

S. No	Sample	N	Mean	S.D	t-value	Level of significance
1.	Government school teachers	20	17.35	1.72	0.201	0.05
2.	Private school teachers	20	17.50	2.85		

The calculated mean value of private school teachers is (M = 17.50) and standard deviation (S.D = 2.85) which is more than the calculated mean value of the government school teachers with respect to solid waste management (M = 17.35)and(S.D = 1.72) respectively, indicating that the private school teachers are better than the government school teachers and shows a great variance in the attitudes among private school teachers and the government school teachers with respect to solid waste management.

The obtained t-value is (t = 0.201) which is less than the table t-value is (t = 2.021) with a degree of freedom (df = 38) is not significant at 0.05 level of significance. Therefore, the null hypothesis "There is no significant difference among the attitudes of government school teachers and private school teachers with respect to solid waste management" is accepted and research hypothesis is rejected.

Graph 1 – Graph depicting the mean value and standard deviation of attitudes of government schools teachers and private schools teachers with respect to solid waste management.



Findings of the study: There is no significant difference among the attitudes of government school teachers and private school teachers with respect to solid waste management.

Conclusion: - The study shows that the attitudes of government school teachers and private school teachers with respect to solid waste management are more or less same and the type of management does not have influence with respect to solid waste management.

Hypothesis II

There is a significant difference among attitudes of male teachers and female teachers with respect to solid waste management.

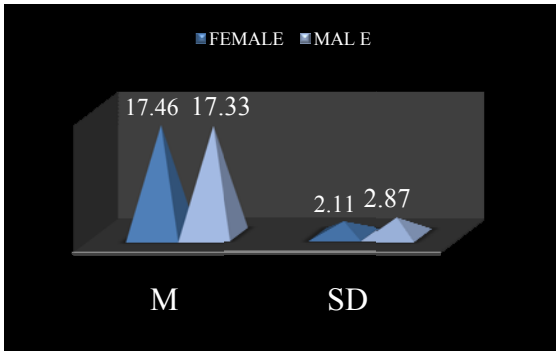
Table-2: Showing the mean value, standard deviation and t-value of attitudes of male teachers and female teachers with respect to solid waste management

Sl. No	Sample	N	Mean	S.D	t-value	Level of significance
1.	Female teachers	20	17.46	2.11	0.201	0.05
2.	Male teachers	20	17.33	2.87		

The calculated mean value of the female teachers is (M = 17.46), which is more than the calculated mean value of the male teachers (M = 17.33) with respect to solid waste management, indicating that the female teachers are better than the male teachers with respect to solid waste management.

The calculated standard deviation of female teachers is (S.D = 2.11) which is less than the calculated standard deviation of the male teachers (S.D = 2.87) with respect to solid waste management, indicating a less variance in the female teachers and the male teachers with respect to solid waste management. The obtained t-value is (t = 0.161) which is less than the table t-value is (t = 2.021) with a degree of freedom (df = 38) is not significant at 0.05 level of significance. Therefore, the null hypothesis “There is no significant difference among attitudes of male teachers and female teachers with respect to solid waste management” is accepted.

Graph 2 - Graph depicting the mean value and standard deviation of the male teachers and female teachers



Findings of the study

There is no significant difference among attitudes of male teachers and female teachers with respect to solid waste management.

Conclusion :- The calculated mean value of the female teachers is (M = 17.85) which is less than the male teachers (M = 18.83)with respect to willingness to participate in solid waste management activities , indicating that the male teachers are better than the female teachers with respect to willingness to participate in solid waste management activities.

Hypothesis III

Research hypothesis

There is a significant difference among attitudes of government schools teachers and private schools teachers with respect to willingness to participate in solid waste management activities.

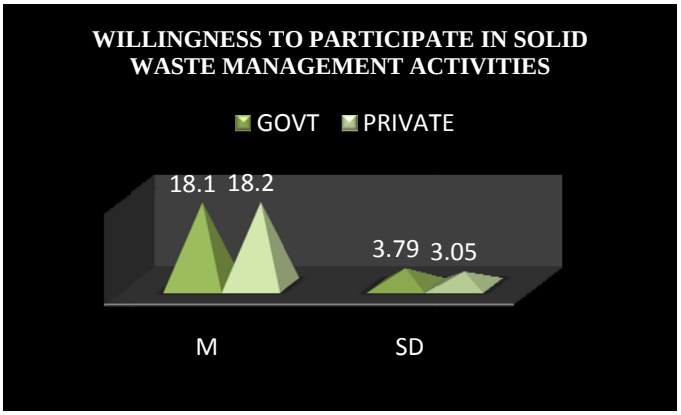
Table - 3: Showing the mean value, standard deviation and t-value of attitudes of government schools teachers and private schools teachers with respect to willingness to participate in solid waste management activities.

Sl. No	Sample	N	Mean	S.D	t-value	Level of significance
1.	Government school teachers	20	18.10	3.79	0.93	0.05
2.	Private school teachers	20	18.20	3.05		

The calculated mean value of the private school teachers is (M = 18.20) which is more than the mean value of the government school teachers (M = 18.10) with respect to willingness to participate in solid waste management activities, indicating that the private school teachers are better than the government school teachers with respect to willingness to participate in solid waste management activities.

The calculated standard deviation of the private school teachers (S.D = 3.05) which is less than the government school teachers (S.D = 3.79),indicating a less variance in the private school teachers and the government school teachers with respect to willingness to participate in solid waste management activities. The obtained t-value is (t = 0.93) which is less than the table t-value is (t = 2.021) with a degree of freedom (df = 38) is not significant at 0.05 level of significance. Therefore, the null hypothesis "There is no significant difference among attitudes of government schools teachers and private schools teachers with respect to willingness to participate in solid waste management activities" is accepted

Graph 3 – Graph depicting the mean value and standard deviation of government schools teachers and private schools teachers with respect to willingness to participate in solid waste management activities



Findings of the study

There is no significant difference among attitudes of government schools teachers and private schools teachers with respect to willingness to participate in solid waste management activities.

Conclusion :- The study shows that the attitudes of Government schools teachers and private schools teachers does not have influence with respect to willingness to participate in solid waste management activities.

Hypothesis IV

There is a significant difference among attitudes of male teachers and female teachers with respect to willingness to participate in solid waste management activities.

Table – 4: showing the mean value, standard deviation and t-value of the waste management strategies adopted by the female teachers and male teachers with respect to willingness to participate in solid waste management activities.

Sl. No	Sample	N	Mean	S.D	t-value	Level of significance
1.	Female teachers	20	17.85	3.38	0.83	0.05
2.	Male teachers	20	18.83	3		

The calculated mean value of the female teachers is (M = 17.85) which is less than the male teachers (M = 18.83), with respect to willingness to participate in solid waste management activities, indicating that the male teachers are better than the female teachers with respect to willingness to participate in solid waste management activities.

The calculated standard deviation of the female teachers is (S.D = 3.38) which is more than the male teachers (S.D = 3.37), with respect to willingness to participate in solid waste management activities indicating a great variance in the female teachers and the male teachers with respect to willingness to participate in waste management activities.

The obtained t-value is (t = 0.83) which is less than the table t-value is (t = 2.021) with a degree of freedom (df = 38) is not significant at 0.05 level of significance. Therefore, the null hypothesis "There is no significant difference among the waste management strategies adopted by the female teachers and male teachers with respect to willingness to participate in solid waste management activities" is accepted is rejected.

Graph 4 – Graph depicting the mean value and standard deviation of the waste management strategies adopted by the female teachers and male teachers

Findings of the study

There is no significant difference among the waste management strategies adopted by the male teachers and female teachers with respect to willingness to participate in solid waste management activities.

Conclusion: - The study shows that the waste management strategies adopted by the male teachers and female teachers does not have influence with respect to willingness to participate in solid waste management activities.

Discussion and Findings of the study

Willingness to participate in the school community as a whole in reducing waste is essential. Thus, apart from management practices, due consideration should be given to educating the source reduction concept coupled with proper storage, effective collection, transfer, treatment and disposal of waste.

Educational implication of the study

To ensure better human health and safety there will be a need for effective solid waste management system. The planning of integrated solid waste management can be done by

1. Reduction of waste at source with active participation of the school community. Wastes can be reduced by changing the consumption pattern, use of recyclable materials, practices of waste segregation and refusing the use of polythene bags.
2. Increasing solid waste recycling and reuse. Source separation and recycling of waste reduces the volume of the waste considerably.
3. Compositing is very effective measure of waste disposal. It can be done by practice of dumping of dry and wet waste.
4. Segregation of waste at source through active participation of school community and in separate containers and regular collection of wastes by using separate fuel efficient vehicles according to nature of the wastes. Bins, storage containers for the storage of bio-degradable and wet wastes should be placed properly.
5. Adequate training to all the levels of staff engaged in solid waste management to handle respective functional aspects like collection, generation, storage, segregation of waste etc., should be mandatory at regular interval.
6. Encouraging environmental awareness programmes areas related to solid waste management including the public about the importance and necessity of better waste management.

Limitations of the study

The study was limited to a sample of 40 teachers and therefore cannot be generalized to all. The study was limited to two schools only and therefore cannot be generalized to other Institutions. The study was limited to only Secunderabad area and therefore cannot be generalized to other districts, states.

Suggestions for the further study

1. There is need to enhance environmental education programmes and public participation as it affects solid waste management not only through the media but also through grassroots enlightenment campaigns by involving community leaders.

2. Primary, secondary and tertiary schools curricula should include detailed topics on solid waste management.

3. Effective solid waste management requires involvement, participation and cooperation of local communities and the government

4. Public private partnership is highly encouraged in solid waste and environmental management.

5. Government should commit itself to sponsoring more research projects for the reduction of solid waste at source, its collection and efficient disposal.

Conclusion

To achieve a sustainable development it requires efficient management of solid waste. A degraded environment cannot sustain a continued growth and it impacts negatively on the entire development. People need to be educated by health motivators about the effects of dumpsites on their health. Therefore, the study concludes that the dumpsite should be properly located and managed to minimize its effects on the environment with concern and active participation in solid waste management activities.These changes might be gradual and even less appealing against the problem; but taking small steps can greatly contribute to the reduction of pollution. It is time for us to take some preventive steps, and ensure a better life for the future generations.

Bibliography

Ahuja, R. (2001). Research methods. Jaipur, India: Rawat Publications.

Bartone, C.R. 1995. The role of the private sector in developing countries: Keys to success.

Belcher, W. (2009).Writing your journal article in 12 weeks: A guide to academic publishing success. Thousand Oaks, Calif.: SAGE Publications.

Best, J. (1970).Research in education (2d ed.). Englewood Cliffs, N.J.: Prentice-Hall.

Brubacher, J., & Case, C. (1994).Becoming a reflective educator: How to build a culture of inquiry in the schools. Thousand Oaks, Calif.: Corwin Press.

Cohen,L., &Manion, L. (2003). Research methods in education (5th ed.). London: RoutledgeFalmer.

Doyle, T. (2008).Helping students learn in a learner-centered environment a guide to facilitating learning in higher education. Sterling, Va.: Stylus Pub.

Gupta,sanjay k april.2004 waste management in indiatogether,

Paper presented at ISWA Conference Waste Management.September 1995Role of the Private Sector, Singapore, 24-25.

Solid waste management manual (2000),Central public, health and environmental engineering ororganization (CPHEEO)government of india.

Solidwastemanagementingreaterbombay.(September 2004)WWW.atsdr,cdc.gov.
Anon,2001.state of environment.india,environmental.protection agency

http//WWW.epa.gov/epawaste/nonhaz/indexhtm.

http//WWW.epa.gov/epawaste/conserve/index.htm.

Anxiety among Psoriatic Patients in Hyderabad City.

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Abstract:

Psoriasis is a chronic skin disease presenting with scaling and inflammation. Anxiety disorders are amongst the most common psychiatric disorders in all over the world. Present study deals with anxiety among Psoriatic patients in Hyderabad city. The State-Trait Anxiety Inventory (STAI) has been used was developed by Charles D. Spielberger (1996).A demographic questionnaire developed by the researcher was also used. A quantitative survey method was employed using statistical procedures such as t-test and f-test. The findings of the study points out that there were significant influence and difference between the biographical variables like age, gender, with State-Trait Anxiety. Based on the findings of the study a set of recommendations were formulated.

Introduction

Psoriasis is a chronic skin disease presenting with scaling and inflammation. The disease occurs in all age groups. It primarily affects adults and less in children. It appears about equally in male and female. Psoriasis occurs when skin cells quickly rise from their origin below the surface of the skin and pile up on the surface before they have a chance to mature. Usually this movement takes about a month but it occurs in only a few days. The chronicity of the diseases has a great impact on the psyche of the patient. It can have a significant negative impact on the physical, emotional and psychological well being of affected patients. Patients with Psoriasis have reduction in their quality of life. A review of the literature showed that psoriatic arthritis affects between 1.3% (6) and 34.7% of patients diagnosed with psoriasis. Two large consecutive German studies from dermatological practices that assessed the prevalence of arthritis from examinations by rheumatologists in 2005 and 2007 were 20.6% and 19.6% respectively.

Many studies and researches reported that patients with psoriasis not only suffered with physical discomfort, but also suffered with impaired general mental health. They suffered from anxiety, depression, behavioural problems, emotional control, and psychological disturbances. They often lost control on emotions like anger, shame and helplessness. The physical disability lowers their self-esteem and self-confidence and they tend to lose social life. Thus this study aims to understand the quality of life that psoriatic patients lead.

Anxiety: Anxiety is a vague feeling of apprehension, worry, uneasiness or dread, the source of which is often non specific or unknown to the environmental changes or helps to create a response to those changes. Anxiety disorders are amongst the most common psychiatric disorders in all over the world.

The stress of living in modern age, owing to various changes going on in social, economic, cultural and allied spheres, has created condition conducive to the development of anxiety (Archana, 1996).

State and trait anxiety: State anxiety is defined as an unpleasant emotional arousal in face of threatening demands or dangers. Trait anxiety reflects the existence of stable individual differences in the tendency to respond with state anxiety in the anticipation of threatening situations.

Methodology

Objectives:

- To examine the presence of anxiety among psoriatic patients of different age groups.
- To examine the presence of anxiety among psoriatic patients across gender.

Hypothesis

H1: Higher age group Psoriatic patients experience more anxiety than lower age group psoriatic patients.

H2: There will be significant difference between male and female psoriatic patients anxiety.

Sample:

It was a case control study and survey method. A sample of 80 individuals constituted the study. A sample of 80 patients suffering from psoriasis taken from dermatology outpatient clinic in Hyderabad city was selected for the present study.

Tools:

State –Trait Anxiety Inventory:

The State-Trait Anxiety Inventory (STAI) was developed by Charles D. Spielberger. It has been used extensively in research and clinical practice. It comprises separate self–report scales for measuring state trait anxiety. The S-anxiety scale (STAI form Y-1) consists of twenty statements that evaluate how respondents feel “right now”, at this moment. The T-Anxiety Scale (STAI form Y-2) consists of twenty statements that assess how people generally feel. The STAI was designed to be self administering and may be given either individually or to groups. The inventory has no time limit.

Scoring of State –Trait Anxiety Inventory:

Each STAI item is given a weighted score of 1 to 4. A rating of 4 indicates the presence of high level anxiety for ten S- anxiety items and eleven T-anxiety items. A high rating indicates the absence of anxiety for the remaining ten S- Anxiety items and nine T- anxiety items.

The scoring weights for the anxiety –present items are the same as the blackened numbers on the test form. The scoring weights for the anxiety –absent Items are reversed. i.e. responses marked 1,2,3,or 4 are scored 4,3, 2,or 1 respectively. The anxiety-absent items for which the scoring weight are reversed on the S-anxiety and T-anxiety scales are

S-anxiety--1, 2, 5, 8,10,11,15,16,19,20.

T-anxiety -- 21, 23, 26,27,30,33,34,36,39.

To obtain scores for the S-Anxiety and T-anxiety scales, simply add the weighted scores the twenty items that make up each scale, taking into the account the fact that the scores are reversed for the above items. Scores for both the s- anxiety and the T-anxiety scales can vary from a minimum of 20 to a maximum of 80.

The overall median alpha coefficient for the S-anxiety and T- anxiety scales for form Y in the normative samples are .92 and .90 respectively as compared to median alphas of .87 for S-anxiety and .89 for T- anxiety in the normative sample for form –x.

