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CONTENT

Preface

The tenth volume of the present e-journal "Pedagogy and Praxis is a compilation of the research work carried out by the M. Ed Students (Batch 2017-2019) under the guidance of the College's erstwhile experienced faculty. It is a fruition of our students' research efforts as part of their M. Ed course work spanning over four semesters. The thrust of the research is related to the various aspects of teacher education such as professional development, mentoring, spiritual intelligences, constructive approaches to teaching.

With reflection and hard work, the foundation for extensive research work is laid down during the study. The ground work helps in development of new knowledge about the teaching learning processes to progress educational performance. I hope that this volume enhances the writers research skills and informs the readers as to the current development in the field of education more specifically the innovations in the area of teaching learning process. It is expected that the information presented herein will extend this research background into the classroom dynamics. No doubt this collection of research articles will add to the research knowledge of the readers.

We are indebted to the authors for their timely submission of manuscripts and the reviewers for their critical comments. Lastly, we extend our appreciation to the editorial board and publishers for their contribution to the success of this publication.

Chief Editor
Prof. Dr. Sr. Mary Kutty
November 2019.

Attitude of Student Teachers towards Humanistic Approach

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Abstract

Educators nowadays argue that one of the urgent needs of the educational systems in the 21st century is to have highly qualified, competent teachers who acquire certain competencies and one of them is to be humane. Humane teachers usually acquire competencies in five areas: Teaching and learning, assessment and evaluation, personal characteristics, professional ethics and relationship with parents and community. Humane teachers should do everything in their power to develop students' interest in the act of learning, they must use different ways such as, demonstrating the real world, application of class material whenever possible, providing students with choices, among learning tasks fostering group interactions among students, developing closer teacher – students relations, helping each student set learning objectives that are challenging that can be achieved. The present research is done on the Attitude of student teachers towards a humanistic approach .The researcher has selected experimental study and questionnaire method for the present research. The questionnaire is prepared based on self-concept, self-awareness, individuality, attitude and creativity. Student teachers were divided into experimental and control group. A pre-test was conducted using a self-developed questionnaire. An intervention module was prepared with humanistic approach dimensions such as self-awareness, self-concept, creativity, individuality and attitude. The intervention module was explained only to the experimental group of student teachers A post-test was administered on all the student teachers i.e., for both experimental and control group by using a parallel form of questionnaire .Data analysis and interpretation was carried out by using statistical techniques. Mean, Standard deviation and Paired t-test are used to interpret and compare the difference in attitude of student teachers of both colleges. The interpretation at the end of each table provides inferential analysis of the statistics and provides for accepting or rejecting the said hypotheses. Findings conclude that there is a significant difference in the knowledge of self-concept and self-awareness among student teachers, there is a significant difference in the understanding of creativity among student teachers between pre- test and post-test scores with respect to humanistic approach.

Key words: Attitude, Humanistic approach, self-awareness, self-concept, creativity, individuality and attitude.

Introduction

Humanism, humanistic and humanist are terms in psychology relating to an approach which studies the whole person, and the uniqueness of each individual. The Humanistic approach emphasizes the personal worth of the individual, the centrality of human values, and the creative, active nature of human beings. This approach is optimistic and focuses on noble human capacity to overcome hardship, pain and despair. It emphasizes the importance of the inner world of the learner and places the individual's thoughts, emotions and feelings at the forefront of all human development. Humanistic psychologists argue that objective reality is less important than a person's subjective perception and understanding of the world. Many a times the humanistic approach is termed phenomenological. This means that personality is studied from the point of view of the individual's subjective experience.

Abraham Maslow (1943) proposed this theory on human motivation. To optimize a person's performance by making him realize his inner instinct, a person should focus on inner drives which could lead to self-actualization. The chief proponent of humanistic view point in education was Carl Roger, an American psychologist, a personality theorist and a renowned counsellor. He introduced this approach to counselling in 1940. He also coined the terms 'creativity' and 'self-capability' which lead to self-development.

Significance of the Study

The humanistic orientation in education is fast developing as a powerful alternative to our present system of education. The anticipated theoretical value of the present study lies in creating a better understanding of the dimensions of the humanistic approach to bring about an attitudinal change in student teachers.

Humanistic psychologists try to see people's lives as those people would see them .They tend to have an optimistic effect on human nature .They focus on the ability of human beings to think

consciously and rationally ,to control their biological urges, and to achieve their full potential . In humanistic view, people are responsible for their lives and actions and have freedom and will to change their attitude and behaviors.

Operational Definitions

Attitude:

A predisposition or a tendency to respond positively or negatively towards a certain idea, object, person, or situation.

Student Teachers:

This term is used to describe student teachers who are enrolled in a teacher preparation program and working toward teacher certification.

Humanistic Approach:

To optimize a person's performance by making him realize his inner instinct.

Objectives of the Study

- To evaluate the knowledge of self-awareness among student teachers through humanistic approach.
- To estimate the knowledge of self-concept among student teachers through humanistic approach.
- To investigate the understanding of individuality among student teachers through humanistic approach.
- To analyze the understanding of creativity among student teachers through humanistic approach.
- To analyze the attitude of student teachers towards humanistic approach.

Hypotheses of the Study

- **H1 -** There is a significant difference in the knowledge of self-concept among student teachers between pre- test and post-test scores with respect to humanistic approach.
- **H2 -** There is a significant difference in the knowledge of self-awareness among student teachers between pre- test and post-test scores with respect to humanistic approach.
- **H3 -** There is a significant difference in the understanding of individuality among student teachers between pre- test and post-test scores with respect to humanistic approach.
- **H4 -** There is a significant difference in the understanding of creativity among student teachers between pre- test and post-test scores with respect to humanistic approach.
- **H5 -** There is a significant difference in the attitude of student teachers between pre-test and post-test scores with respect to humanistic approach.

Variables of the Study

- **Independent Variables:** Humanistic approach, Intervention module
- **Dependent variables:** Attitude of student teachers, Dimensions of humanistic approach- self-awareness, self-concept, individuality and creativity.

Research Design

- Research design is described as a "master plan specifying the methods and procedures for collecting and analyzing the needed information"
- 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" (Quasi experiment). 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 this present study, the sample was selected using Random sampling technique. The researcher through random sampling out of many colleges in Hyderabad city selected only two colleges. The sample includes 48 student teachers, out of which 24 student teachers are from St. Ann's college of Education and 24 student teachers are from St. Mary's college of Education.

Tool

The tool employed in the present study includes a self-developed questionnaire consisting of 30 questions with five point likert rating scale (Strongly agree, Agree, Neutral, Disagree, Strongly disagree) with 27 positive questions and 3 negative questions that are used for the study.