The collected responses after scoring were tabulated and SPSS analyzed and interpreted by the following statistical procedures, such as 't' test and 'f' and correlation have been employed.

Results and discussion

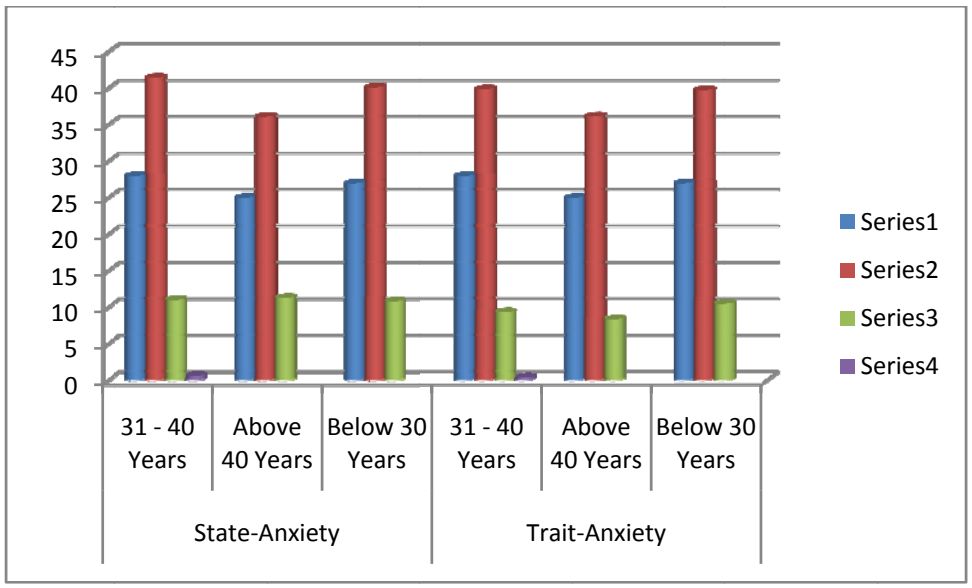
Anxiety scores indicate the type of anxiety experienced by psoriatic patients with regard to biographical variables.

1. **Comparison across age:**

The analysis of the data involved in the comparison of the anxiety across the age groups i.e. below30years 31 to 40 years and above 41 years .The mean scores and F value are tabulated in table- 1. Examination of 'f' values in the table -1 indicates that the mean scores between the two groups are significant in two types of anxiety. The 'f' value for State-anxiety ('f'=0.598), Trait-anxiety ('f'=0.368).

TABLE -1 AGE AND ANXIETY (N= 80)

AGE AND ANXIETY					
Type of Anxiety	Group	N	Mean	S.D	F-Value
State-Anxiety	31 - 40 Years	28	41.46	11.00	0.598
	Above 40 Years	25	36.12	11.26	
	Below 30 Years	27	40.15	10.81	
Trait-Anxiety	31 - 40 Years	28	39.89	9.31	0.368
	Above 40 Years	25	36.16	8.33	
	Below 30 Years	27	39.78	10.50	



Graph -3 Shows State-Trait Anxiety and Age

The table -1 shows the results of state anxiety and trait anxiety with respect to age. The State anxiety and trait anxiety mean scores are high for 31-40 years (m=41.46) Patients when compared with the above 40 years age group (m=36.12) and the 'f' value is 0.598 which found to be highly significant.

Trait anxiety mean scores are high for 31-40 years (m=39.89) patients when compared with the below 30 years age group (m=39.78) and above 40 years (m=36.16) the 'f' value is 0.368 found to be highly significant. This can be interpreted as the patients 31-40 years experience general as well as situational anxiety during psoriasis period is an important criteria to be associated with state and trait anxiety.

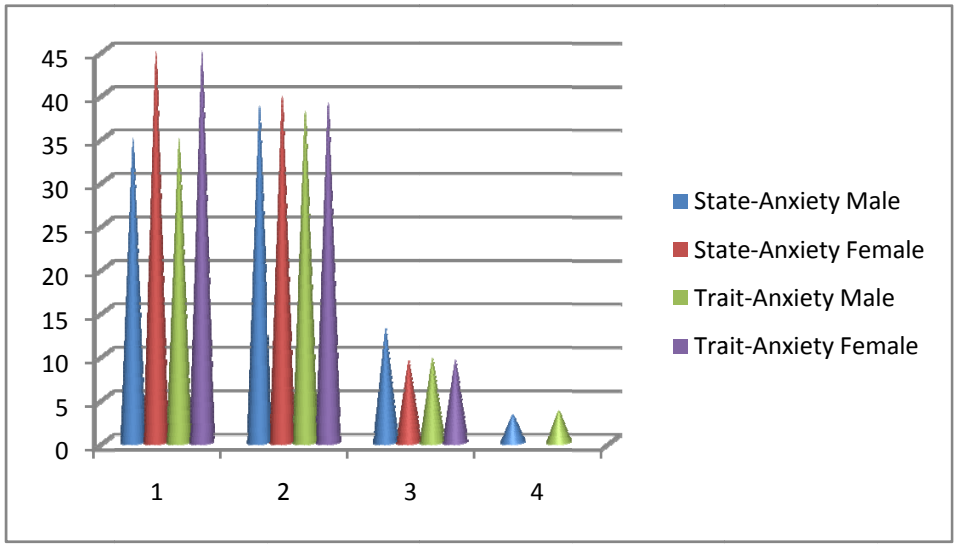
Hence the hypothesis -1 age group31-40 years patients experience anxiety than lower age group (below 30 years) patients is proved.

2. **Comparison Across Gender:**

The mean scores of anxiety across the male and female students are presented in table -2. It may be seen that both male and female experienced anxiety.

TABLE -2 GENDER AND ANXIETY (N=80)

Type of Anxiety	Group	N	Mean	S.D	t-Value
State-Anxiety	Male	35	38.71	13.11	3.167
	Female	45	39.84	9.39	
Trait-Anxiety	Male	35	38.14	9.63	3.648
	Female	45	39.11	9.45	



Graph-4 Shows Gender and Anxiety.

In state- anxiety the mean score for male (m=38.71) and for female (m= 39.84) and the 't' value for state anxiety is 3.167 which is found to be highly significant. It can be discussed that female have high anxiety during their psoriatic period. Therefore their state anxiety is higher when compared with male psoriatic patients.

In Trait- anxiety the mean score of male (m= 38.14) and for female (m= 39.11) and 't' value for trait anxiety is 3.648 which is found to be significant. In summarizing these results shows that male and females differ statistically on state –anxiety. Hence hypothesis -2 there is significant mean difference in the anxiety (state anxiety) of male and female psoriatic patience can be accepted.

The study explored that male and female patients differ in their anxiety. Female patients exhibited high anxiety than male patients. Thus gender influences the anxiety levels. In the present study females were having higher state anxiety than males.

Examination of 't' values in the table -2 indicate that the mean scores between the two groups are significant in two types of anxiety. It can be observed that statistically State- anxiety is significant ($t= 3.167$ $p<0.01$) and Trait- anxiety ($t=3.648$) is significant.

Kaur and Kaur (2007) study shows that there is no significant difference of mean of anxiety level among males and females. These broad groups have been analyzed irrespective of their profession, field of work, socio- economic status and areas to which they belong. People belonging to these sub categories differ with respect to their worries, tension, fear, liabilities etc. When these categories were observed under the broad category of males and females, significant results regarding their anxiety levels could not be found out.

Barinder (1985) found that gender was significantly related to anxiety both state and trait anxiety. Girls exhibited more general anxiety as well as test anxiety than the boys.

Limitations

1. The study was limited to Hyderabad city.
2. The study was carried out in only one organization.
3. Socio economic status was not considered.

Suggestions

1. The study Sample can be increased for the generalization of result.
2. The study could be done in different skin clinics across the city
3. Sample having other physical ailments like B.P, Diabetes could have been included.
4. Study can be done in rural area also.

Conclusion:

On the basis of these findings the researcher strongly felt that the Psoriatic patients need attention in reducing their anxiety. Hence suggested that the Psoriatic patients should seek help and guidance at this stage, and also emphasized the necessity for future research to focus on the specific difficulties and core problems faced by the Psoriatic patients in society. This will help the researcher to plan intervention programmes for fostering effective coping strategies.

In conclusion psoriatic patients also should lead good quality of life on par with normal people. Personality of the psoriatic patients needs to lead a normal means not to be inferior with happy life.

References:

- Archana. (1996). Anxiety in relation to religion, sex and socio- economic status. Indian Psychological Review, 46, pp.6-11.

- Barinder. M (1985). A study of General Anxiety and Test Anxiety with reference to the Environmental Factors and Extraversion-introversion of Delhi students Ph.D. edu., Delhi University.

- Goldsmith LA, Fisher M, Wacks J: Psychological characteristics of psoriatics. Arch Dermatol 100:674–676, 1969.
- Gupta MA, Gupta AK: Age and gender differences in the impact of psoriasis on quality of life. Int J Dermatol 34:700–703, 1995.

- Kaur.V. & Kaur .I. (2007). The analytical measurement of anxiety. Indian Psychological review. Vol.68, No.1, 45-50.

- Stankler L: The effect of psoriasis on the sufferer. Clin Exp Dermatol 6:303–306, 1981 Susskind W, McGuire RJ: The emotional factor in psoriasis. Scot Med J 4:503– 507, 1959

Culturally Responsive Science Teaching and Learning

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Abstract: Culturally responsive Science teaching and learning is the need of the hour. This paper reviews its importance and focuses on the possible ways of incorporating it in teaching learning process through instructional engagement, language identity, critical thinking, collaborative teaching, responsive feedback, social justice etc. to ensure academic achievement of diverse learners while preserving their cultural identity.

India is a country of diverse culture and every teacher needs to integrate this aspect to teaching learning process so as to make the content more easily palatable. In science when concepts are linked to culture they are much clearer and retained to a very great extent. It is important for a teacher to resonate teaching with the cultural background of the learner. We don't need a spectrum teaching method or curriculum for students based on their cultural background. Teaching the entire class in a way that all the students can relate to and understand, using aspects of their cultures makes the understanding comfortable. It is not to stray too far from comfort zone and consequently appear fake to the students it's only trying to engage. For example, incorporating music into science lessons because many of the students relate to music.

In urban settings, culturally responsive delivery of instruction requires a discourse method that facilitates interaction with students and constructive feedback. This form of interactive pedagogy can be initiated in different ways, including question-and-answer techniques, group activities, projects etc. to keep students engaged and involved.

An interdisciplinary approach could go a long way and thought provoking questions that nurture thinking across disciplines are effective educational tools when asked before, during, and after a learning experience. This form of question-and-answer instructional style, then, has a significant impact on learning because questions are major vehicles for frequent interaction and academic feedback. The frequency with which teachers pose questions is one of the major factors that determine the extent of a positive effect on students; the most effective teachers ask approximately three times as many questions. Dialogues that comprise question-and-answer exchanges that are culturally inclined allow for frequent academic interaction and provide numerous opportunities for students to be actively involved and receive immediate feedback. Students also feel an enhanced sense of self-esteem when they receive praise for positive input (Brophy & Good, 1986).

Culturally responsive teaching helps in bridging the gap existing in the conceptual understanding among students and engages students from non-dominant cultures in demonstrating their proficiencies in Science, language usage, grammar, mathematical knowledge and other tools they use in their everyday lives. Further, by understanding the features of this knowledge, students from non-dominant cultures can learn how to translate the previous knowledge and map them onto the school curriculum.

By bringing alternative ways of knowing and communicating into schools, the curriculum as well as the students benefits the student. Culturally responsive teaching creates these bridges and in doing so, offers the possibility for transformational knowledge that leads to socially responsible action. The question that raises in our mind is, how do we go about it? Some of the possible focus points are:

Instructional Engagement: A constructivist approach with collaborative methods could contribute to teaching methodology. Including real life illustration in common language that can be applicable in immediate environment. Exposure to different text and comprehension of the text **Culture and language Identity**: All of them develop from psychological and social environment of the leaner that influences the learning process. Enculturation is the process by which students become knowledgeable of and competent in their communities throughout life, and socialization is the process of behaving based on the accepted norms and values of the culture or society the individual experiences (Pinker, 2002). Teaching Science from cultural perspective gives a better understanding of the concepts. The emphasis is on daily life applications and therefore the retention is much easier. Science has its own language that include the scientific terminology. To develop this language of science, culture can play a major role. The culture that the students bring to the class can definitely unveil the scientific language. The use of turmeric as an indicator, 'grahan' and eclipse and revolution, rotation are a few to name. Culturally responsive methods provide teachers with the critical understanding of how students' cultural, linguistic, and racial identities develop and how these aspects impact learning.

Multicultural awareness: Critical multicultural awareness skills to objectively examine their own cultural values, beliefs and perceptions. This critical reflection provides teachers with a better understanding of values embedded in science. In India there is so much of cultural diversity that the class is full of students from different cultures. The teacher when exposed to multicultural awareness interact better and can reach out better to the students at their level of understanding. Different cultures have a very different perspectives that can be scientifically explained. The delicacies of a region are in sync with the nutritional requirement of that place. Thus, it is important for the teachers to be aware of the varied culture and analyse the scientific applications. It provides teachers with the skills to gain greater self-awareness, greater awareness of others, and better interpersonal skills; it also helps teachers to more effectively challenge stereotypes and prejudices (Banks, 2004).

High expectations: High expectation refers to the ability to communicate clear and specific expectations about what the student is expected to know at the end of the class. Cultural awareness can help the teacher to set higher goals for teaching and learning. This helps to design instructional strategies and curricula within the context of students' cultural and linguistic background.

Critical thinking: Critical thinking is the ability to think for oneself, apply reasoning and logic to new or unfamiliar ideas, make inferences and solve problems. Culturally responsive science teachers integrate cultural experiences with challenging learning experiences that develop higher order thinking.

Social Justice: an understanding about the social, political and environmental challenges that the societies, communities and individuals face and act upon these challenges (Cochran-Smith 2004). A culturally responsive teaching practices and curricula is student centered and helps the child take decisions about the social issues existing around them. cultural responsiveness goes beyond remedying mismatches from mishandled differences; it uses explicit instruction to help students access valued cultural capital, and it acknowledges that structural inequalities, including disparities in political and economic power, inhibit diverse students from succeeding (Ladson-Billings, 2009). In India scientific reasoning could solve many social issues pertaining to inequality, environmental aspects, health related issues aspects etc. This is possible because culturally responsive teachers include a strong social- justice component in their instruction. Every lesson can begin with a social problem and the scientific concept a solution to it. This can be illustrated, teaching concept of water could begin with a debate on scarcity of water, concept of work with fruitfulness for the society, force with its misuse and cause harm to the society etc. This also nurture a sense of urgency to find solutions for them that can bring social change. Achieving this is possible through application of collaborative teaching responsive feedback, modeling and instructional scaffolding.

Collaborative Teaching: Collaborative teaching is an all-encompassing term for instructional methods (e.g., cooperative learning, differentiated instruction, peer teaching, reciprocal teaching) that involve joint intellectual effort (i.e., requiring individual accountability, positive interdependence, and strong interpersonal skills) between students and teachers (Klingner & Vaughn, 1996, 1999; O'Connor & Vadasy, 2011; Vaughn et al., 2011). Collaborative learning forms the basis of the culturally responsive teaching that enhances interdependence, sharing, and collaboration. In this process the teacher may orient the learner to the problem areas and assigns work according to the students' interest related to their cultural background. The groups are heterogeneous based on learning abilities to enable knowledge sharing. The teacher identifies the gaps in the conceptualization and learning challenges and required intervention is reciprocated. This format of small group teaching facilitates understanding concepts, deriving the main idea, asking and answering questions and relating their own learning to cultural background.

Responsive Feedback Culturally responsive feedback is when teachers gives continuous and immediate feedback regarding students' responses and participation after critical analysis. Through culturally responsive feedback, teachers extends individualized support regarding performance tailored to students' individual and cultural preferences. This strategy includes incorporating students' responses, ideas, languages, and experiences into the feedback at the same time inviting students to construct new understandings regarding what they are learning (McIntyre & Hulan, 2013)

Modeling: Culturally responsive modeling requires teachers to exemplify learning outcomes of CRT, which include strategy use, content learning, metacognitive and critical thinking, and interest and respect for cultural and linguistic diversity.

Instructional Scaffolding: Scaffolding skills include using different types of questions (e.g., open-ended questions, analytic questions); providing appropriate wait time and taking turns; extending and acknowledging students' responses; and using supporting instructional materials (e.g., visual organizers, story maps; Jiménez & Gersten, 1999). Scaffolding can be effective for students with academic difficulties. For example language teaching could include aspects of culture and scientific reasoning of existing cultural practices. Using supporting instructional strategies such as visual organisers, concept maps, graphs etc.

Problem- Solving Approach: Designing situations and creating opportunities for real investigation for challenges motivates students for higher order thinking in the context of the existing cultural and linguistic issues. Culturally responsive problem solving bring students closure to the society and social issues. Since Indian classrooms are diverse culturally responsive problem solving could effectively carry the concepts of science.

Child- Centered: the teaching learning process is steeredheaded by the students, therefore greatly influenced by the culture. The ideas generated, previous knowledge, values and believes influence the thought process in the class. The communication style and preferences carried to the classroom discussions paves way for cultural orientations. The classroom activities are selected and directed by themselves and focused on facilitating student dialogue. They involve in conversation in developing the generalization. This helps in linking personal, culture, family, and community.

Assessment: standardized assessment with theses diverse students in very difficult. More focus on formative assessment including cultural and linguistic diversity. Designed tests for students from different background to identify student's strength and harness on their potentials. The assessment should also consider the cultural background and experiences of the learner and help overcome their weaknesses. The continuum of improvement is to be assessed specific skills.

Conclusion: To ensure the academic achievement of diverse learners in urban, rural while preserving their culture and identity, teachers need to gear up their understanding and need for implementation of culturally responsive strategies and approaches. As rightly given by Klinger et al.,(2005) "Academic success and cultural identity can and must be simultaneously achieved, not presented as dichotomous choices". A joint effort at all levels to implement culturally responsive teaching practices can significantly impact the society at large and truly make it a global village.

Bibliography

Aud, S., Wilkinson-Flicker, S., Kristapovich, P., Rathbun, A., Wang, X., & Zhang, J. (2013). The condition of education 2013 (NCES 2013-037). Retrieved from U.S. Department of Education, National Center for Education Statistics website: http://nces.ed.gov/pubs2013/2013037.pdf

Allen, B. A., & Boykin, A. W. (1992). AfricanAmerican children and the educational process: Alleviating cultural discontinuity through prescriptive pedagogy. School Psychology Review, 21(4), 586–596. Allen, B. A., & Butler, L. (1996).

Behrstock, E., & Clifford, M. (2010). Ensuring the equitable distribution of teachers: Strategies for school, district, and state leaders. Retrieved from ERIC database. (ED520725)

Gay, G. (2002). Preparing for culturally responsive teaching. Journal of Teacher Education, 53(2), 106–116.

Johnson, D. W., & Johnson, R. T. (2000). Cooperative learning, values, and culturally plural classrooms. In M. Leicester, C. Modgil, & S. Modgil (Eds.), Education, culture and values: Vol. 3. Classroom

Kea, C., Campbell-Whatley, G. D., & Richards, H. V. (2006). Becoming culturally responsive educators: Rethinking teacher education pedagogy (practitioner brief series). Tempe, AZ: National Center for Culturally Responsive Educational Systems.

Marzano, R. J. (2007). The art and science of teaching: A comprehensive framework for effective instruction. Alexandria, VA: Association for Supervision and Curriculum Development. Max, J., & Glazerman, S. (2014).

Ladson-Billings, G. (1994). The dreamkeepers. San Francisco: Jossey-Bass Publishing Co.

Santamaria, L. J. (2009). Culturally responsive differentiated instruction: Narrowing gaps between best pedagogical practices benefiting all learners. Teachers College Record.
Terese C. Aceves Loyola Marymount University Michael J. Orosco University of California-Riverside July 2014 "Cultura Responsive Teaching" CEEDAR Document No. IC-2

Wiggins, G., & McTighe, J. (2005). Understanding by design (Expanded 2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

Thinking Processes in relation to the Spiritual Intelligence of Teachers

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Abstract:

The research paper enumerates the relationship between Spiritual Intelligence and Thinking Process. A descriptive survey with a sample of 110 teachers from AP and Telangana was analyzed using t-test, Pearson's correlation and ANOVA. The results indicate that Spiritual Intelligence influences thinking process such as creative thinking, logical thinking and critical thinking.

Introduction

Spiritual intelligence is a capacity for a deeper understanding of existential questions and insights into multiple levels of consciousness. It's a higher dimension of intelligence that activates the qualities and capabilities of soul, in the form of wisdom, compassion, integrity, love, joy, creativity and peace. Holistic education engages the whole person – teaching students to think critically and creatively for themselves. At the beginning of the twentieth century, as psychologists discovered ways and means to measure intelligence. Aristotle's definition of a man as ' a rational animal' developed into an obsession with IQ. In the mid- 1990s, Daniel Goleman popularized research into emotional intelligence EQ, pointing out that EQ is a basic requirement for the appropriate use of IQ. As we near the end of the 20^{th} century, there is enough collective evidence from psychology, neurology, anthropology and cognitive science to show us that there is a third 'Q', 'SQ', or Spiritual Intelligence.

Importance and Significance

Spiritual Intelligence is necessary for discernment in making spiritual choices that contribute to psychological well-being and overall healthy human development. It calls for multiple ways of knowing and for the integration of new life of mind and spirit with the outer life of work in the world. There is a greater need of the teachers to uphold their morality and dignity in the society. SQ is an innate dimension of intelligence that everyone can learn to use. As a higher dimension of intelligence that advanced capabilities. SQ has great personal and social benefits. The qualities of spiritual intelligence are experienced in the form of wisdom, compassion, integrity, joy, love, creativity and peace. However, SQ is more than simply understanding the concept of spiritual intelligence. It's also necessary to experience spiritual intelligence in order to gain its benefits.

3Q Training is therefore the means of personal and professional growth and fulfillment. Research shows that when organizations invest in 3Q Training, creativity and innovation increase. Ultimately, the combined benefits of 3Q training, both individual and collective contribute to an emerging new age of cooperation, tolerance, social justice, human rights, shared prosperity and peace. Since the turn of the millennium, Spiritual Intelligence (SI) has gained increasing recognition. More and more questions are being studied under the light of SI. It is being considered as important norm of human resource. Most of the research for analyzing SI is done in the field of business. Very less of research has been done in the field of education where lives of people actually get shaped. Teachers must have this holistic form of intelligence in order to serve our students and bestow them with the most profound gift, enabling them with the ability to create vision and meaning in their lives. Future teachers must acknowledge, understand and possess spiritual intelligence so that they can find deep purpose of their lives.

To build a nation, teachers play a pivotal role. They have to nourish the young minds to be a great one. This is not an easy task as only the best teacher can bring out the best in us. Thus to produce quality individuals we need quality teachers. Envisaging the importance and influence of spiritual intelligence on the teaching profession, this study the relationship of thinking processes and spiritual intelligence in teachers has been intended

Research Questions

1. How does Spiritual Intelligence of a person affect their thinking patterns and behaviors?
2. Will there be a conflict between Spiritual intelligence and thinking processes, since they are of both ends of the same string?
3. Can there be a relationship and bond between Spiritual intelligence and thinking Processes?
4. Do they correlate and depend on one another for the good of humanity/
5. Do their relationship differ based on the gender, qualification, type of administration and the teaching experience?
6. Do the combination of the two words the Spiritual Intelligence of teachers in particular contribute to the development of the future of the society, the student community?

Objectives

- To identify the various components of thinking processes of teachers
- To assess the levels of Spiritual Intelligence of the Teachers
- To study the influence of Spiritual Intelligence on the thinking processes like Creative Thinking, Logical thinking and Critical Thinking.
- To study the differences in thinking processes in relation to spiritual intelligence with respect to gender, Qualification, type of administration and teaching experience.

Hypotheses

- There exists a significant difference in thinking processes with respect to Spiritual Intelligence of Teachers
- There is a significant correlation between Spiritual Intelligence and Thinking Processes as a whole
- There is a significant correlation between Spiritual Intelligence and the components of thinking processes such as creative thinking, logical thinking and critical thinking
- There is a significant difference in thinking processes and spiritual intelligence with respect to gender, qualification, type of administration and teaching experience.

Variables

- Independent Variable
  Spiritual Intelligence
- Dependent Variable
  Thinking Processes in Teachers
- Critical Thinking
- Creative Thinking
- Logical Thinking

Methodology

A descriptive survey was conducted through both in person and mail distribution of the questionnaire. The 7 schools from AP were administered on line. The researcher used the Gmail.com and WhatsApp to send and receive the questionnaire. The 12 schools in Telangana were administered in person. The tool was developed based on standardized tools "Integrated Spiritual Intelligence Scale "(ISIS) and "Spiritual Intelligence Self-Report Inventory" (SISRI). The tool for thinking processes was developed based on the components of Critical Thinking, Creative Thinking and Logical Thinking. The tools were standardized by establishing their reliability and validity. The sample included 110 Teachers.

56 Male teachers and 54 Female Teachers. Stratified random sampling technique was employed to select teachers from nineteen different schools covering both Andhra Pradesh and Telangana states. The group was divided into higher spiritually intelligent and lower spiritual intelligence. The scores were then statistically analyzed using t-test, Pearson's Correlation and ANOVA

Analysis and Interpretation:

Hypothesis 1: There exists a significant difference in thinking processes with respect to Spiritual Intelligence of Teachers

	N	Mean	SD	t- value	Level of significance
Higher Spiritual Intelligence	50	47.20	5.28	7.07	0.05
Lower Spiritual Intelligence	50	39.66	5.37		
df=98				Table value=1.98	

Interpretation: The above table indicates the difference in thinking processes with respect to spiritual intelligence. The mean value of thinking processes for the higher spiritual intelligence is 47.20 which is higher to that of the mean value of thinking processes for lower spiritual intelligence is 39.66 with S.D of 5.28 and 5.37 respectively. The obtained t-value is 7.07 with df 98 and its table value is 1.98 significant at 0.05 level is greater than the table value. Hence the null hypothesis is rejected and research hypothesis is accepted.

Hypothesis 2: There is a significant correlation between spiritual intelligence and Thinking Processes as a whole

	N	Mean	SD	r
Spiritual Intelligence	110	44.84	7.64	0.656
Thinking Processes	110	48.46	7.19	

Interpretation: The above table shows the relationship between spiritual intelligence and thinking processes as a whole. The mean obtained for spiritual intelligence is 44.84 which is less than thinking processes which is 48.46. There is a slight variation in S.D. The pearson's correlation obtained 0.656 shows a moderate relationship between spiritual intelligence and thinking processes as a whole.

Hypothesis 3: There is a significant correlation between spiritual intelligence and the components of Thinking Processes such as creative thinking, logical thinking and critical thinking

	N	Mean	SD	r
Spiritual Intelligence	110	44.84	7.67	
Creative Thinking	110	47.37	8.93	0.560
Logical Thinking	110	48.66	8.12	0.532
Critical Thinking	110	49.30	9.72	0.487

**Correlation is significant at the 0.01 level (2-tailed)

Interpretation: From the results of the above table it can be seen that high significant correlation between spiritual intelligence and thinking processes such as creative thinking, logical thinking and critical thinking. (r value 0.487,$p<0.01$) hence, the null hypothesis is rejected and the research hypothesis is accepted. The result indicate if the teachers' spiritual intelligence increases high there is also an increase of capacity of their thinking processes such as creative thinking, logical thinking and critical thinking.

Hypothesis 4: There is a significant difference in thinking processes and spiritual intelligence with respect to gender.

	Mean Sq	Sq of Means	ANOVA/F	Level of significance at 0.05
Creative Thinking	28.711 7.073	28.711	4.059	Significant
Logical Thinking	24.075 5.920	24.075	4.067	Significant
Critical Thinking	58.169 8.011	58.169	7.261	Significant
Thinking Processes	320.115 39.721	320.115	8.059	Significant
Spiritual Intelligence	146.964 19.722	146.964	7.452	Significant

Interpretation: from the above table it is evident that the calculated f value is 4.059(1,109) for creative thinking at the level of .046 (1,109) for logical thinking at the level of .046, f value 7.261 (1,109) for critical thinking at the level of .008, f value 8.059 (1,109) for thinking processes at the level of 005, f value 7.452 (1,109) for spiritual intelligence at the level of .007 ehich is greater than the table value 3.92 at 0.05 level. Hence the null hypothesis is rejected and research hypothesis is accepted. That means there is a significant difference in thinking processes and spiritual intelligence with respect to gender.

Hypothesis 5: There is significant difference in thinking processes and spiritual intelligence with respect to Qualification

	Mean Sq	Sq of Means	ANOVA/F	Level of significance at 0.05
Creative Thinking	20.038	20.038	2.820	Not Significant
		7.104		
Logical Thinking	9.456	9.456	1.599	Not Significant
		5.912		
Critical Thinking	.024	.024	.003	Not Significant
		8.435		
Thinking Processes	54.697	54.697	1.372	Not Significant
		39.863		
Spiritual Intelligence	25.214	25.214	1.188	Not Significant
		21.216		
Df(1,108)			Table value = 3.89	

Interpretation: from the above table it is evident that the calculated f value is 2.820 (1,1080 for creative thinking at the level of .096, f value 1.599 (1,108) for logical thin king at the level of .209, f value .003 (1,108) for critical thinking at the level of .957, f value 1.372 (1,108) for thinking processes at the level of .244, f value 1.188 (1,108) for spiritual intelligence at the level of .278 which is lesser than the table value 3.98 at 0.05 level. Hence the null hypothesis is accepted and the alternative hypothesis is rejected. That means that there is no significant difference in thinking processes and spiritual intelligence with respect to qualification.

Hypothesis 6: There is significant difference in thinking processes and spiritual intelligence with respect to type of administration

	Mean Sq	Sq of Means	ANOVA/F	Level of at sig .05
Creative Thinking	.432	.216	.030	Not Significant
		7.308		
Logical Thinking	19.260	9.630	1.638	Not Significant
		5.880		
Critical Thinking	60.472	30.236	3.728	Significant
		8.110		
Thinking Processes	130.629	65.314	1.574	Not Significant
		41.508		
Spiritual Intelligence	.575	.288	.013	Not Significant
		21.425		
		df (2,107)	Table value = 3.07	

Interpretation: From the above table it is evident that the calculated f value is .030 (2,107) for creative thinking at the level of .971, f value 1.638 (2,107) for logical thinking at the level of .199, f value 3.728 (2,107) for critical thinking at the level of .027, f value 1.574 (2,107) for thinking processes at the level of .212, f value .013 (2,107) for spiritual intelligence at the level of .987 which is lesser than table value 3.07 at 0.05 level, except with the critical thinking f value 3.72ehich is greater than table value. Hence the null hypothesis is accepted and the alternative hypothesis is rejected. That means there is no significant difference in thinking processes and spiritual intelligence with respect to type of administration, except with critical thinking

Hypothesis 7: There is significant difference in thinking processes and spiritual intelligence with respect to teaching experience.

	Mean Sq	Sq of Means	ANOVA	Level of significance at 0.05
Creative Thinking	87.422	21.856	1.043	NS
	20.948			
Logical Thinking	44.518	11.130	1.501	NS
	7.415			
Critical Thinking	41.253	10.313	1.809	NS
	5.702			
Thinking Processes	37.317	9.329	1.097	NS
	8.505			
Spiritual Intelligence	340.993	85.248	2.017	NS
	42.269			
df (4,105)		table value = 2,45		

Interpretation:

From the above table it is evident that the calculated f value is 1.043 (4,105) for creative thinking at the level of .389, f value 1.501 (4, 105) for logical thinking at the level of .207, f value 1.809 (4,105) for critical thinking at the level of .133, f value 1.097 (4,105) for thinking processes at the level of .362, f value 2.017 (4,105) for spiritual intelligence at the level of 1.097. which is lesser than the table value 2.45 at 0.05 level. Hence the null hypothesis is accepted and the alternative hypothesis is rejected. That means there is no significant difference in thinking processes and spiritual intelligence with respect to teaching experience.

Implications of the Study

- This study proved worth, helped the teachers to identify their Spiritual Intelligence and its influence in relation to their various thinking processes like critical thinking, creative thinking and logical thinking.
- It also proved to be moderately correlated with one another with respect to gender, qualification, type of administration, teaching experience. So the teachers of today need to be enlightened to take the measures that will enhance their spiritual intelligence to think better creatively, logically and critically

Conclusion

Increase in Spiritual Intelligence will definitely benefit the society ahead. As we know " a good tree bears good fruit and a bad tree bears bad fruit" let the teaching community pay attention to the sentence and amend ways to help humanity to good and inspirational sustainability.