Statistical Techniques

The current study has focused on studying the attitude of student teachers towards humanistic approach. The type of research conducted is "Experimental study" where the data is collected from a sample of 48 student teachers from Hyderabad City. The sample includes autonomous and non-autonomous student teachers. The data collected is analyzed and interpreted statistically. The statistical techniques used in the study are Mean, SD and t-test. The level of significance between autonomous college student teachers and non-autonomous college student teachers pre-test and post test scores are analyzed. The attitude of student teachers towards various dimensions of humanistic approach are found out using the *t*-test. The data is analyzed and presented in the form of graphs.

Hypothesis 1:

Research Hypothesis (H1) - There is a significant difference in the knowledge of self-concept among student teachers between pre- test and post-test scores with respect to humanistic approach.

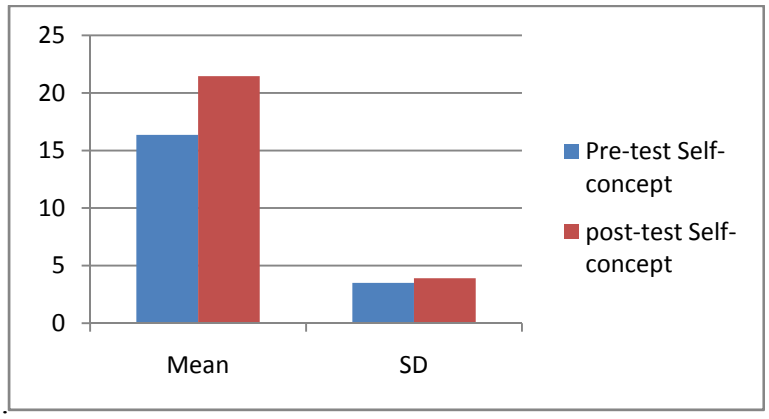
Table – 1: Differences in Mean, Standard Deviation and t – value between Pre-test and Post-test Scores of Student teachers' knowledge of self-concept.

Description	Sample			*t*-value	Significance
	Size(n)	Mean(m)	Standard Deviation		
Pre-test	48	16.35	3.5	-7.275	Significant at 0.05 level
Post-test	48	21.46	3.9		

df = 47, t table value = 2.01

Interpretation: From Table 1 The mean value (m=16.35) of pre -test score is less than the mean value (m=21.46) of post test scores of the student teachers. The pre -test score (SD=3.5) show less variance as compared to the post test scores (SD=3.9). The obtained t-value (df=47) is -7.275 is greater than the table value t (50) =2.01; $p < 0.05$. Therefore, the research hypothesis is accepted and null hypothesis is rejected. It clearly indicates that there is a significant difference between pre-test and post-test scores in the knowledge of self-concept among student teachers.

Graph. 1. Difference in the knowledge of self-concept among student teachers between pre- test and post-test scores.



Hypothesis 2:

Research Hypothesis (H2)-There is a significant difference in the knowledge of self-awareness among student teachers between pre- test and post-test scores.

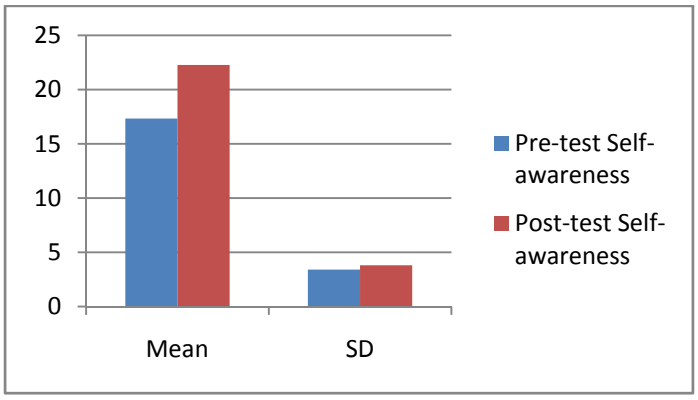
Table–2: Differences in Mean, Standard Deviation and t-value between Pre-test and Post-test Scores of Student teachers' knowledge of self-awareness.

Description	Sample			*t*-value	Significance
	Size(n)	Mean(m)	Standard Deviation		
Pre-test	48	17.33	3.4	8.403	Significant at 0.05 level
Post-test	48	22.27	3.8		

df = 47, t table value = 2.01

Interpretation: From Table 2 The mean value (m=17.33) of pre test scores is less than the mean value (m=22.27) of post test scores of the student teachers. The pre test scores (SD=3.4) show less variance as compared to the post test scores (SD=3.8). The obtained t-value (df=47) is 8.403 is greater than the table value t (50) =2.01; $p < 0.05$. Therefore, the research hypothesis is accepted and null hypothesis is rejected. It clearly indicates that there is a significant difference between pre-test and post-test scores in the knowledge of self-awareness among student teachers.

Graph.2. Difference in the knowledge of self-awareness among student teachers pre- test and post-test scores.



Hypothesis 3:

Research Hypothesis (H3) -There is a significant difference in the understanding of individuality among student teachers between pre- test and post-test scores.

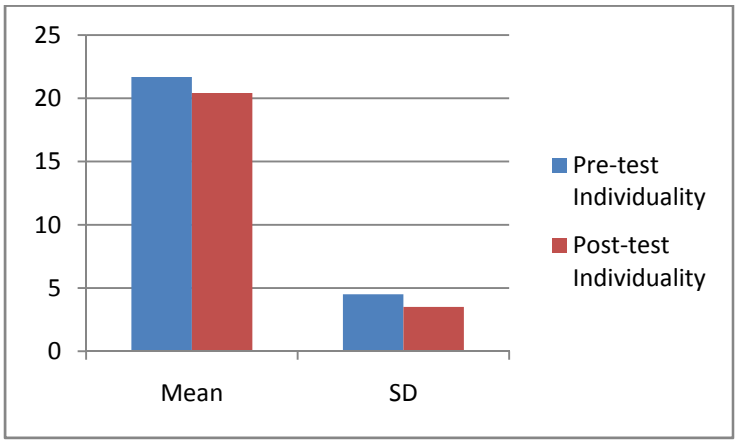
Table–3: Differences in Mean, Standard Deviation and t-value between Pre-test and Post-test Scores of Student teachers' understanding of individuality.

Description	Sample			*t*-value	Significance
	Size(n)	Mean(m)	Standard Deviation		
Pre-test	48	21.69	4.5	2.006	Significant at 0.05 level
Post-test	48	20.42	3.5		

df = 47, t table value = 2.01

Interpretation: From Table 3 The mean value (m=21.69) of pre test scores is greater than the mean value (m=20.42) of post test scores of the student teachers. The pre test scores (SD=4.5) show greater variance as compared to the post test scores (SD=3.5). The obtained t-value (df=47) is 2.006 is less than the table value t (50) =2.01; $p < 0.05$. Therefore the null hypothesis is accepted and research hypothesis is rejected. It clearly indicates that there is no significant difference between pre-test and post-test scores in the understanding of individuality among student teachers.

Graph.3. Difference in the understanding of individuality among student teachers between pre-test and post-test scores.



Hypothesis 4:

Research Hypothesis (H4)-There is a significant difference in the understanding of creativity among student teachers between pre- test and post-test scores.