Recommendations

1. Study can be done on other components of thinking processes like intuition, conceptual thinking, contemplative thinking, convergent thinking, counterfactual thinking, divergent thinking and Meta cognition

2. Demographic variables like participant's age, positive attitude, their socio-economic status, cultural ethnicity as well as their spiritual background or orientation can also be included in the study.
3. Experimental design with appropriate modules can also be tried

Bibliography:

- Amraam. Y. & Dryer. C (2007), The Development and Preliminary Validation of Integrated Spiritual Intelligence Scale (ISIS)
- Craft, A. (1997) ' Identity and creativity: educating for post-modernism?' in teacher development: an international journal of teachers professional development, vol.1,no.1
- Emmons. R. (2000), Spirituality and Intelligence: Problems and Prospects, International Journal for the Psychology of the Religion
- International Journal in Management and Social Science (Impact Factor) Vol.03 Issue –05
  May 2015, ISSN 2321-1784
- International Journal of Education and Psychological Research, ISSN 2279-0179 Vol.2, Issue 2, April 2013
- Sisk, D.A., and Torrance, E.P.(2001). Spiritual Intwelligence: Developing Higher Consciousness. Buffalo, NY. Creative Education Foundation
- Vaulghan. F. (2002), What is Spiritual Intelligence? Journal of Humanistic Psychology, Vol. 42, No. 2, Sage Publications
- Worth. Fry. P (2000), Religious involvement, spirituality and personal meaning for life: Existential predictors of psychological wellbeing in community-residing and institutional care of elders. Aging & Mental Health, 4(4)
- Wolman. R. (2001), Thinking with your Soul: Spiritual Intelligence and why it matters. Harmony Books, New York
- Zohar and Marshall. (2000), SQ: Spiritual Intelligence: The ultimate intelligence. London: Bloomsbury.

Perceptions of Student Teachers on Online Evaluation and Assessment for Enriched Learning.

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Abstract:
The purpose of this paper is to discuss the perceptions of student teachers on online evaluation and assessment. With this purpose the perceptions of student teachers on online evaluation and assessment was analyzed. The current study falls under the purview of Descriptive Survey research. The samples considered under study were a set of 180 student teachers from 6 different colleges of education in Hyderabad city. The data was collected using standardized tool which consists of 50 statements. Since the data collected is quantitative in nature, quantitative statistical methods were used to analyze and interpret the data and the technique used was ANOVA. The research findings revealed that the perceptions of student teachers regarding online assessment and evaluation improve enriches their learning process, helps in finding out the capabilities of the learner, development of various skills, and encouragement to creative answers. The above aspects can be developed only when the student teachers are exposed to virtual classroom and practical activities for using online education. This study provides instructors, administrators, and test developers with alternative ways to improve and assess skill through online evaluation and assessment strategies.

Introduction:

Information and communication technology (ICT) is a diverse set of technological tools and resources used to communicate and to create, store and manage information. ICT has become part of everyday life and all sectors from banking to tourism now depend heavily on ICT for carrying out their transactions. Learning occurs when learners impart meanings and structures to knowledge and information. Learning enhances students in an interactive learning environment, as feedback and reflection effectively help knowledge construction. The engagement of learners in a learning environment of this kind is a key reason for bringing learning technologies into teaching. Learners are thought to be active constructing knowledge as they actively engage to develop skills in analysis, synthesis and evaluation as part of their course requirements. Online education is gradually being incorporated into colleges and university programs. It is proving to be an effective educational tool for our rapidly changing global marketplace. Online changes involve the development and increasing use of online education. Online and blended learning have become common educational strategy, online assessment and evaluation have a vital role in teaching learning process. In contrast to conventional paper-based assessment, more interaction is likely to occur through online assessment.

Since the turn of the 21st century, emphasis has shifted from supervision to evaluation, as well as from teacher behavior to student achievement. In the past, most of the attention was paid to marks/grades on student work. Today, there is increased focus on on-going descriptive feedback that teachers give to students so that the students can clearly understand how to improve. Assessment and evaluation are very important parts of the constructive alignment process

Well-designed assessments will allow your students to use the knowledge and skills they have learnt and indicate their level of mastery. The feedback on the assessments will also provide students with clear information on the criteria they need to match to succeed at the tasks, and can give the lecturer a clearer sense of how the task is assessing mastery and what aspects are being assessed. Evaluation of the course or module, by students and lecturers should feed back into the whole process of curriculum alignment, and reflect critically and constructively on the outcomes, the teaching and learning activities, the assessments and the experience of the course or module. Reflexivity and continuous learning and development are key aims of successful evaluation.

Objectives of the study

- To identify online evaluation and assessment strategies adopted by College of Teacher Education.
- To understand the perceptions of student teachers on online assessment and evaluation for enriched learning in College of Education.

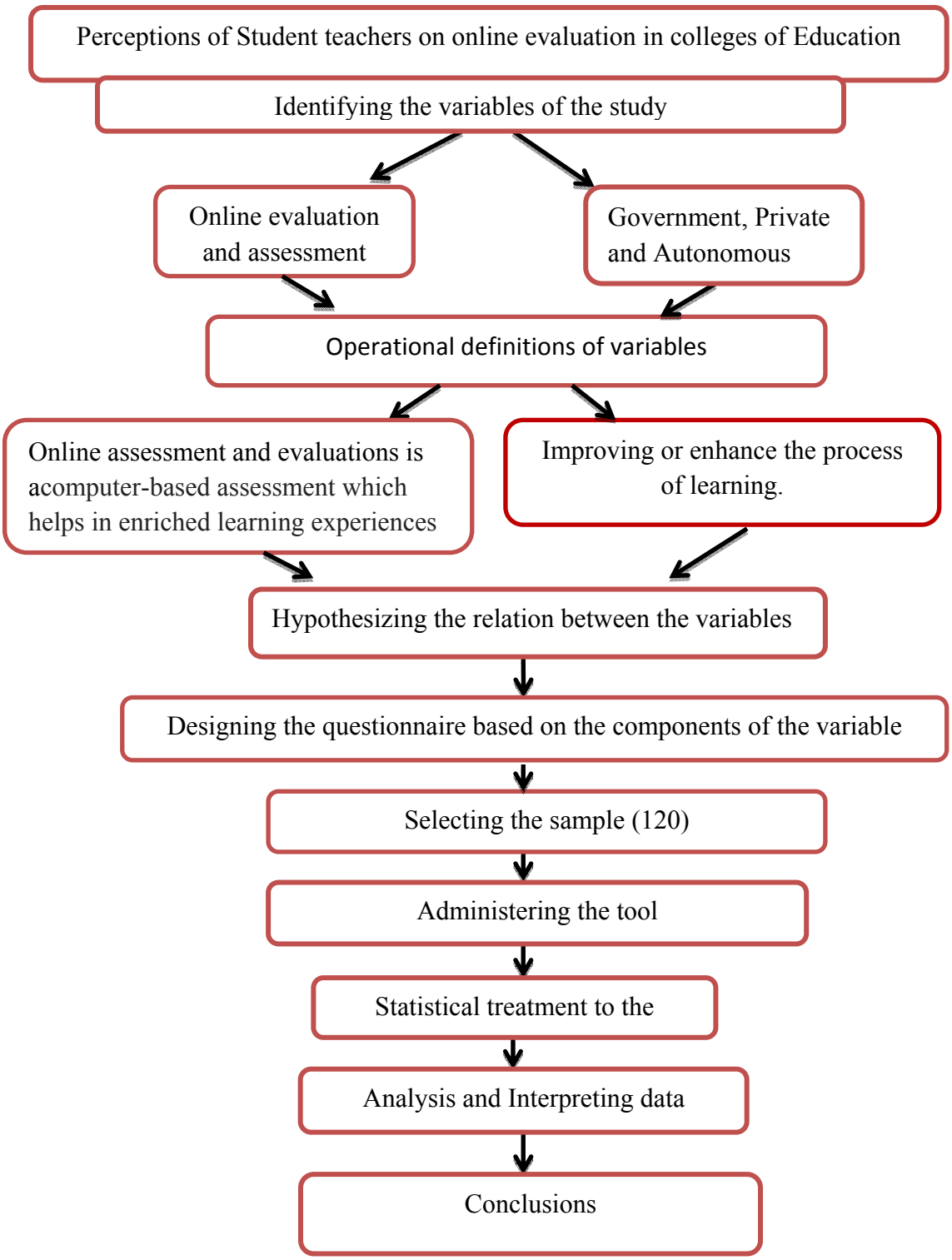
Hypotheses of the study

- There is a significant difference in the perceptions of online assignment and e-formative assessment among student teachers of government, private and autonomous colleges of education.
- There is a significant difference in the perceptions of online based multiple choices and online based open ended questions among student teachers of government, private and autonomous colleges of education.
- There is a significant difference in the perceptions of online based technology and e-learning among student teachers of government, private and autonomous colleges of education.
- There is a significant difference in the perceptions of e-portfolio among student teachers of government, private and autonomous colleges of education.

A review of research on studies on online assessment and evaluation has allowed us to identify several areas of study that have been developed in different periods and under different methodological assumptions. From the beginning, research has been centered on the usage of online assessment an evaluation particularly in colleges of education, new studies have been carried out on the impact and effects of the use of these technologies in colleges of education. The previous studies were done in different areas related to online evaluation and assessment, the use of online evaluation and assessment has enriched learning experiences of the students. Reflective practices enhance student's ability to articulate their knowledge and skills to their peers, teachers, and future employers. A high degree of commitment and practical activities should be inculcated in teacher training programs. Hence, the current research problem was considered for study to find the perceptions of student teachers on online evaluation and assessment.

Methodology: A descriptive survey research was applied. Colleges of education were the unit of sampling used. A procedure for data gathering was developed and a questionnaire to collect the necessary information were designed and validated.

Flowchart showing the activities of the researcher during the study



Descriptive survey was selected as a mode to collect the data, since the study is to understand the perception of student teachers, a descriptive survey was most suited with the help of a survey tool designed based on the components, questionnaire of 60 statements were formulated for a pilot study and the sample and population were taken i.e., the student teachers of St. Ann's College of Education. The tool was administered to the student teacher, the data was entered in an excel sheet to know the reliability and validity of the tool administered. The present study on perceptions of student teachers on line evaluation and assessment is a survey design conducted in government, private and autonomous colleges of education with a sample of 180student teachers. The below table represents the sample in the present study:

Type of institute	Name of the college	Occupation	Number of samples
Government	IASE College of Education	B.Ed. trainee teachers	30
Government University College of Education	IASE College of Education	B.Ed. trainee teachers	30
Private	Shadan College of Education	B.Ed. trainee teachers	30
Private	St. Mary's College of Education	B.Ed. trainee teachers	30
Autonomous	St. Ann's College of education	B.Ed. trainee teachers	30
Autonomous	Durgabai Deshmukh College of Education	B.Ed. trainee teachers	30

Based on the research objectives and hypotheses the item pool was framed with 60 statements for the pilot study. 15 student teachers were the sample for administration of the test they were given time for 15-20 minutes to complete the questionnaire. The scale has three point scales such as Agree, Disagree, and Neutral. The teacher trainees are expected to put a tick mark against each question that best reflects their degree of agreement or disagreement with a total of 20 Colleges of Education were listed. Since the variables included government, private and autonomous, two from each administrator were selected randomly. A quick and accurate response was expected. The researcher was present all throughout in any case of difficulty arising in understanding the questionnaire. The reliability and validity of the tool was established. The positive statement of the scale is given the scoring order as 1, 2, 3 and scoring order 3, 2, 1 is followed for negative statements.

After established the reliability and validity the questionnaire was framed into 50statements for the study of which includes 15 statements of online assignment and 5 statements of e-formative assessment, 6 statements of online based multiple choice test and 4statements of open ended questions, 5 statements of online based technology and 10statements of e-learning, 5 statements of E-portfolio.

Variables of the study

Variables are the conditions or the characteristics that the researcher manipulates controls and observes. Variables are classified as:

- Independent variable: Government, Private and Autonomous
- Dependent variable: Online evaluation and assessment, Enriched learning

Results and Discussions:

In the present study were online assessment and evaluation is independent variable and enriching learning are dependent variables scores of each response were recorded in a excel sheet. Sum of each component in online assessment and evaluation were calculated. Based on the scores of each domain was classified into high and low.

The statistical technique used in present study is one way ANOVA. The data was calculated using SPSS package. This study dealt with the methodological procedure in detail and the plan for further processing of data keeping in view the objectives of the study and the hypotheses formulated.

Hypothesis – 1

Research hypothesis: There is a significant difference in the perceptions regarding online assignment and e-formative assessment among student teachers of government, private and autonomous Colleges of Education.

Null hypothesis: There is no significant difference in the perceptions regarding online assignment and e-formative assessment among student teachers of government, private and autonomous Colleges of Education.

Table below represents the perceptions regarding online assignment among student teachers of government, private and autonomous Colleges of Education.

Online assignment	Sum of squares	Mean square	Degree of freedom(df)	*f*	Level of significance
Between groups	57.744	28.872	2		
Within groups	2491.500	14.076	177	2.051	Not significant at 0.05 level
Total	2549.244		179		

f value =(2.051),table value=3.04

Interpretation: The above table indicates the perceptions regarding online assignment among student teachers of government, private and autonomous colleges of education between groups (*sum. Squares*=57.744,*M.Sq.*=28.872) and within groups (*sum. Squares*=2491.500, *M.Sq.* =14.076), the obtained *f* value is 2.051 at df(2, 177) is less than the critical value *3.04 at p< 0.05 level of significance*.

Hence the null hypothesis is accepted which implies ,there is no significant difference in the perceptions regarding online assignment among student teachers of government, private and autonomous Colleges of Education and research hypothesis is rejected.

The below graph represents the graphical representation of between and within groups for the perceptions regarding online assignment among student teachers of government, private and autonomous Colleges of Education.

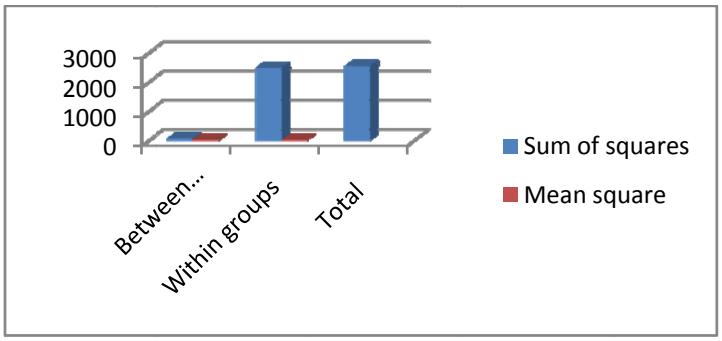


Table below represents the perceptions regarding e-formative assessment among student teachers of government, private and autonomous Colleges of Education.

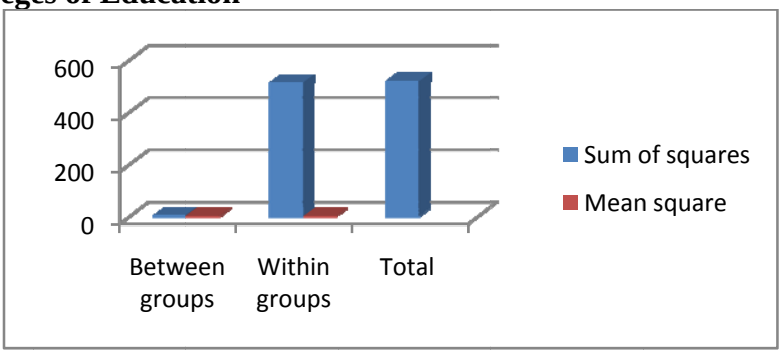
e-formative assessment	Sum of squares	Mean square	Degree of freedom(df)	*f*	Level of significance
Between groups	6.300	3.150	2		
Within groups	514.650	2.908	177	1.083	Not significant at 0.05 level
Total	520.950		179		

f value=(1.083), table value=3.04

Interpretation: The above table indicates the perceptions regarding e-formative assessment among student teachers of government, private and autonomous Colleges of Education between groups (*sum. Squares*=6.300, *M.Sq.* = 3.150) and within groups (*sum. Squares*=514.650, *M.Sq.* =2.908), the obtained *f* value is 1.70 at *df*(2,177) is less than the critical value *3.04 at p< 0.05 level of significance*.

Hence the null hypothesis is accepted which implies, there is no significance difference in the perceptions regarding e-formative assessment among student teachers of government, private and autonomous Colleges of Education and research hypothesis is rejected.

The below graph representation of between and within groups for the perceptions regarding e-formative assessment among student teachers of government, private and autonomous Colleges of Education



Hypothesis-2: Research hypotheses: There is a significant difference in the perceptions regarding online based multiple choices and online based open ended questions among student teachers of government, private and autonomous Colleges of Education.

Null hypotheses: There is a no significant difference in the perceptions regarding online based multiple choices and online based open ended questions among student teachers of government, private and autonomous Colleges of Education.

The below represents the perceptions regarding online based multiple choices among government, private and autonomous Colleges of Education

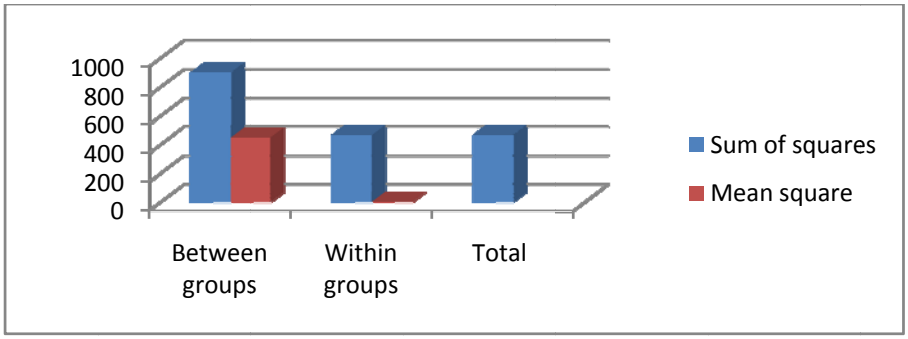
Online based multiple choices	Sum of squares	Mean square	Degree of freedom(df)	*f*	Level of significance
Between groups	900	450	2		Not
Within groups	467.300	2.640	177	1.70	significant at
Total	468.200		179		0.05 level

f value=(1.70), table value=3.04

Interpretation: The above table indicates the perceptions regarding online based multiple choices among student teachers of government, private and autonomous Colleges of Education between groups (sum. Squares=900,M.Sq.=450) and within groups (sum. Squares=467.300,M.Sq. =2.640), the obtained f value is 1.70 at df (2,177) is less than the critical value 3.04 at p< 0.05 level of significance.

Hence the null hypothesis is accepted which implies, there is no significance difference in the perceptions regarding online multiple choices among student teachers of government, private and autonomous Colleges of Education and research hypothesis is rejected.

The below is the graphical representation of between and within groups for the perceptions regarding online based multiple choice among student teachers of government, private and autonomous Colleges of Education.



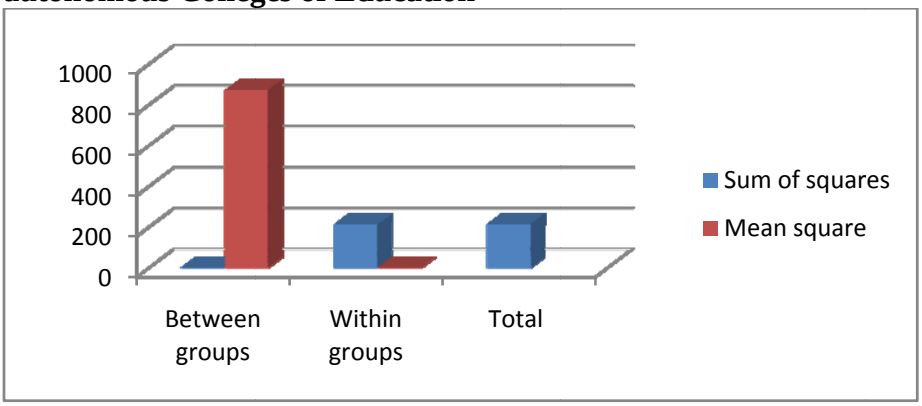
The below table represents the perceptions regarding online based open ended questions among student teachers of government, private and autonomous Colleges of Education.

Online based open ended questions	Sum of squares	Mean square	Degree of freedom(df)	*f*	Level of significance
Between groups	1.744	872	2		
Within groups	212.567	1.201	177	.726	Not significant at 0.05 level
Total	214.311		179		

f value=(.726), table value=3.04

Interpretation: The above table indicates the perceptions regarding online based open ended questions among student teachers of government, private and autonomous Colleges of Education between groups (*sum. Squares*=1.744, *M.Sq.* = 872) and within groups (*sum. Squares*=212.567, *M.Sq.* =1.201), the obtained *f* value is 1.70 at *df*(2,177) is less than the critical value *3.04 at p< 0.05 level of significance*. Hence the null hypothesis is accepted which implies, there is no significance difference in the use of open ended questions among student teachers of government, private and autonomous Colleges of Education and research hypothesis is rejected.

The below is the graphical representation of between and within groups for the perceptions regarding online based open ended questions among student teachers of government, private and autonomous Colleges of Education



Hypothesis-3

Research Hypotheses: There is a significant difference in the perceptions regarding online based technology and e-learning among student teachers of government, private and autonomous Colleges of Education.

Null hypotheses: There is no a significant difference in the use of online based technology and e-learning among student teachers of government, private and autonomous Colleges of Education.

The below table represent use of online based technology among student teachers of government, private and autonomous Colleges of Education.

Online based technology	Sum of squares	Mean square	Degree of freedom(df)	*f*	Level of significance
Between groups	2.878	1.493	2		
Within groups	193.100	1.091	177	1.319	Not
Total	195.978		179		significant at 0.05level

*f*value=(1.319), table value=3.04

Interpretation: The above table indicates the perceptions regarding online based technology among student teachers of government, private and autonomous Colleges of Education between groups (*sum. Squares*=2.878*, M.Sq.* = 1.493) and within groups (*sum. Squares*=193.100*, M.Sq.* =1.091), the obtained *f* value is 1.70 at *df*(2,177) is less than the critical value *3.04 at p< 0.05 level of significance*.

Hence the null hypothesis is accepted which implies, there is no significance difference in the perceptions regarding technology among student teachers of government, private and autonomous Colleges of Education and research hypothesis is rejected.

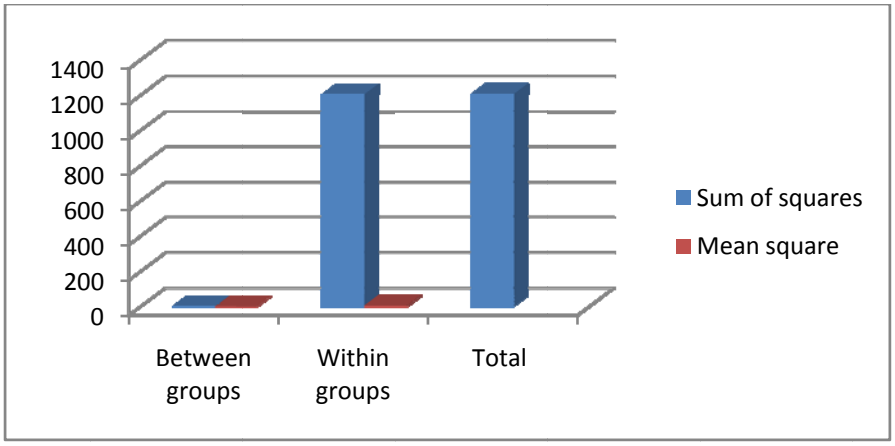
The below table represents the use of e-learning assessment among student teachers of government, private and autonomous Colleges of Education.

e –learning	Sum of squares	Mean square	Degree of freedom(df)	f	Level of significance
Between groups	2.544	1.272	2		
Within groups	1204.567	6.805	177	.187	Not
Total	1207.111		179		significant at 0.05level

*f*value=(.187), table value=3.04

Interpretation: The above table indicates the perceptions regarding e-learning among student teachers of government, private and autonomous Colleges of Education between groups (*sum. Squares*=2.544*, M.Sq.* = 1.272) and within groups (*sum. Squares*=1204.567*, M.Sq.* =6.805), the obtained *f* value is 1.70 at *df*(2,177) is less than the critical value *3.04 at p< 0.05 level of significance*. Hence the null hypothesis is accepted which implies, there is no significance difference in the use of e-learning among student teachers of government, private and autonomous Colleges of Education and research hypothesis is rejected.

Below is the graphical representation of between and within groups for the perceptions regarding e-learning among student teachers of government, private and autonomous Colleges of Education.



Hypothesis- 4

Research hypotheses: There is a significant difference in the perceptions regarding e-portfolio among student teachers of government, private and autonomous Colleges of Education.

Null hypotheses: There is no significant difference in the perceptions regarding e-portfolio among student teachers of government, private and autonomous Colleges of Education.

The below table represent use of e-portfolio among student teachers of government, private and autonomous Colleges of Education

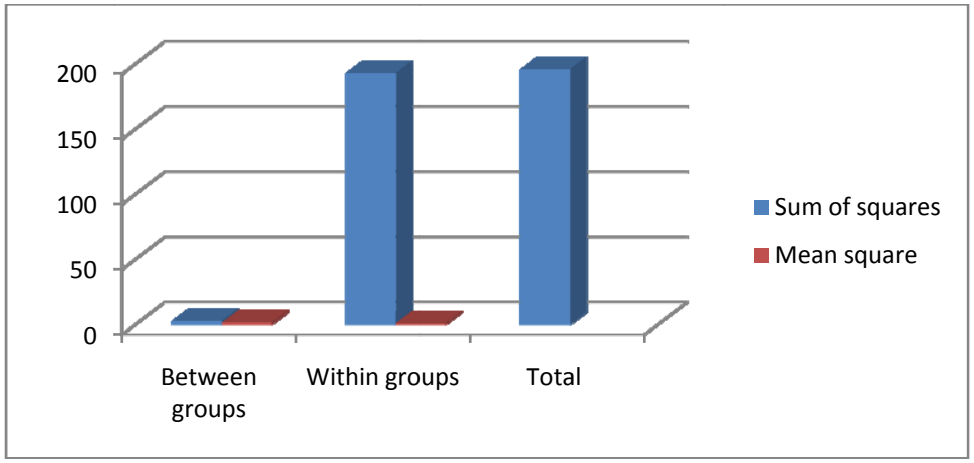
e –portfolio	Sum of squares	Mean square	Degree of freedom(df)	*f*	Level of significance
Between groups	10.811	5.406	2		
Within groups	454.167	2.566	177	2.107	Not significant at 0.05 level
Total	464.978		179		

F value (2.107), table value=3.04

Interpretation: The above table indicates the perceptions regarding e-portfolio among student teachers of government, private and autonomous Colleges of Education between groups (*sum. Squares*=10.811, *M.Sq.* = 5.406) and within groups (*sum. Squares*=454.167, *M.Sq.* =2.566), the obtained *f* value is 1.70 at *df*(2,177) is less than the critical value *3.04 at p< 0.05 level of significance*.

Hence the null hypothesis is accepted which implies, there is not significance difference in the perceptions regarding e-portfolio among student teachers of government, private and autonomous Colleges of Education and research hypothesis is rejected.

Below is the graphical representation of between and within groups for the perceptions regarding e-portfolio among student teachers of government, private and autonomous Colleges of Education



Conclusions:

In this study the differential hypotheses are verified by comparing each of the components scores of online assessment and evaluation by using *f*-test and by comparing the obtained value with the table value at given degree of freedom and level of confidence on which the research hypotheses is rejected or accepted. The current study has focused on enriching learning through online evaluation and assessment. The type of research conducted is "Descriptive survey" where the data is collected from a sample of 180 student teachers in Hyderabad city. The sample includes student teachers different teachers such as government, private and autonomous college of education, both male and female student teachers. The data collected is analyzed and interpreted statistically. One-way ANOVA is done on enriching learning through online evaluation and assessment, with 4 components. The level of significance in the use of online assignments and e-formative assessment online based multiple choice tests and online based open ended questions, online based technology, and e-learning, e-portfolio among student teachers of autonomous colleges of education was found out using the f-test. The data is analyzed and presented in the form of graphs.

Educational Implications for Policy Makers.

The purpose of this study is to support administrators and policy makers in becoming informed about online learning and its potential impact on potential impact on productivity. It provides foundation knowledge and a conceptual framework, drawing specifically on component wise analyses. Online assessment and evaluation improves broad accessing, engaging students in active learning, individualizing and differentiating instruction, to which the policy makers should implement online courses, practical exposure to virtual classrooms

Educational implications for principal of Colleges of Education

The principal of Colleges of Education should show respect for student's assumptions, regardless of the developmental stages they exhibit, create many opportunities for students to analyze others points of views for their evidentiary adequacy, provide immediate feedback and provide both cognitive and emotional support which helps the students in decision making, self-evaluating, the students should be encouraged to practice their reasoning skills, gain confidence and they should be exposed to online discussions, virtual classrooms which helps in improving their learning experiences.

Educational implications for teacher educators and student teachers.

The present study states that the teachers should get dedicated study space, reliable internet access, exposure to virtual classrooms, most importantly they should be encouraged and motivated to create an exciting way to educate students through various teaching techniques

Among all the above the learner must understand and believe in the "spirit" of using online assessment and evaluation strategies.

Since, the current study reveals that there is positive response regarding online evaluation and assessment strategies, but there is no significant difference in the use of online evaluation and assessment, for which the student teachers must develop knowledge and skill they need, to address the learning challenges. They should be exposed to ample opportunities to get well equipped with the online assessment and evaluation strategies. In addition to the above aspects the student teachers should be motivated to attain online assessment and evaluation strategies for their better teaching-learning process. The online environment offers some unique challenges for assessment, but also offers opportunities for positive ongoing assessment. Immediate feedback enables the students in enriching their learning process.

References:

1. Lawrence. J, Zollinger. W .S, (2015) volume 15(2), Enriching design education through online peer critique, the journal of effective teaching.
2. Qayyum M. Asim ; Smith, David , June(2015)volume 20 Information Research: An International Electronic Journal: Use of the Internet for open Web searches is common among university students in academic learning tasks.
3. Barak. M, Rafael.S, July (2004).volume 61, Issue 1, International journal of human-computer studies
4. R. Kearns L, (2012), volume8 (3), Student assessment in online learning: challenges and effective practices
5. C. Sahu, (2008),an evaluation of selected pedagogical attributes of online discussion boards
6. Donovan,J.,Mader and Shinsky. J., (2006)"Constructive student feedback: Online vs. traditional course evaluations."Journal of Interactive Online Learning.
7. Bridge, Pete; Apple yard, Rob, British Journal of Educational Technology, A Comparison of Electronic and Paper-Based Assignment Submission and Feedback
8. Currie, Michael; Chiramanee, Thanyapa, Language Testing, The Effect of the Multiple-Choice Item Format on the Measurement of Knowledge of Language Structure

9. Gupta, Adit; Fisher, Darrell, Learning Environments Research, Technology-Supported Learning Environments in Science Classrooms in India., The adoption of technology has created a major impact in the field of education at all levels.
10. Pasupathi, Madhumathi Issues in Teachers' Professional Development, Analyzing the Effect of Technology-Based Intervention in Language Laboratory to Improve Listening Skills of First Year Engineering Students.
11. Haave, Neil, Journal of College Biology Teaching, E-portfolios have the potential to transform students' learning experiences retrieved from http://files.eric.ed.gov/fulltext/EJ1062122.pdf
12. Research in Higher Education Journal Volume 26 – October, 2014 Engaging students in online, courses Pearl Jacobs Sacred Heart University Retrieved from https://www.brown.edu/about/administration/sheridan-center/teaching-learning/course-design/learning-technology/online-assignments
13. https://facultyinnovate.utexas.edu/teaching/check-learning/question-types/multiple-choice

A Study on the Attitude of Teacher Trainees towards the two year B.Ed programme

- Dr.K.Veena Latha (Guide)
-Mrs. A.Meenakshi (Research Scholar)

Teacher education is an integral part of education. It is the spotlight of the 21st century. The quality of education depends on the quality of education of teachers. The success of education depends on quality of teacher which creates excellence in all walks of life. The qualitative aspects of education depend entirely on the character and personality of the teachers. Thus the role of the teachers is very important in making the nation. In order to develop the quality in various dimensions of teacher, teacher training is very much necessary. Particularly, Secondary level Teachers Training (In service and Pre-service) play a vital role in India. The Bachelor of Education (B.Ed.) programme prepares quality teachers who in turn improve the quality of school education and also enhance the learning level of children. In this direction, many efforts were made by implementing the various recommendations of policy documents as suggested by various Commissions and Committees in India.