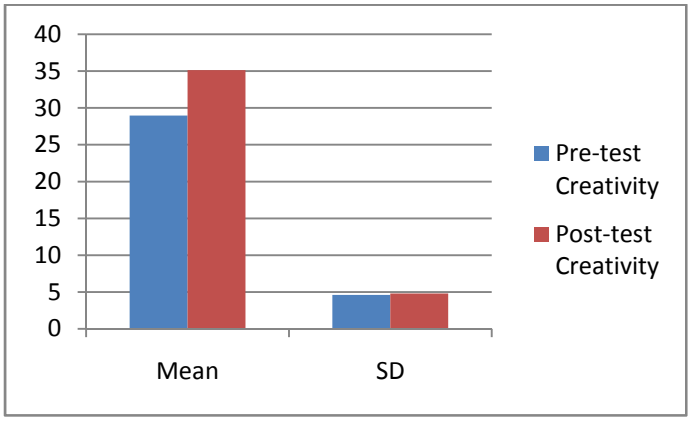
Table–4: Differences in Mean, Standard Deviation and t-value between Pre-test and Post-test Scores of Student teachers' understanding of creativity.

Description	Sample			*t*-value	Significance
	Size(n)	Mean(m)	Standard Deviation		
Pre-test	48	28.96	4.6	9.002	Significant at 0.05 level
Post-test	48	35.13	4.8		

df = 47, t table value = 2.01

Interpretation: From Table 4 The mean value (m=28.96) of pre- test score is less than the mean value (m=35.13) of post test scores of the student teachers. The pre test scores (SD=4.6) show less variance as compared to the post test scores (SD=4.8). The obtained t-value (df=47) is 9.002 is greater than the table value t (50) =2.01; $p < 0.05$. Therefore the research hypothesis is accepted and null hypothesis is rejected. It clearly indicates that there is a significant difference between pre-test and post-test scores in the understanding of creativity among student teachers.

Graph.4. Difference in the understanding of creativity among student teachers between pre- test and post-test scores.



Hypothesis 5:

Research Hypothesis (H5) -There is a significant difference in the attitude of student teachers between pre-test and post-test scores.

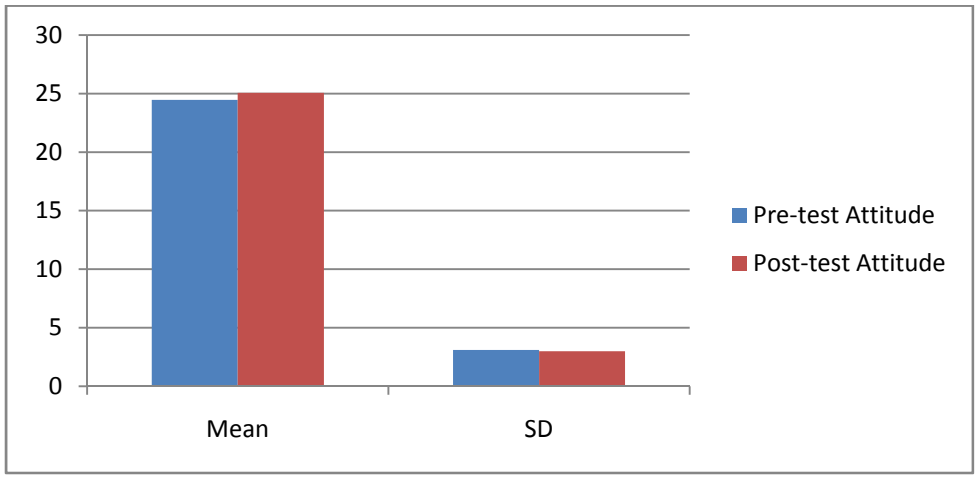
Table –5: Differences in Mean, Standard Deviation and t-value between Pre-test and Post-test Scores on attitude of student teachers between pre-test and post-test scores.

Description	Sample			*t*-value	Significance
	Size(n)	Mean(m)	Standard Deviation		
Pre-test	48	24.46	3.1	-.849	Significant at 0.05 level
Post-test	48	25.06	3.0		

df = 47, t table value = 2.01

Interpretation: From Table 5 The mean value (m=24.46) of pre- test score is less than the mean value (m=25.06) of post test scores of the student teachers. The pre- test score (SD=3.1) show greater variance as compared to the post test scores (SD=3.0). The obtained t-value (df=47) is -.849 is less than the table value t (50) =2.01; $p < 0.05$. Therefore the null hypothesis is accepted and research hypothesis is rejected. It clearly indicates that there is no significant difference in the attitude of student teachers between pre-test and post-test scores.

Graph.5. Difference in the attitude of student teachers between pre-test and post-test scores.



Findings of the Study

- There is a significant difference in the knowledge of self-concept among student teachers between pre- test and post-test scores.
- There is a significant difference in the knowledge of self-awareness among student teachers between pre- test and post-test scores.
- There is no significant difference in the understanding of individuality among student teachers between pre- test and post-test scores.
- There is a significant difference in the understanding of creativity among student teachers between pre- test and post-test scores.
- There is no significant difference in the attitude of student teachers between pre-test and post-test scores.

Limitations of the Study

The present study has some limitations as follows:

- The study was limited to only 48 B. Ed students from St. Ann's College of Education and St. Mary's college of Education.
- The data was delimited to Hyderabad city.
- Present study was conducted only in one state, therefore, more empirical evidences will be required from more states before ample generalization may be made .In light of this, it is suggested that a similar but more elaborate study may be conducted using a larger sample and covering more states in India.
- This research is limited to autonomous and non-autonomous colleges' student teachers.
- The research time allotted was limited.

Educational Implications of the Study

- Practical Implications – The results of the study would help the management to identify the problems that the student teachers encounter in the classes in order to attain attitudinal change while executing dimensions of humanistic approach and take up the appropriate steps in the areas where student teachers seek help.
- Originality/Value – After the introduction of humanistic approach in its affiliated colleges, this study was an attempt by the investigator to develop an attitudinal change in student teachers.

- The colleges have to measure the worth of being in its original stand with all their inner potentialities, strengths, weaknesses and assumptions for future.
- They need to motivate the student teachers to assess their real self now and then through humanistic approach.
- The entire study on attitudes of student teaches towards humanistic approach has yielded some new insights into influential factors on some other components of thinking process like conceptual thinking , convergent thinking , divergent thinking etc and boosts confidence in students.
- The study can be implemented to colleges, Universities to increase motivation in students and better learning takes place in colleges, Universities.
- This study can be implemented on urban and rural at state and national level teachers.
- This study can be implemented in different districts of Telangana State.
- This study can be used in higher education sector.
- The study will prove beneficial for administrators ,teachers, parents, curriculum developers, policy and decision makers.
- Colleges have to take initiative to develop self-awareness, self-concept, individuality and creativity in their student teachers and conduct workshops.

To reap a good harvest the farmer has to sow a good seed let the respective colleges take good care of student teachers in order to strength their overall dimensions of humanistic approach.