The teacher's roles and responsibilities have found extension outside the classroom. The implementation of educational policies, transaction of curricula and spreading awareness are the main areas which keep the teacher in the forefront. Changing times have added a new dimension to this profession, which requires specified competencies and right attitude.

Significance of the study:

Previously the B.Ed course was of one year duration. The student teacher would complete theory and practicals in one academic year. But recently, from 2015 onwards NCTE has changed the duration of B.Ed course to two years .Because the duration has been increased, there has been a drop in admission rate. Many seats are vacant and many colleges are on the verge of closure. Students have a feeling that they can do a P.G programme for two years instead of doing B.Ed programme for two years. Students feel that even after doing B.Ed. for two years there is no proper placement for them and neither there is job satisfaction. So, since this is a burning issue today, the topic was found to be apt for the study.

Objectives of the study

1. To determine the acquisition of knowledge of 2 years B.Ed. programme
2. To determine the difference in the attitude of male and female teacher trainees towards 2 years B.Ed programme.
3. To determine the difference in the attitude of teacher trainees of autonomous and non autonomous B.Ed colleges towards 2years B.Ed programme.

Hypotheses

- There is a significance difference in the attitude of teacher trainees towards the 2 years B.Ed programme.
- There is a significance difference in the attitude of male and female teacher trainees towards the two years B.Ed programme.
- There is a significant difference in the attitude of teacher trainees of autonomous and non autonomous B.Ed colleges towards two years B.Ed programme.

Variables

A variable is a measurable characteristic that varies. In survey research, an independent variable is thought to influence, or at least be correlated with, another variable which is called the dependent variable

The independent variables of the present study are:

1. Implementation of B.E.d programme
2. Types of institutions- autonomous and non autonomous
3. Gender

The dependent variables of the present study are:

1. Attitude of teacher trainees

Research methodology

A descriptive research methodology was used for this study. The study was conducted through survey method.

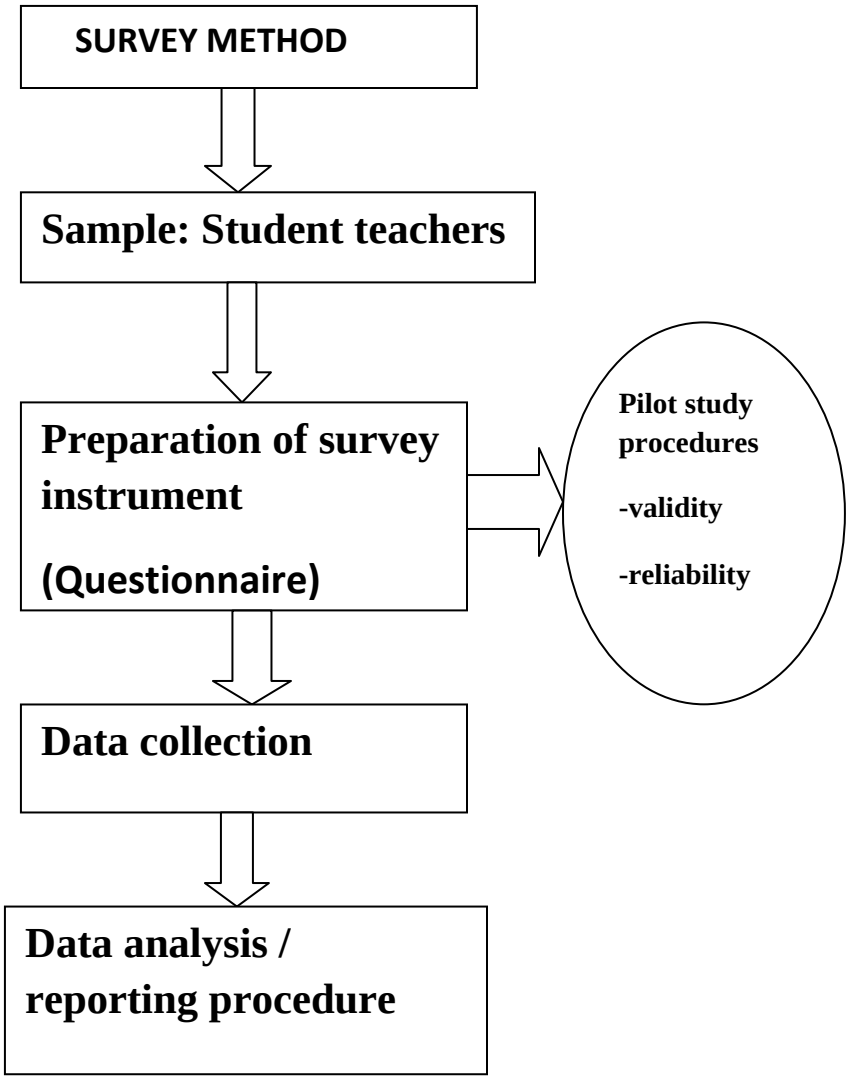
Sample

For this study the methodology of sampling adopted was random sampling. The sample were chosen from the following Colleges of Education:
Siddanthi College of Education (Non-Autonomous)

St. Ann's College of Education (Autonomous)

Andhra Mahila Sabha College of Education (Autonomous)

Research design



Research tool: The tool employed in the present study includes a questionnaire consisting of 30 questions to be responded on five point rating scale. The present research questionnaire is framed on the following components:

1. Component I: field exposure
2. Component II: internship
3. Component III: teacher behaviour.
4.

The items in the questionnaire were developed as a result of discussion with research supervisor, and review of the literature. The questionnaire consisted of 25 positive items and 5 negative items. All the questions were to be responded in five point rating scale.

Scoring

A five –point scale was used to measure the scores with a maximum score of five and minimum score of one. The responses were graded from 1to5 for strongly disagree to strongly agree respectively. They were asked to select the right one according to their own choice without bias. The positive questions of the scale are given scoring order 1,2,3,4,5 and negative scoring as5,4,3,21.

Data Analysis:

The analysis of data was carried out based on the guidelines provided by following the hypothesis structured for the study. The nature of each group of sample is believed to be expressed by mean value and standard deviation. Hence mean value will represent the nature of particular group. The level of difference between the groups is to be measured by t-value.

Hypotheses

Research hypothesis and null hypothesis formulated in the present investigation and their statistical analysis are as follows:

Hypothesis I

Research hypothesis:

There is a significant difference in the attitude of teacher trainees towards two years B.Ed. programme

Null hypothesis:

There is no significant difference in the attitude of teacher trainees towards two years B.Ed. programme.

Table1: Table showing the mean score, standard deviation and t-value of the attitude of teacher trainees towards 2 years B.Ed programme

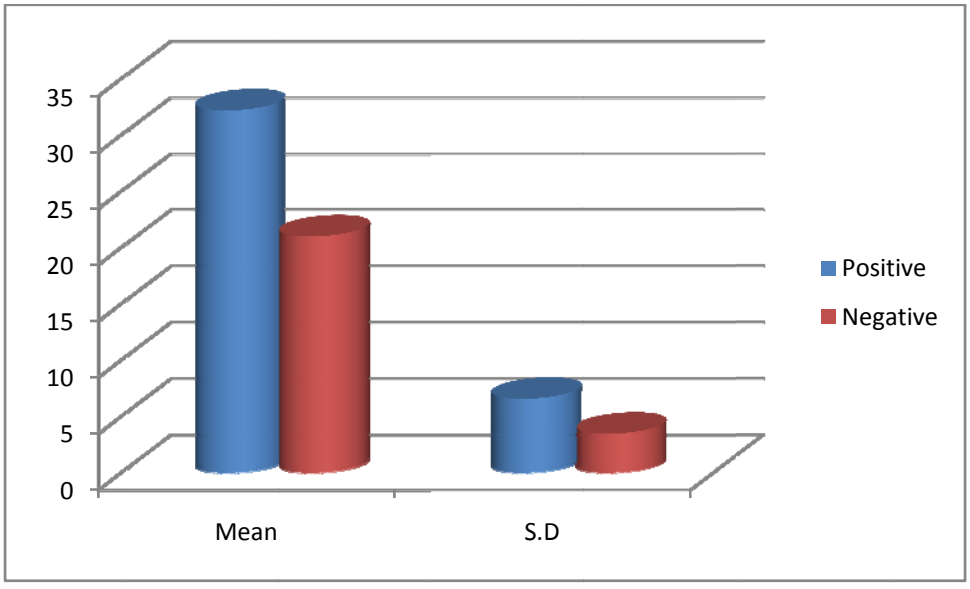
	Sample			
Description	size	mean (m)	standard deviation	t-value
Teacher trainees (positive attitude)	60	32.21	6.57	15.27
Teacher trainees (negative attitude)	40	21.00	3.46	

Df=98 t-tablevalue1.98
Significant level is 0.05
Degree of freedom (df) = N1+N2-2
60 + 40 – 2 = 98
At 98 degree of freedom (df), table value is 1.98 at 0.05 level of significance.
The calculated t value is 15.27 more than the table value 1.98, the research hypothesis is accepted and null hypothesis is rejected.

Inference:
The calculated mean of positive attitude of teacher trainees is 32.2 which is more than the negative attitude of teacher trainees i.e 21.0. The calculated standard deviation of positive attitude of teacher trainees is 6.57, which is more than the negative attitude of teacher trainees that is 3.46. The obtained t-value is 15.27 which is more than the table value at 0.05 level of significance. So, research hypothesis is accepted and null hypothesis is rejected.

So we can conclude that there is significant difference attitude of teacher trainees towards the two year B.Ed programme.

Graph1: Graph depicting the mean score, standard deviation and t-value of the attitude of teacher trainees towards 2 years B.Ed programme



Hypothesis II

Research hypothesis:

There is a significant difference in the attitude of male and female teacher trainees towards the two year B.Ed programme.

Null hypothesis:

There is no significant difference in the attitude of male and female trainees towards the two year B.Ed programme

Table2: Table showing the mean score, standard deviation and t-value of the attitude of male and female teacher trainees towards the two year B.Ed programme.

Description	Sample size	mean(m)	standard deviation	t-value
Teacher trainees (Female)	75	121.5	12.4	1.2
Teacher trainees (Male)	25	120.3	15.6	

Df=98 t-table value1.98
Significant level is 0.05
Degree of freedom (df) = N1+N2-2

75 + 25 – 2 = 98

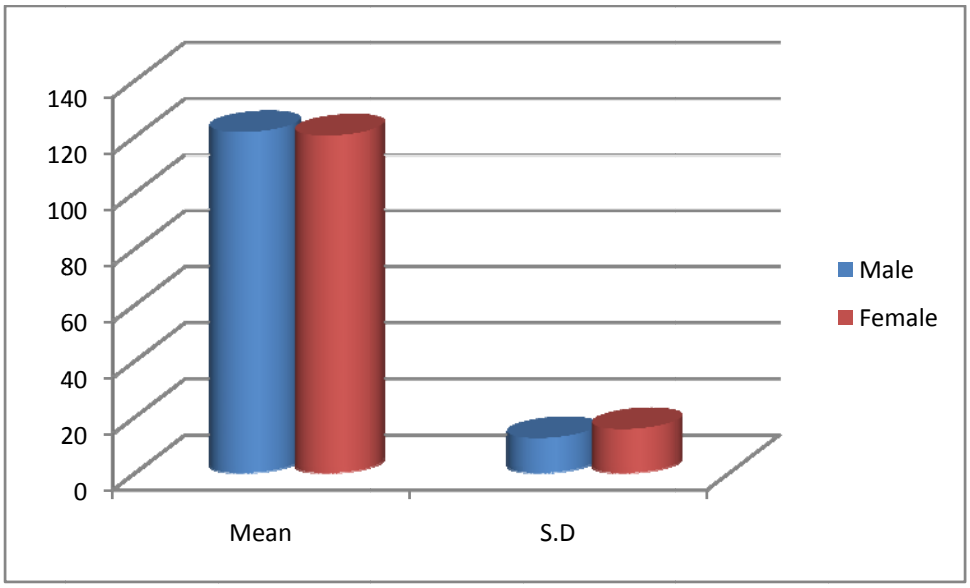
At 98 degree of freedom (df), table value is 1.98 at 0.05 level of significance.
The calculated t value is 1.2 less than the table value 1.98, the research hypothesis rejected and null hypothesis is accepted

Inference:

The calculated mean of female teacher trainees is 121.5 which is more than male teacher trainees 120.3. The calculated standard deviation of female teacher trainees is 12.4, which is less than the male teacher trainees that is 15.6. The obtained t-value is 1.2which is less than the table value at 0.05 level of significance. So, research hypothesis is rejected and null hypothesis is accepted.

So we can conclude that there is no significant difference in the attitude of male and female trainees towards the two year B.Ed programme.

Graph 2: Graph showing the mean score, standard deviation and t-value of the attitude of male and female teacher trainees towards 2 years B.Ed programme



Hypothesis III

Research hypothesis:

There is a significant difference in the attitude of teacher trainees of autonomous and non autonomous B.Ed colleges towards the two year B.Ed programme.

Null hypothesis:

There is a no significant difference in the attitude of teacher trainees of autonomous and non autonomous B.Ed colleges towards the two year B.Ed programme.

Table3: Table showing the mean score, standard deviation and t-value of the attitude of autonomous and non autonomous college teacher trainees towards the two year B.Ed programme.

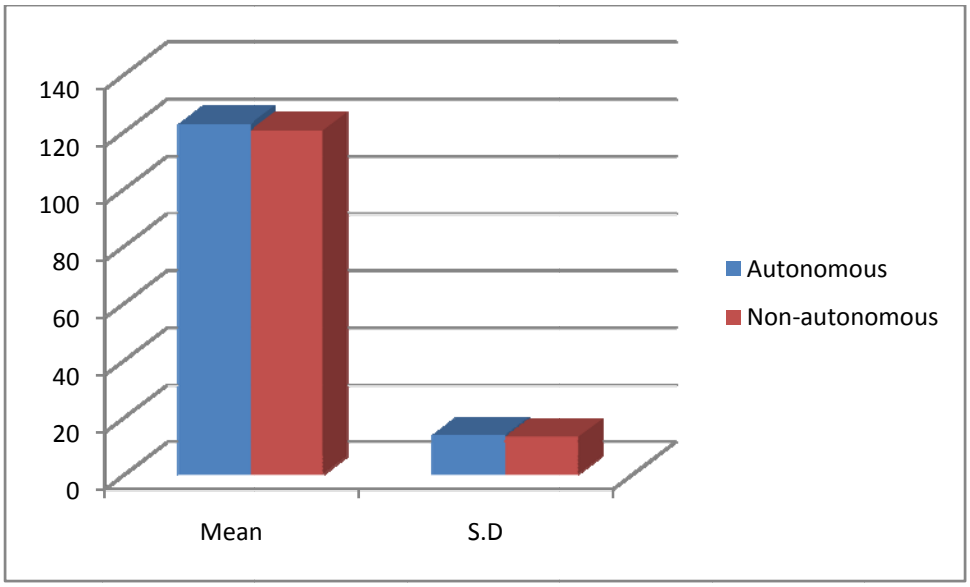
Description	Sample size	mean (m)	standard deviation	t-value
Teacher trainees (Autonomous college)	50	122.5	13.7	1.38
Teacher trainees (Non autonomous)	50	120.3	13.2	

Df=98 t-table value1.98
Significant level is 0.05
Degree of freedom (df) = N1+N2-2
50 + 50 – 2 = 98
At 98 degree of freedom (df), table value is 1.98 at 0.05 level of significance.
The calculated t value is 1.38 less than the table value 1.98, the research hypothesis rejected and null hypothesis is accepted.

Inference:
The calculated mean of autonomous college teacher trainees is 122.5 which is more than non autonomous college teacher trainees is 120.3. The calculated standard deviation of autonomous college teacher trainees is 13.76, which is more than the non autonomous teacher trainees that is 13.2. The obtained t-value is 1.38 which is less than the table value at 0.05 level of significance. So, research hypothesis is rejected and null hypothesis is accepted.

So we can conclude that there is no significant difference in the attitude of teacher trainees of autonomous and non autonomous B.Ed programme. There is similar thinking of implementation of 2 years B.Ed course in autonomous and non autonomous college.