Conclusion

The results of this study revealed that there is self-concept, self-awareness and creativity in student teachers of both the colleges i.e St. Ann's College of Education and St. Mary's college of Education. The student teachers have come to know about their inner potentialities, strengths, weakness and assumptions for future. Longitudinal studies could be done on attitudinal change, where humanistic approach can be used on a group of students and its effect can be seen during every year. The emphasis is now to ensure that every student teacher not only acquires the knowledge and skills but also the ability to use these dimensions of humanistic approach in real life situations.

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A study of Assessment for Learning Strategies through a Constructivist Approach in Colleges of Education

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Abstract

The purpose of this paper is to study the assessment for learning strategies in Colleges of Education. The current study falls under the purview of Descriptive Survey research. The samples considered under the study were a set of 60 students in government, autonomous and private Colleges of Education in Hyderabad city. The data was collected using a questionnaire designed which consists of 50 statements in all. Since, the data collected is quantitative in nature, quantitative statistical methods were used to analyze and interpret the data and the techniques used were mean, standard deviation, t-test and ANOVA. The results revealed that all the Colleges of Education irrespective of the type of the administration are following the constructivist approach of learning and assessment for learning.

Keywords: Assessment, Learning strategies, constructivist approach

Introduction

Classroom assessment is highly concerned with qualitative judgments that are used to improve student knowledge and learning. Assessment is a process that includes measuring improvement over time, motivating students to study, evaluating the teaching methods and ranking the students capabilities in relation to the whole group evaluation. Assessment provides feedback on the effectiveness of instruction and gives students a measure of their progress.

Assessment for, assessment as and assessment of learning are approaches that enable teachers to gather evidence and make judgment about student achievement. Assessment of learning (summative assessment) is mostly done at the end of a task, unit of work etc. It provides evidence of achievement to parents, other educators, the students themselves and sometimes to outside groups (e.g., employers, other educational institutions). Assessment as learning helps students to take more responsibility for their own learning and monitoring future directions. Students are able to learn about themselves as learners and become aware of how they learn. The

emphasis shifts from assessment of learning (summative) to assessment for learning (formative assessment). Assessment for Learning happens during the learning, often more than once, rather than at the end. Students understand exactly what they are to learn, what is expected of them and are given feedback and advice on how to improve their work. In Assessment for Learning, teachers use assessment as an investigable tool to find out what their students know and can do, and what confusions, preconceptions, or gaps they might have.

The concept of formative assessment was first introduced in 1971 by Bloom, Hastings and Maddaus. They formally introduced the idea that assessment need not be used solely to make summative evaluations of student performance, arguing that teachers should include episodes of formative assessment following phases of teaching. Teachers have integrated formative assessment into their teaching, establishing classroom cultures that encourage interaction and use of assessment tools. Teachers noted the importance of helping students to reveal what they do and don't understand, an essential feature of the formative process. The importance of focusing students attention on mastering tasks, rather than on competition with peers, and in developing emotional competencies, such as self-awareness, self-control, compassion, co-operation, flexibility, and the ability to make judgments on the value of information serve students well in school and throughout their lives. The goal of formative assessment is to guide students toward the development of their own "learning to learn" skills. Mehmet Fatih Ayaz (2015) conducted a meta analysis study conducted in order to determine the effects of constructivist learning approach on students academic achievement. Meta analysis study determined that the constructivist learning approach, compared to traditional teaching methods, has positive effects on the student's academic achievement. Imran Mahmud, Shahriar Rawshon (2013) proposed microteaching as effective projects in a collaborative learning setting and this new way of teaching method increases the quality of higher education in a broader sense with the development of the student understanding level. Baviskar, Sandhya N, Hartle, R. Todd, Whitney, Tiffany (2009) describes Constructivism is an important theory of learning that is used to guide the development of new teaching methods, particularly in science education. The four essential features of constructivism are eliciting prior knowledge, creating cognitive dissonance, application of new knowledge with feedback, and reflection on learning. F. Dochy , M. Segers & D. Sluijsmans (2006) suggests the growing demand for lifelong learners and reflective practitioners has stimulated a re-evaluation of the relationship between learning and its

assessment, the development of new assessment forms such as self-, peer, and co-assessment. David Friesen (1994) explores action research involving the student teacher triad in an undergraduate teaching internship. It shows collaborative inquiry involving an intern, cooperating teacher, and faculty advisor who enabled them to understand and change their teaching practices. Edward A. Holdaway (1994) studied the value of an Internship program for beginning teachers. Teacher education policy around the world is being challenged and changed, and the nature of teaching, learning, and learning to teach is being reassessed. Based on the scholarship in the area of assessment for learning and its influence in constructivist classroom the following objectives of the study were formulated.

Objectives of the Study:

- To identify assessment for learning strategies in a constructivist classroom in Colleges of Education.
- To analyze the effectiveness of assessment for learning strategies in Colleges of Education.

Hypotheses:

- There is a significant difference in the assessment for learning strategies through a constructivist approach in Private and Government colleges of education.
- Assessment for learning strategies developed for constructivist classrooms are more effective in Autonomous colleges of education than Private colleges of education.
- There is a significant difference in the assessment for learning strategies through constructivist approach among Government, Autonomous and Private Colleges of education component wise (Micro teaching, Macro teaching, Project based learning, Lab based learning, Portfolio, Action Research.)

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 was designed and validated. A questionnaire was designed with 50 statements. The pilot study was conducted on the student teachers to test the reliability and validity. The tool was finalized by reframing the statements and validated again. It is a self administered scale. A stratified random sampling was adopted.

In the present study, constructivist approach is an independent variable and assessment for learning strategies is dependent variable. The scores of each response were recorded in an excel sheet.

Fig 1: Flowchart representing the sample

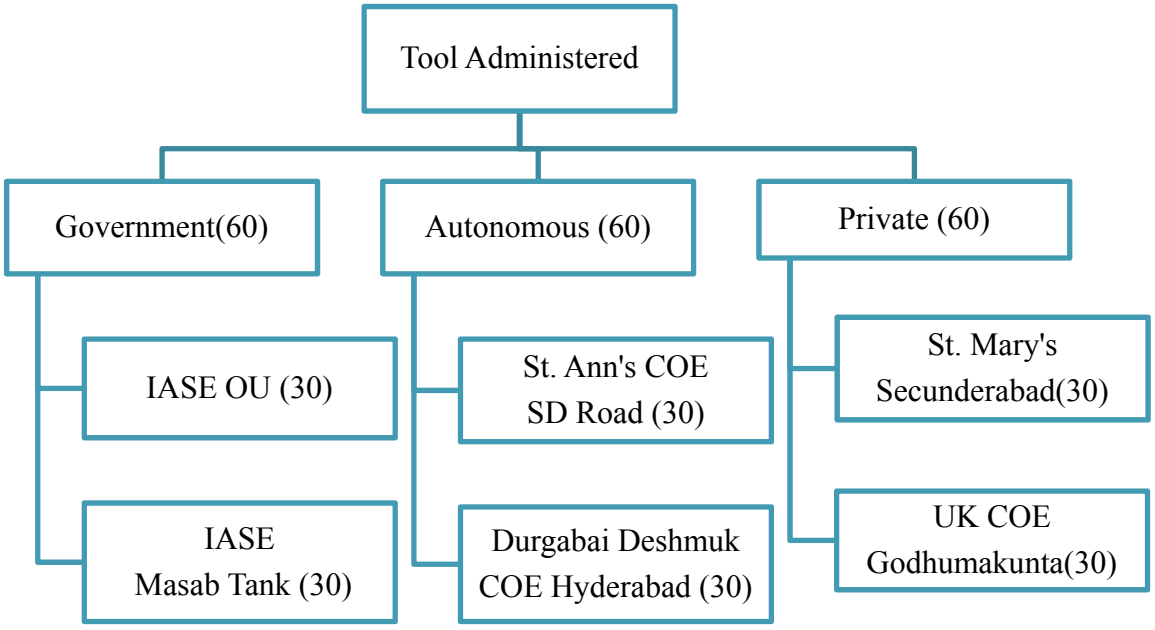


Table 1: Structure of the Questionnaire

S. No	Type of Questions	Number of Questions
1.	Questions related to Macro Teaching	19
2.	Questions related to Micro Teaching	5
3.	Questions related to Project based learning	5
4.	Questions related to Lab based learning	10
5.	Questions related to Portfolio	7
6.	Questions related to Action Research	4

Results and discussions:

To analyze the data with suitable statistical techniques data must be organized in a proper manner. Based on the scores, each component was classified into high and low. The statistical techniques used in present study are t-test and one way ANOVA. The data was analysed using the 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 I:

There is a significant difference in the use of assessment for learning strategies through a constructivist approach in Private and Government colleges of education.

Null Hypothesis:

There is no significant difference in the use of assessment for learning strategies through a constructivist approach in Private and Government colleges of education.

Table 2: Represents the use of assessment for learning strategies through a constructivist approach in private and government colleges of education.

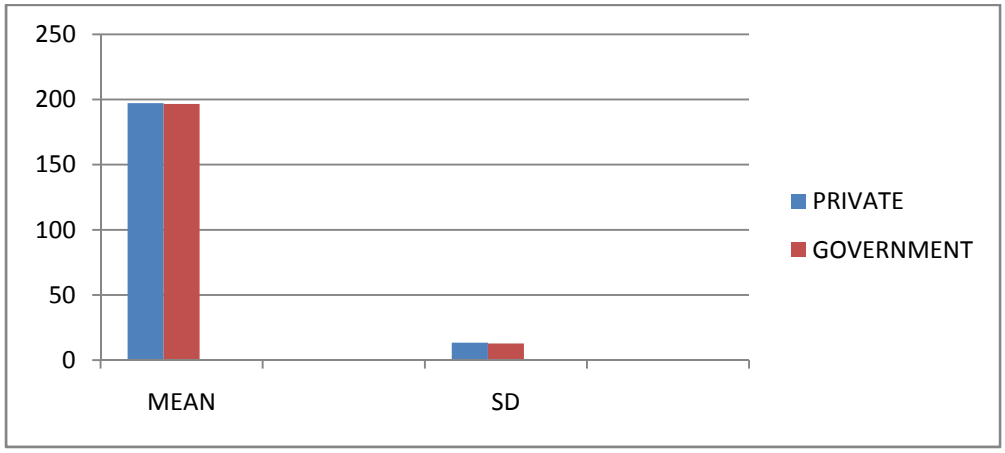
	Colleges of Education			Level of Significance
	Private	Government	t – test	Not significant
Mean	197.26	196.63	0.264	at 0.05
Standard Deviation	13.44	12.82		
N	60	60		

df = 118, t-table value = 2.00

Interpretation:

From Table 4.1 The mean value (m=197.26) of private college students is greater than the mean value (m=196.63) of government college students. The students of private college (SD=13.44) show a greater variance as compared to students of government college (SD=12.82). The obtained t-value (*df* =118) is 0.264 is less than the table value *t* (118) =2.00; $p < 0.05$. Therefore the null hypothesis is accepted and research hypothesis is rejected. It clearly indicates that there is no significance difference in the use of assessment for learning strategies through a constructivist approach in Private and Government colleges of education

Fig 2: Graphical representation of the use of assessment for learning strategies through a constructivist approach in Private and Government colleges of education.



Hypothesis II:

Assessment for learning strategies developed for constructivist classrooms are more effective in Autonomous College of Education than Private College of Education.

Null Hypothesis:

Assessment for learning strategies developed for constructivist classrooms are not more effective in Autonomous College of Education than Private College of Education.

Table 3: represents Assessment for learning strategies developed for constructivist classrooms in Private and Autonomous College of Education

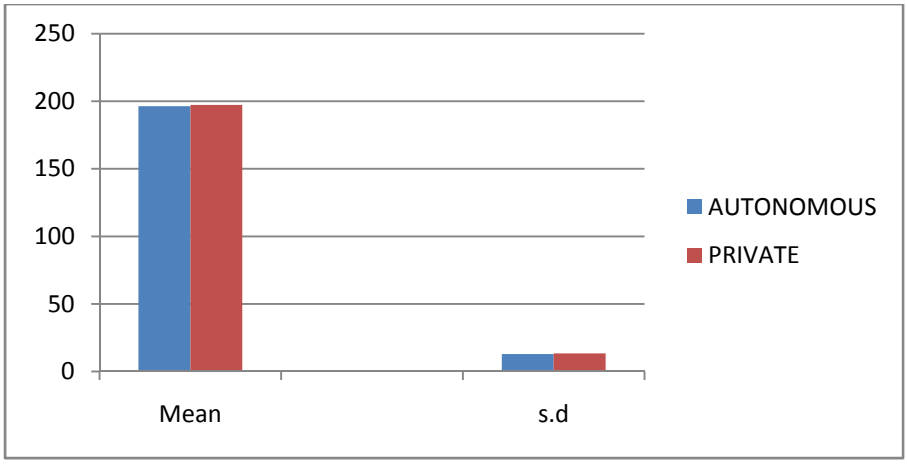
Assessment for learning strategies	Colleges of Education		t – Value	Level of Significance
	Autonomous	Private	0.368	Not significant at 0.05
Mean	196.38	197.26		
Standard Deviation	12.87	13.44		
N	60	60		

df = 118, t -table value = 2.00

Interpretation:

From Table 3 The mean value (m=197.26) of private college students is greater than the mean value (m=196.38) of autonomous college students. The students of private college (SD=13.44) show a greater variance as compared to students of government college (SD=12.87). The obtained t-value (*df* =118) is 0.264 is less than the table value t (118) = 2.00; $p < 0.05$. Therefore, the null hypothesis is accepted and research hypothesis is rejected. It clearly indicates that Assessment for learning strategies developed for constructivist classrooms are more effective in Private College of Education than Autonomous College of Education.