Graph3: Graph showing the mean score, standard deviation and t-value of the attitude of autonomous and non autonomous college teacher trainees towards the two year B.Ed programme.



Findings of the study

1. There is a significance difference in the attitude of teacher trainees towards two years B.Ed programme.
2. There is no significant difference in the attitude of male and female trainees towards the two year B.Ed programme.
3. There is a no significant difference in the attitude of teacher trainees of autonomous and non autonomous colleges towards the two year B.Ed programme.

Limitations of the study

1. In the present study only attitude of teacher trainees with regard to internship, field exposure and teacher behaviour were considered likewise other components like implementation, assessment strategies and curriculum can also be explored in same manner.
2. The study has been limited to 4 colleges only.
3. In the present study sample taken was rather small. To make broader generalization the research needs to be carried out on large sample.

4. The present study is limited to Hyderabad district only.

Implications of the study

- It helps us to find out the limitations in the implementation of the two year B.Ed programme
- It gives us provision for effective feedback.

Conclusion:

The quality of teacher education is closely related with the duration of teacher preparation. A reasonable time duration for teacher preparation that provides enough opportunity for rigorous theoretical study, self-study, cooperative learning, reflection, pedagogical skill development, involvement with the children, the school, the classroom, and the community is very much essential for a teacher trainee.

While the new curriculum is appreciable but there are few teachers who will be able to translate the very complex and vaguely stated outcomes of the curriculum into appropriate learning programmes. The range of practical demands and challenges placed on teachers and colleges involved is very important in making this two year B.Ed course successful.

Bibliography:

1. Jayakumar.R"Pros and Cons: Two years B.Ed., programme in India". International Journal of Current Research and Modern Education (IJCRME) Volume I, Issue I, 2016

2. Marco Rieckmann "Future-oriented higher education: Which key competencies should be fostered through university teaching and learning?" Futures Volume 44, Issue 2, March 2012, Pages 127–135

3. Pramodini D V "Evaluation of importance for Research in Education". International Journal of Social Science & Interdisciplinary Research. Vol.1 Issue 9, September 2012

4. Richard M "How to improve Teaching Quality". Quality Management Journal, 6(2), 9-21 (1999)

5. Sushma.R," Attitude of Teacher Educators towards two-year B.Ed Programme". An International Peer-Reviewed and Referred, Scholarly Research Journal for Humanity Science and English Language (2014).

A Study on Differentiated Instruction of In-service and Pre-service Teachers

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Abstract

Contemporary student populations are becoming increasingly diverse. Learning within the classroom is influenced by a student's gender, culture, experiences, aptitudes, interests and in particular teaching learning approaches. Most children accept that in a classroom they are not alike, that while some possess strengths in sport, others may be academically strong. While it is accepted that the common basis for all of them is a need for acceptance, care and respect.

But as the class size is showing an exponential growth in the 21st century, teachers face the overwhelming task of teaching all levels of students in a single class. Teachers must stimulate and engage intellectually gifted students, while simultaneously scaffolding curriculum to support lower level learners. This fine balance is what separates the best teachers from the flock.

Through differentiated instruction, teachers provide opportunities in the class itself according to the interests and needs of the learners irrespective of their limitations. It is a revolution in the world of education. The issue of meeting the individual needs of the learner has its root in the desire to reach all the students in the class equally and not to leave anybody "uninspired".

The current study is focused on studying the Differentiated Instruction of Pre-service and In-service teachers. A "Descriptive Survey" type of research design was followed where the data is collected from a sample of 50 in- service teachers and 50 pre- service teacher trainees from Nalgonda District and Hyderabad City. The tool employed in the present study is a questionnaire consisting of 50 statements to be responded on a five point scale. The data collected is analyzed and interpreted statistically. The statistical techniques used in the study are Mean, SD and t-test computed to find a difference between the In-service and Pre-service teachers with regard to differentiated instruction.

Key terms used: Differentiated instruction, Perception, content Process, Product, Assessment, In-service and Pre-service teachers.

Introduction:

Current educational trends across the globe reflect significant changes in student populations. The inclusion of students from different backgrounds, students with disabilities and students on remedial as well as enrichment programs compel educators to relook at their teaching and instructional practices. The homogeneity of yesteryear has been replaced by widespread diversity, however in many contexts, teachers do not appear to have adjusted their methods to keep abreast of these trends. With contemporary classrooms becoming increasingly diverse, educational authorities, teachers and school administrators are looking to teaching and learning strategies that cater for a variety of learning profiles. A Paradigm that is gaining ground in many educational circles is differentiated instruction. This model proposes a rethinking of the structure, management and content of the classroom. Differentiated instructional strategies are used by teachers to organize and customize instructions to provide the very best learning opportunities by selecting organizing and pacing instructions to reach and teach each learner catering to each student's uniqueness.

In a differentiated classroom, all students feel safe and secure enough to take risks and express their understanding or lack of understanding. In such class rooms the emphasis is on knowledge base and experience rather than IQ and ability. Each student is respected. Learners know that learning is a process and everyone learns differently. Learning includes weeding out what students know with effective pre-assessment determining students' needs. It establishes a different mind-set of being able to admit mistakes, accept lack of understanding, and celebrate successes and growth in an individual's knowledge base. Each moment of successful improvement makes a positive change in the learner which lasts for a lifetime.

The concept of differentiated instruction is based on the need for general education teachers to differentiate instruction to meet the needs of diverse learners in the class. Differentiated instruction may be conceptualized as teacher's response to the diverse learning needs of a student (Tomlinson, 1999). Differentiated instruction is proactive. The teacher assumes that students have differing needs and therefore plans a variety of ways for learners to express learning .Differentiated instruction is more qualitative then quantitative. It is a blend of whole-class, group, and individual instruction and is also rooted in assessment. Differentiated instruction provides multiple approaches to content, process and product.(Alian &Tomlinson, 2008).

- Content(what is learned)
- Process(how the content is taught)
- Product(how the learning is observed and presented)
- Assessment (how the learning is evaluated)

A teacher can differentiate content. It consists of facts, concepts, generalizations or principles, attitudes, and skills related to the subject, as well as materials that represent those elements. Content includes both what the teacher plans for students to learn and how the student gains access to the desired knowledge, understanding, and skills. The learning content involves what students are to master and what we want the students to accomplish after instruction (Tomlinson, 1999). The teacher may differentiate the content by designing activities for groups of students that cover different areas of Bloom's Taxonomy.

A teacher can differentiate process which is how the learner comes to make sense of, understand, and "own" the key facts, concepts, generalizations, and skills of the subject. A teacher can differentiate an activity or process by, for example, providing varied options at differing levels of difficulty or based on differing student interests. The learning process involves how the student interacts with the content, and those learning interactions will in part be determined by the various learning preference of the students.

A teacher can also differentiate products. We use the term *products* to refer to the items a student can use to demonstrate what he or she has come to know, understand, and be able to do as the result of an extended period of study. A product can be, for example, a portfolio of student work; an exhibition of solutions to real-world problems that draw on knowledge, understanding, and skill achieved over the course of a semester; an end-of-unit project; or a complex and challenging paper-and-pencil test. A good product causes students to rethink what they have learned, apply what they can do, extend their understanding and skill, and become involved in both critical and creative thinking.

Finally, the teacher can differentiate the assessment which will allow the teacher to determine the students who have mastered the material and those who may need more time and continued instruction (Tomlinson, 1999).

Objectives of the Study:

1. To study the perception of differentiated instruction of teachers.
2. To study the differentiated instruction of teachers with regard to the content used.
3. To study the differentiated instruction of teachers with regard to the process used.
4. To study the differentiated instruction of teachers with regard to the product.
5. To study the differentiated instruction of teachers with regard to the assessment.
6. To study the obstacles faced by teachers regarding the implementation of differentiated instruction.

Hypotheses of the Study

1. There is a significant difference in the perception of differentiated instruction of in-service and pre-service teachers.
2. There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the content used.
3. There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the process used.
4. There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the product.
5. There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the assessment.
6. There is a significant difference in the obstacles faced by in-service and pre-service teachers regarding the implementation of differentiated instruction.

Variables of the Study

Dependent variable: Differentiated Instruction and the related components including Perception of differentiated instruction, Content, Process, Product, Assessment and Obstacles faced with regard to the implementation of Differentiated instruction are the Dependent variables of the present study.

Independent variable: Pre service and In-service teacher training are the Independent variables of the study.

Research Design

The study followed a Descriptive Survey design. The differentiated instruction of In-service and Pre-service teachers including the perception, content, process, product, assessment and obstacles faced by teachers in the implementation of Differentiated Instruction formed the focus of the Descriptive Survey. It involves collecting data in order to test the hypotheses. Quantitative statistical methods are used in describing, analyzing, interpreting the data collected from the sample.

Sample

The present study used Random Sampling technique for the selection of sample. The researcher through random sampling out of many schools and colleges in Nalgonda and Hyderabad Districts selected 6 schools and 5 Teacher training colleges. The sample included 50 high school teachers from schools and 50 trainee teachers from Teacher training colleges.

Tool Used

The specific nature of the study was to focus on the differentiated instruction of Pre service and in service teachers. Six components of differentiated instruction was studied .The study focused on the difference in the perception, content, process, product, assessment and obstacles between In-service and Pre-service teachers .A self prepared Questionnaire was used to collect data for the present study.

The questionnaire with 50 statements to be responded on a five point scale (strongly disagree, disagree, not sure, strongly agree and agree) respectively was used for the present study. Out of the total 50 statements, there are 43 positive statements and 7 negative statements. The reverse scoring order is followed for the negative statements. The positive statements of the tool are given in the scoring order as 5,4,3,2.1 and are reversed for the negative statements. After the collection of data from the different schools and colleges the questionnaire were scored according to the scoring key.

Validity and Reliability

The test items were constructed with due care with the consultation of experts in the area. And content validity was established. The reliability of each item was established by using co efficient of correlation as a statistic measure .The item analysis following the pilot study indicated certain items with high mean and low mean scores. The coefficient of correlation was computed for the given responses and those falling within the range 0.4 to 0.8 were considered to establish the reliability of each item in the questionnaire. Among the 55 questions, 5 questions were deleted. Thus the final tool consisted of 50 questions based on 6 components.

Statistical Techniques Applied to Analyze the Data

In the present study, the pre service and in service teacher training is the independent variable and the differentiated instruction is the dependent variable. The various components of Differentiated instruction include perception, content, process, product, assessment and obstacles faced. Scores of each response was recorded in an excel sheet. Sum of each component was also computed. The statistical techniques employed in the present study are Mean, S.D and t–test.

Analysis and Interpretation

Hypothesis -1

H1: There is a significant difference in the perception of differentiated instruction of in-service and pre-service teachers.

H0: There is no significant difference in the perception of differentiated instruction of in-service and pre-service teachers.

Table 1 Differences in Mean, Standard Deviation and t-Value of in-service and pre-service teachers regarding the perception of differentiated instruction.

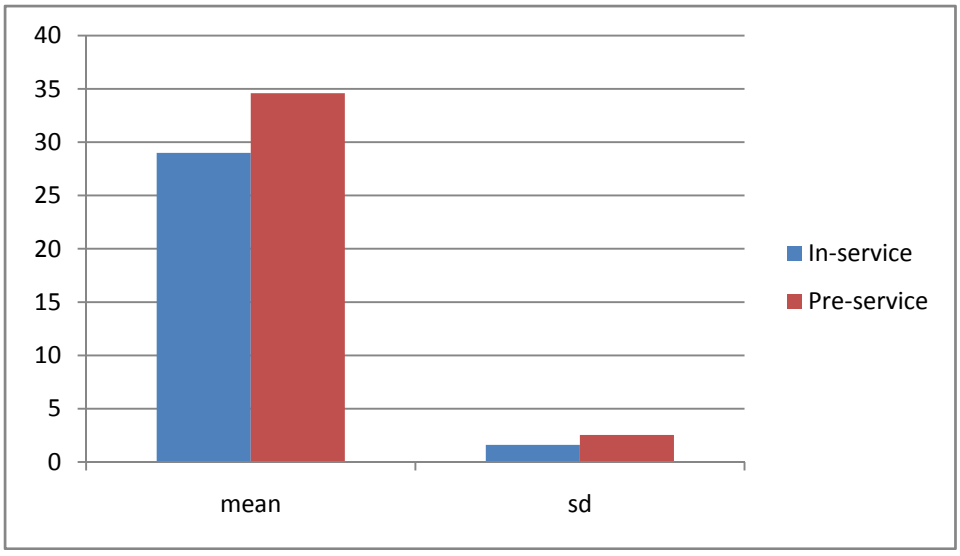
Description	Size(n)	Mean(m)	SD	t-value	Significance level
In-service	50	29.0	1.6	13.0	Significant at 0.05 level
Pre-service	50	34.6	2.5		

df =98, *t* table value = 1.98

Interpretation:

From Table.1 The Mean value(*M*= 29.0) obtained for the Perception of In-service Teachers regarding Differentiated instruction is less than the mean value (*M*=34.6) of Pre-service teachers. The standard deviation (*SD*=1.6) of In-service Teachers is less as compared to Pre-service Teachers standard deviation (*SD*=2.5). The obtained t-value (*df*=98) is 13.0 which is greater than the table value *t* (98) =1.98; $p<0.05$. Therefore the Research Hypothesis is accepted and Null Hypothesis is rejected. It clearly indicates that there is a significant difference in the perception of differentiated instruction between In-service and pre-service teachers.

Graph.1 Differences in Mean and standard deviation of In-service and pre-service teachers regarding the perception of differentiated instruction.



Hypothesis-2

H1:There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the content used.

H0:There is no significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the content used.

Table 2

Differences in Mean, Standard Deviation and t-Value of in-service and pre-service teachers regarding the content of differentiated instruction.

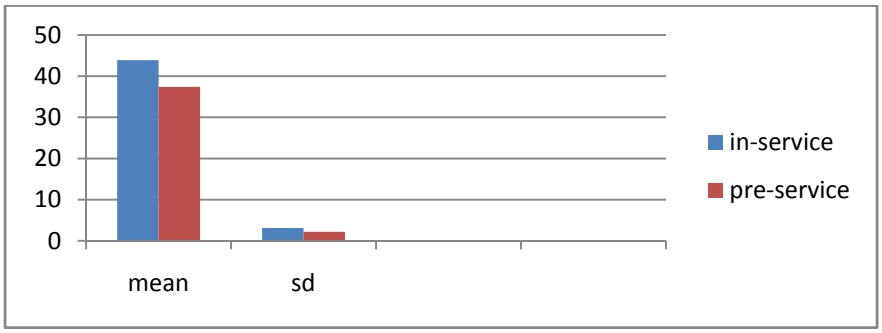
Description	Size(n)	Mean (m)	SD	t-value	Significance level
In-service	50	43.9	3.10	12.3	Significant at 0.05 level
Pre-service	50	37.4	2.18		

df =98, t table value= 1.98

Interpretation

From Table.2 The Mean value (*M*= 43.9) obtained for the Content used in In-service Teachers regarding Differentiated instruction is greater than the mean value *(M*=37.4) of Pre-service teachers. The content of In-service Teachers standard deviation (*SD* =3.10) is greater than standard deviation (*SD*=2.18)for pre-service Teachers .The obtained t-value (*df* =98) is 12.3 which is greater than the table value *t* (98) =1.98; *p*<0.05. Therefore the Research Hypothesis is accepted and Null Hypothesis is rejected. It clearly indicates that there is a significant difference in the Differentiated instruction between In-service and Pre-service teachers regarding content used.

Graph.2 Differentiated instruction of In-service and Pre-service Teachers regarding the Content used.



Hypothesis -3

H1:There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the process used.

H0:There is no significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the process used.

Table.3 Differences in Mean, Standard Deviation and t-Value of in-service and pre-service teachers regarding the process of differentiated instruction.