Fig 3: Graphical representation of Assessment for learning strategies developed for constructivist classrooms in Private and Autonomous College of Education.



Hypothesis 3:

There is a significant difference in assessment for learning strategies through a constructivist approach in Government, Autonomous and Private Colleges of Education component wise (Micro teaching, Macro teaching, Project based learning, Lab based learning, Portfolio, Action Research.)

Null Hypothesis:

There is a no significant difference in assessment for learning strategies through a constructivist approach in Government, Autonomous and Private colleges of education component wise (Micro teaching, Macro teaching, Project based learning, Lab based learning, Portfolio, Action Research.)

Table - 4 Represents Micro teaching component among student teachers of Government, Private and Autonomous colleges of education.

Micro teaching	Sum of squares	Mean square	Degree of freedom(*df*)	*f*	Level of significance
Between groups	2.978	1.489	2	0.039	0.05
Within groups	6711.6	37.919	177		
Total	6714.5		179		

Interpretation: Table 4 indicates the use of microteaching among student teachers of Government, Private and Autonomous colleges of education between groups (*sum. Squares*=2.978 ,*M.Sq.* =1.489) and within groups (*sum. Squares* = 6711.6, *M.Sq.* = 37.919), the obtained *f* value is 0.039 at *df* (2, 177) is less than the critical value 3.04 *at p< 0.05 level of significance*.

Fig 4: Graphical representation of Micro teaching component among student teachers of Government, Private and Autonomous colleges of education.

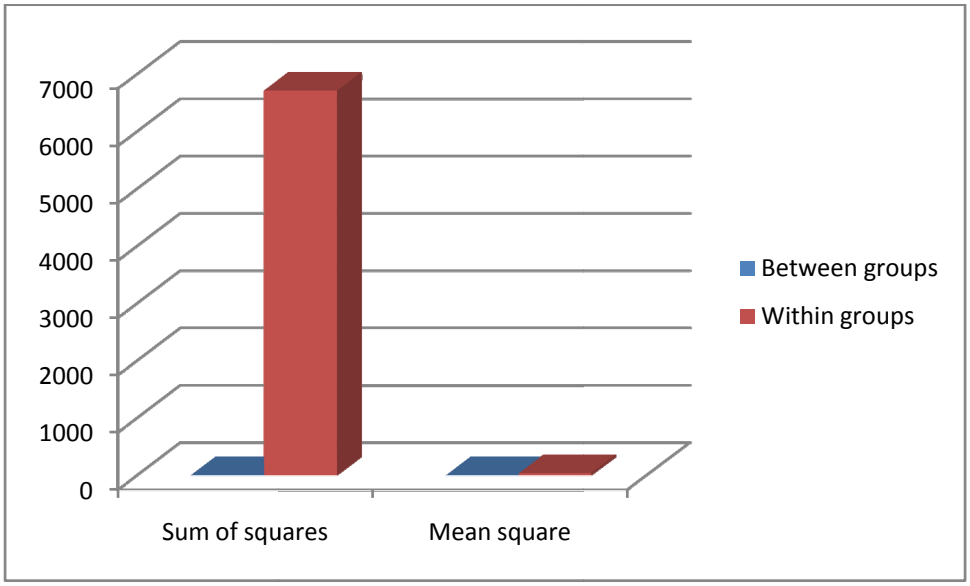


Table 5: Representation of Macro teaching component among student teachers of Government, Private and Autonomous colleges of education.

Macro teaching	Sum of squares	Mean square	Degree of freedom (*df*)	*f*	Level of significance
Between groups	0.400	0.200	2	0.027	0.973 Not significant at 0.05 level
Within groups	1302.150	7.357	177		
Total	1302.550		179		

Interpretation: Table 5

indicates the macro teaching component among student teachers of government, private and autonomous colleges of education between groups (*sum. Squares*=0.400, *M.Sq.* = 0.20) and within groups (*sum. Squares*=1302.150,*M.Sq.* = 7.357), the obtained *f* value is 0.027 at *df* (2, 177) is less than the critical value 3.04 *at p< 0.05 level of significance*.

Fig 5: Graphical representation of Macro teaching component among student teachers of government, private and autonomous colleges of education.

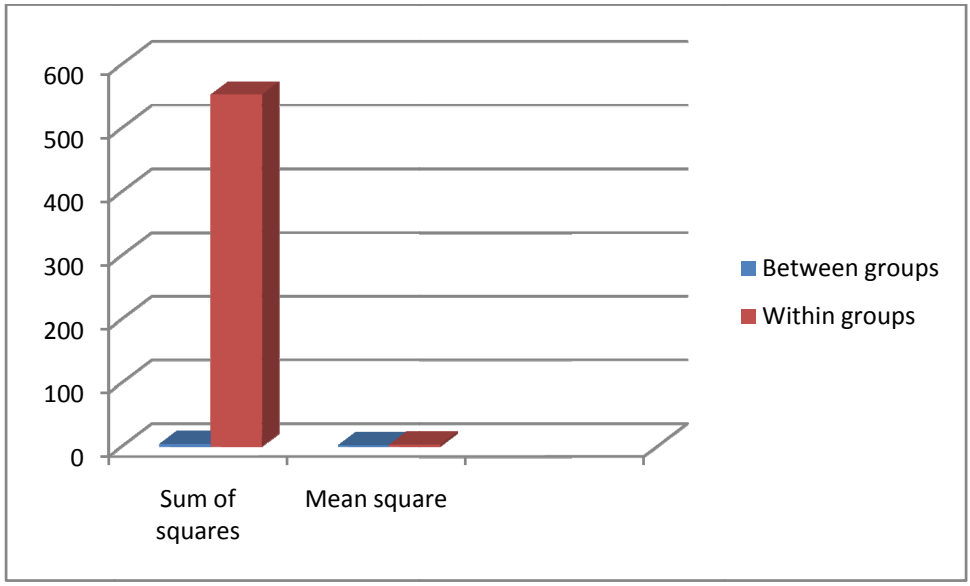


Table 6: Represents Project based learning component among student teachers of government, private and autonomous colleges of education.

Project based learning	Sum of squares	Mean square	Degree of freedom(*df*)	*f*	Level of significance
Between groups	6.078	3.039	2	0.534	0.587
Within groups	1007.583	5.693	177		Not significant at
Total	1013.661		179		0.05 level

Interpretation: Table 6 indicates the project based learning component among student teachers of Government, Private and Autonomous colleges of education between groups (*sum. Squares*=6.078,*M.Sq.* =3.039) and within groups (*sum. Squares*=1007.583, *M.Sq.* = 5.693), the obtained *f* value is 0.534 at *df* (2, 177) is less than the critical value 3.04 *at p< 0.05 level of significance*.

Fig 6: Graphical representation of Project based learning component among student teachers of Government, Private and Autonomous colleges of education.

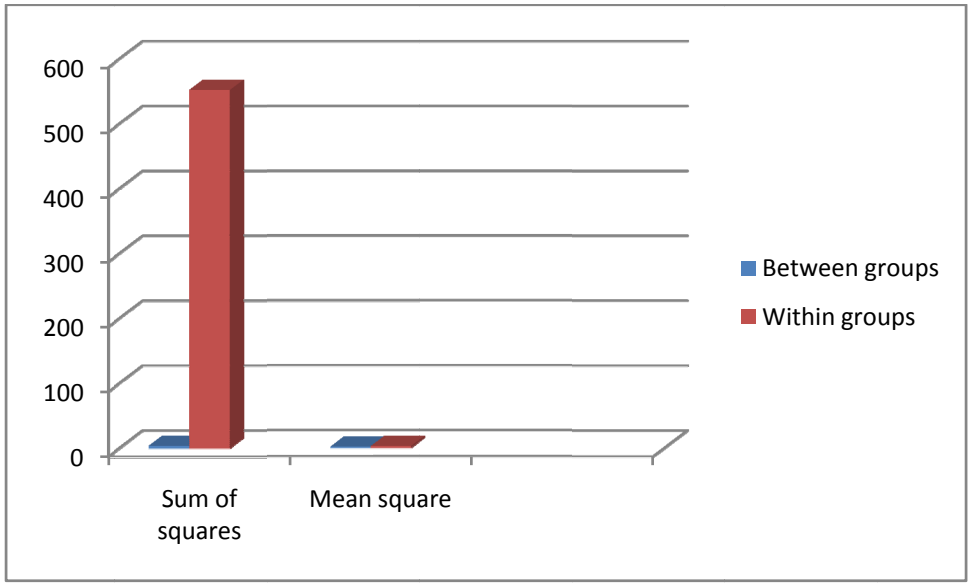


Table 7: Represents Lab based learning component among student teachers of Government, Private and Autonomous colleges of education.

Lab based learning	Sum of squares	Mean square	Degree of freedom(*df*)	*f*	Level of significance
Between groups	21.478	10.739	2	0.731	0.483
Within groups	2598.850	14.683	177		Not
Total	2620.328		179		significant at 0.05 level

Interpretation: The above table 7 indicates the lab based learning component among student teachers of Government, Private and Autonomous colleges of education between groups (*sum. Squares*=21.478*, M.Sq.* =10.739) and within groups (*sum. Squares*=2598.850*, M.Sq.* = 14.683), the obtained *f* value is 0.731 at *df* (2, 177) is less than the critical value 3.04 *at p < 0.05 level of significance*.

Fig 7: Graphical representation of Lab based learning component among student teachers of Government, Private and Autonomous colleges of education.

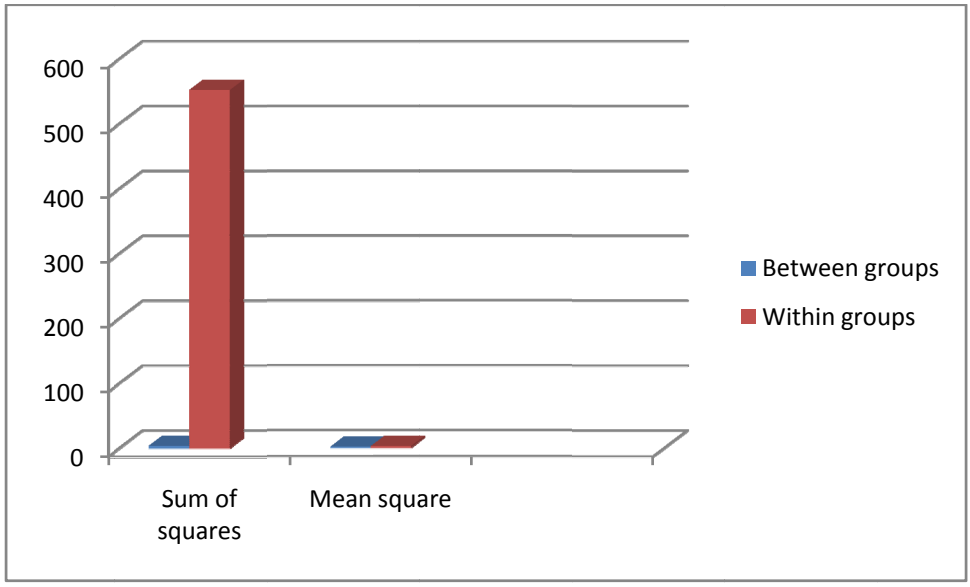


Table 8: Represents Portfolio component among student teachers of Government, Private and Autonomous colleges of education.

Portfolio	Sum of squares	Mean square	Degree of freedom (*df*)	*f*	Level of significance
Between groups	1.344	0.672	2	0.085	0.919
Within groups	1400.050	7.910	177		Not
Total	1401.394		179		significant at 0.05 level

Interpretation: Table 8 indicates portfolio component among student teachers of Government, Private and Autonomous colleges of education between groups (*sum. Squares*=1.344, *M.Sq.* =0.672) and within groups (*sum. Squares*=1400.050,*M.Sq.* = 7.910), the obtained *f* value is 0.085 at *df* (2, 177) is less than the critical value 3.04 *at p< 0.05 level of significance*.

Fig: 8 Graphical representation Portfolio components among student teachers of Government, Private and Autonomous colleges of education.