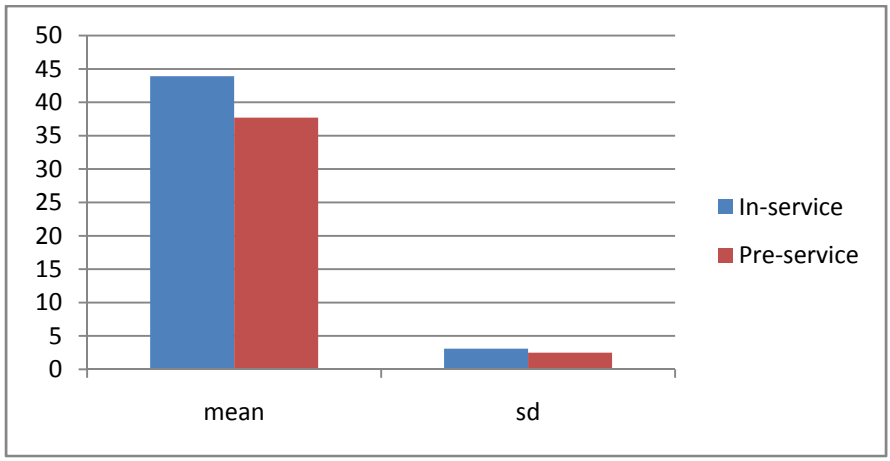
Description	Size(n)	Mean(m)	SD	t-value	Significance level
In-service	50	43.9	3.10	11.03	Significant at 0.05 level
Pre-service	50	37.7	2.49		

df=98, *t* table value=1.98

Interpretation

From Table.3 The Mean value (*M*=43.9) obtained for the process In-service Teachers regarding Differentiated instruction is greater than the mean value (*M*=37.7) of Pre-service teachers. The process of In-service Teachers standard deviation (*SD*=3.10) is greater than the standard deviation (SD=2.49) of Pre-service Teachers. The obtained t-value (*df*=98) is 11.03 which is greater than the table value *t* (98) =1.98; p<0.05. Therefore the Research Hypothesis is accepted and Null Hypothesis is rejected. It clearly indicates that there is a significant difference in the Differentiated instruction between In-service and Pre-service teachers regarding process.

Graph.3.Differences in Mean and Standard deviation of In-service and Pre-service teachers regarding the process of Differentiated instruction.



Hypothesis-4

H1:There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the product.
H0:There is no significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the product.

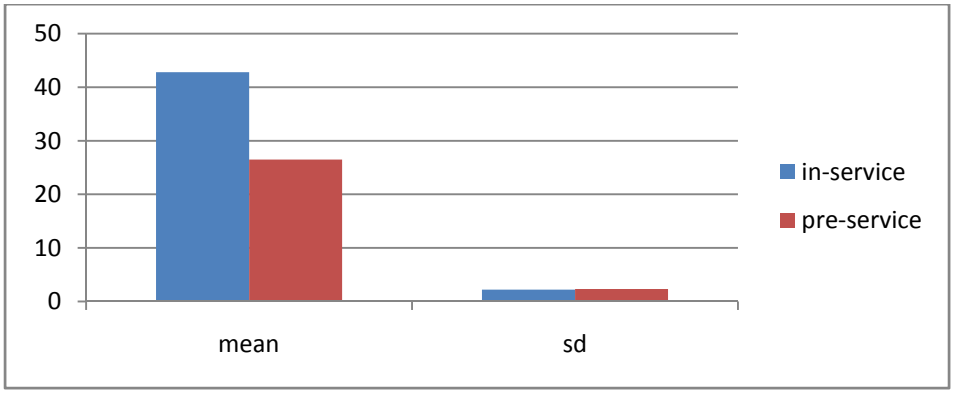
Table 4. Differences in Mean, Standard Deviation and t-Value of In-service and Pre-service teachers regarding the product of differentiated instruction.

Description	Size(n)	Mean (m)	SD	t-value	Significance level
In-service	50	42.80	2.20	35.89	Significant at 0.05 level
Pre-service	50	26.48	2.34		
					df=98, *t* table value=1.98

Interpretation

From Table 4 The Mean value (*M*=42.80) obtained for the product of In-service Teachers regarding Differentiated instruction is greater than the mean value (*M*=26.48) of Pre-service teachers. The standard deviation (*SD*=2.20) of In-service teachers is greater than as compared to Pre-service Teachers standard deviation (*SD*=2.34). The obtained t-value (df =98) is 35.89 which is greater than the table value *t* (98) =1.98; p<0.05. Therefore the Research Hypothesis is accepted and Null Hypothesis is rejected. It clearly indicates that there is a significant difference in the product of Differentiated instruction between In-service and Pre-service teachers.

Graph.4
Differences in Mean and standard deviation of In-service and Pre-service teachers regarding the product of Differentiated instruction.



Hypothesis-5

H1:There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the assessment.

H0:There is no significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the assessment.

Table 5 Differences in Mean, Standard Deviation and t – Value of In-service and Pre-service teachers regarding the product of differentiated instruction.

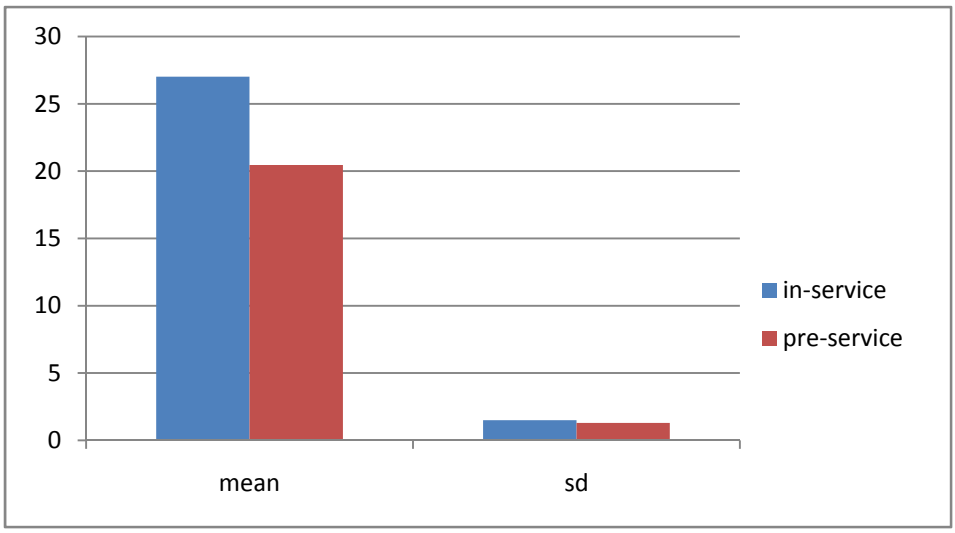
Description	Size(n)	Mean (m)	SD	t-value	Significant level
In-service	50	27.02	1.5	23.22	Significant at 0.05 level
Pre-service	50	20.46			

df=9.8, *t* table value=1.98

Interpretation

From Table 5 The Mean value (*M*=27.02) obtained for the assessment of In-service Teachers regarding Differentiated instruction is greater than the mean value (*M*=20.46) of Pre-service teachers. The standard deviation (*SD* =1.5) of In-service teachers is greater than as compared to Pre-service Teachers (*SD*=1.3). The obtained t-value (*df*=98) is 23.22 which is greater than the table value *t* (98) =1.98; $p<0.05$. Therefore the Research Hypothesis is accepted and Null Hypothesis is rejected. It clearly indicates that there is a significant difference in the assessment of Differentiated instruction between In-service and Pre-service teachers.

Graph 5 Differences in Mean and Standard Deviation of In-service and Pre-service teachers regarding the assessment of Differentiated instruction



Hypothesis-6

H1: There is a significant difference in the obstacles faced by in-service and pre-service teachers regarding the implementation of differentiated instruction.

H0: There is no significant difference in the obstacles faced by in-service and pre-service teachers regarding the implementation of differentiated instruction.

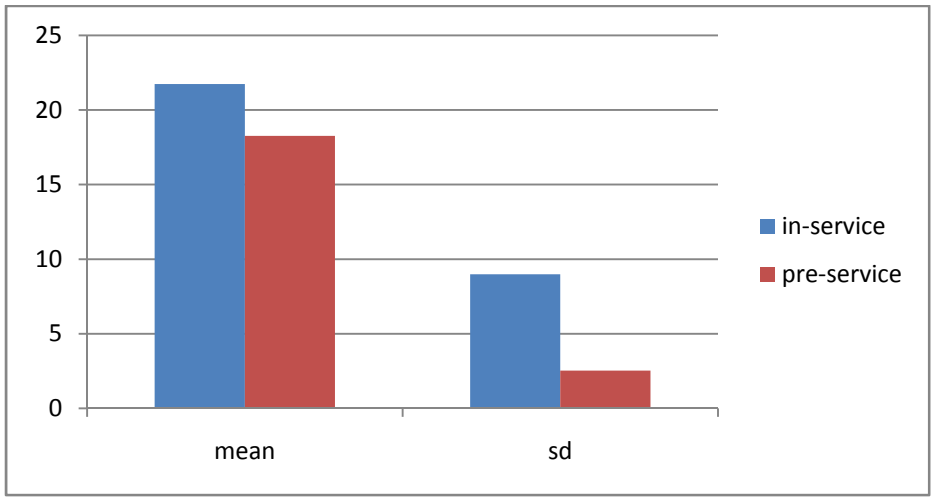
Table.6 Differences in Mean, Standard Deviation and t-Value of In-service and Pre-service Teachers of obstacles regarding the differentiated instruction.

Description	Size(n)	Mean (m)	SD	t-value	Significance level
In-service	50	21.74	8.99	9.13	Significant at 0.05 level
Pre-service	50	18.26	2.53		

df=9.8, *t* table value=1.98

From Table 4.2.6 The Mean value (*M*=21.74) obtained for the obstacles of In-service Teachers regarding Differentiated instruction is greater than the mean value (*M*=18.26) of Pre-service teachers. The standard deviation of In-service Teachers (*SD*=8.99) shows a greater difference as compared to Pre-service Teachers (*SD*=2.53). The obtained t-value *(df*=98) is 9.13 which is greater than the table value *t* (98) =1.98; p<0.05. Therefore the Research Hypothesis is accepted and Null Hypothesis is rejected. It clearly indicates that there is a significant difference in the obstacles of Differentiated instruction between In-service and Pre-service teachers

Graph 6.Differences in Mean and standard deviation of In-service pre-service teachers regarding the obstacles of Differentiated instruction.



Results and Discussions

1. There is a significant difference in the perception of differentiated instruction of in-service and pre-service teachers. In the present study, the Pre-service teachers are found to have a better perception than In-service teachers regarding Differentiated Instruction because they are exposed to the concept, both in theory as well as practice. Hence, the Pre-service teachers of 21st century are exposed to the concept of Differentiated Instruction which is practiced during the Internship practice.

2. There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the content used. The in-service teachers use different content in teaching and also give much more importance to students in taking initiatives, in adapting the content according to the need, interest and the learning profile of the learner than the pre-service teachers. Content includes both what the teacher plans for students to learn and how the student gains access to the desired knowledge, understanding, and skills. In many instances in a differentiated classroom, essential facts, material to be understood, and skills remain constant for all learners. .

3. There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the process used. The in-service teachers use different process to engage students and helped them in participating in many classroom activities than the pre-service teachers. An in-service teacher can differentiate an activity or process by providing varied options at different levels of difficulty or based on students' interests.

4. There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the product. The in-service teachers allow students to rethink what they have learned, apply what they can do, extend their understanding and skill, and become involved in both critical and creative thinking than the pre-service teachers.

5. There is a significant difference in the differentiated instruction of in-service and pre-service teachers with regard to the assessment. In-service teachers use a wide variety of methods and tools than the pre-service teachers to assess students.

6. There is a significant difference in the obstacles faced by in-service and pre-service teachers regarding the implementation of differentiated instruction. Both In-service teachers and Pre-service teachers faced obstacles while implementing Differentiated Instruction but In-service teachers are more capable in overcoming the obstacles than the Pre-service teachers.

Educational Implications

Differentiated instruction, although somewhat still developing in educational settings, has received significant recognition. It provides teachers with both theory and practice to appropriately challenge the broad scope of students in classrooms today. Although educators are continually challenged by the ever-changing classroom profile of students, resources, reforms, and practices, the relevant research base of the new concept of Differentiated instruction should grow.

It seems the teacher preparation institutions should expose prospective teachers to differentiated instruction through classroom teaching and modelling. To achieve this deal, teacher education institutions may need to revise the existing curriculum in a way that would encourage greater participation among instructors in exploring differentiated instructional approaches to teachers at this level. No doubt, there will also be need for professional development to assist instructors in obtaining the necessary tools to effectively differentiate their instruction. Perhaps, there is need also for a follow-up study to determine whether this strategy will make a difference in prospective teachers' ability to engage in effective and appropriate content, process, and product differentiation. But even if prospective teachers are exposed to differentiated instruction at the teacher preparation institutions, upon entry into the classroom, these teachers will continue to experience a high level of frustration, unless school administrators provide the enabling environment to facilitate effective practice of differentiated instruction in response to students' readiness, interests, and learning profiles.

The results of the study would help the teachers to make use of the concept of Differentiated instruction in the classroom and provide opportunities for all the learners in the class according to the learners' profile, interests and needs irrespective of their limitations .

Differentiated instruction excites the brilliant student to uncover deeper layers of learning, while simultaneously structuring curriculum to support lower level students or students with learning disabilities- both identified and unidentified. Pairing students to allow for peer teaching is another method of reinforcing the strong student's understanding of material while providing a struggling student with a peer instructor. This reciprocal learning style is another way for teachers to utilize the strengths in their classrooms to create this differentiated instruction.

The model of differentiated instruction requires teachers to be flexible in their approach to teaching and adjust the curriculum and presentation of information to learners rather than expecting students to modify themselves for the curriculum. Differentiated instruction excites the brilliant student to uncover deeper layers of learning, while simultaneously structuring curriculum to support lower level students or students with learning disabilities- both identified and unidentified.

In reality many teachers are unwilling or unable to teach adaptively, developing lessons based on students' readiness, interests, and learning profile. A significant number of teachers have doubts about the successful implementation of differentiation because of the classroom size, lack of resources, lack of time, ever-rising demands, not to mention low payment.

The teacher education institutions should transform their programmes to reflect the realities of 21st century schools capable of meeting the diverse learners .One way to accomplish this is to emphasize differentiated instruction not merely as an instructional strategy, but rather as a critical teaching and learning philosophy that all prospective teachers should be exposed to in teacher education programmes.

Lastly, an important outcome of the current study is that the study has implications for social change because the differentiated instructional approach is an instructional strategy that promotes social change within a school system.

Few of the Suggestions reviewed regarding the implementation of Differentiated Instructional Strategies are as follows:

- Adequate pre service training and professional development training on differentiated instruction to be given to the teachers for the smooth implementation of Differentiated Instruction in the regular classrooms.
- Reduce the class strength for the smooth implementation of Differentiated Instruction.
- Design lessons based on students' learning styles.
- Group students by shared interest, topic, or ability for assignments.
- Continually assess and adjust lesson content to meet students' needs.
- Subject specific handouts are to be provided for the individual teachers for the proper implementation of Differentiated Instruction.
- Orientation by the school authorities for parents as well as teachers for the smooth implementation of Differentiated Instruction.

Conclusion

The concept of Differentiated instruction may be conceptualized as a teacher's response to the diverse learning needs of a student. The study tries to explore how school teachers and teacher trainees are making use of the concept of Differentiated instruction in their classrooms. The study investigates what pre-service and in-service trained teachers understand by differentiated instruction, and the extent to which they practice differentiated instruction in the classrooms.

The perfect model of differentiated instruction rests upon an active, student centered, meaning-making approach to teaching and learning. Differentiated instruction is proactive. The teacher assumes that students have differing needs and therefore plans a variety of ways for learners to express their learning. Differentiating instruction can be simple or complex, depending on the readiness a teacher takes on new challenges in getting all students to the "finish line", regardless of the varied paths they take.

Just as consumers know that a one-size-fits-all won't work when buying a pair of jeans, educators know that one standard approach to teaching will not meet the needs of all- or even most of the students. Without an attempt to vary instruction to meet the individual needs of each student, the curriculum is bound to bore some and baffle others. Thus Differentiating instruction is the key to reaching all students.

Reference

1.Chapman,C. and King, R. (2004) Planning and Organizing Standard –based Differentiated Instruction Second Edition.Corwin Sage Publications,United Kingdom.
2.Gregory,G. (2011)Differentiated Instruction. Corwin Sage Publications,United Kingdom.
3.Tomlinson, C. A. (1995). Deciding to differentiate instruction in middle school: One schools journey. Gifted Child Quarterly, 39(2), 77-87.
4.Tomlinson, C. A. (2000). Differentiated instruction: Can it work? The Education Digest, 65(5), 25-31.