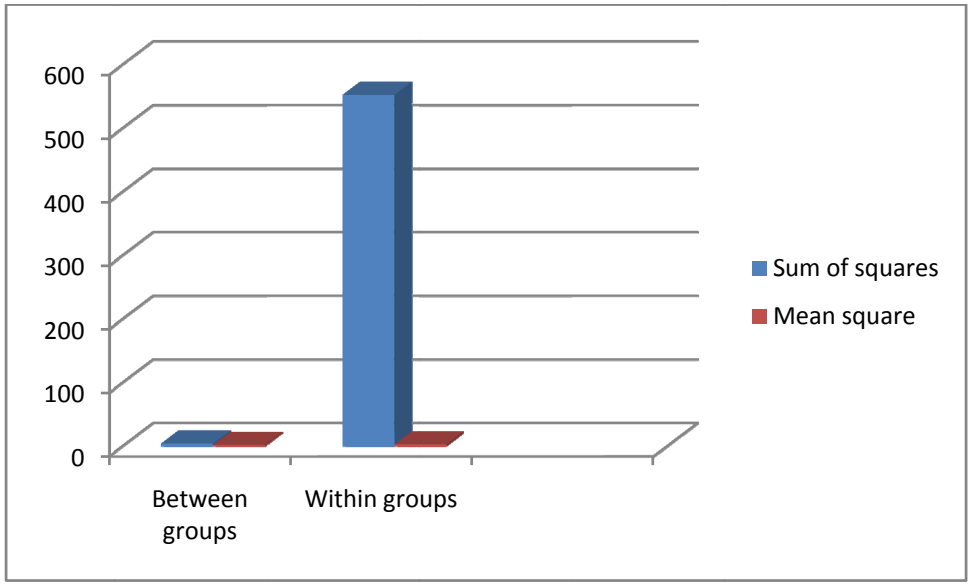


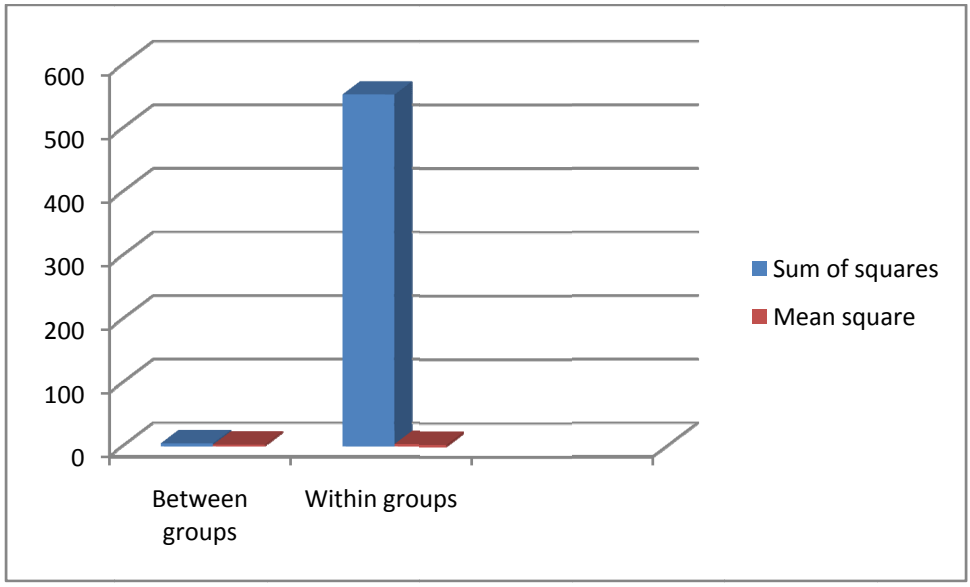
Table 9: Represents Action Research component among student teachers of government, private and autonomous colleges of education.

Action Research	Sum of squares	Mean square	Degree of freedom(*df*)	*f*	Level of significance
Between groups	4.211	2.106	2	0.675	0.511 Not
Within groups	552.517	3.122	177		significant
Total	556.728		179		at 0.05 level

Interpretation: The above table 4.8 indicates the action research component among student teachers of government, private and autonomous colleges of education between groups (*sum. Squares*=4.211, *M.Sq.* =2.106) and within groups (*sum. Squares*=552.517, *M.Sq.* = 3.122), the

obtained *f* value is 0.675 at *df* (2, 177) is less than the critical value 3.04 *at p< 0.05 level of significance*.

Fig 9: Graphical representation of Action Research component among student teachers of Government, Private and Autonomous colleges of education.



Finding of the Study

1. A study on the use of assessment for learning strategies through a constructivist approach in Government, Private and Autonomous Colleges of Education

It is found that there is no significant difference in the use of assessment for learning strategies through a constructivist approach between Government, Private and Autonomous Colleges of Education. Therefore, we can infer that all the Colleges of Education adopt assessment for learning strategies through a constructivist approach.

2. A study on Assessment for learning strategies developed for constructivist classrooms are more effective in Autonomous College of education than private college of education.

3. It is found that assessment for learning strategies developed for constructivist classroom are effectively adopted in both Autonomous and Private colleges of education.

4. There is a significance difference in the use of microteaching in a constructivist classroom in Government, Autonomous and Private colleges of education.

5. It is found that all the colleges of education irrespective of the type of the college are now adopting assessment for learning for effective teaching and learning process.

Conclusion:

Assessment for learning strategies such as Micro-teaching, Macro-teaching, Project based learning, Lab based learning, Portfolio, Action research in a constructivist classroom are important to understand the learning outcomes and skill development among the student teachers. The study clearly indicates that the management does not influence the assessment for learning strategies employed in colleges of education.

Future research may address:

- The impact of formative assessment on general student achievement.
- The relative impact of formative assessment methods for underachieving students.
- Effective formative approaches for students based on gender, ethnicity, socio-economic status, or age.
- Connections between students' emotions and learning.
- The expansion of teacher repertoires to meet identified student needs
- The challenges of deepening and broadening practice of effective formative assessment approaches and techniques.

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A Study on Perceptions of Students towards Co-Education

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Abstract

The current research was carried out to study" The perceptions of students towards co-education*". For this purpose, a sample of 70 students were selected. The research method used is Qualitative methods of data capturing to carry out the study. The findings of the study show that most of the students agreed that a* ***co-education set up*** *helps them to develop students' self-confidence and mental health to understand each other and is helpful for them to meet their academic requirements. The students felt comfortable with their classmates and the majority of them had no issue in working with each other* and could understand each other in co-education set up for successful academic growth*. Co-education set up provides a platform for both boys and girls which help them to develop self-assurance with a positive attitude which strengthens their unbiased nature without gender discrimination.*

Key words: Co-education set up, self-confidence, self-assurance, gender discrimination

Introduction:

In early civilizations, people were educated informally, primarily within the household. As time progressed, education became more structured and formal. Women often had very few rights when education started to become a more important aspect of civilization and even in areas where the expansion of the educational system started earlier, women were denied formal education during colonialism but often received instructions to enable them to perform domestic tasks and raise their children. With time, the availability of education was gradually extended to women, but they were taught separately from men.

Significance of Co-education:

Students benefit enormously by learning in a co-educational environment. Boys learn how to participate better in class discussions through their interaction with girls, and girls learn the problem-solving skill to take up risks through their interaction with boys. In a co-educational environment, we can plan and provide educational opportunities with rich learning experiences that meet the different ability levels and learning styles of our students without gender discrimination in the classrooms.

Need of the study:

Educational institutions segregated based on gender are a sign of backwardness, and the sooner this segregation is done away with the better for the country. Co-education set up provides a positive and good environment for the development of healthy personalities. If there is co-education, boys and girls will know how to interact with each other positively and this will also help them towards social adjustability. In gender-segregated schools or colleges, boys and girls live in inhabited environments, with false notions and fantasies about the opposite gender, whereas co-education will make children more mature and more realistic. Hence, this is an attempt to study the perceptions of students towards co-education.

Research Questions:

The research questions of this study are:

1. How does co-education build self-confidence among students?
2. Co-education setup creates a healthy competitive atmosphere in the classroom. Justify.
3. Will a co-education setup help students understand each other in a better way?
4. How is co-education setup helpful to meet students' practical needs?
5. Do you feel comfortable working with your classmates?
6. How does gender influence students attitude towards co-education?

Objective of the Study:

To study the perceptions of students towards co-education setup

Variables of the Study:

Independent variable: Perceptions of students towards co-education

Dependent variable: Gender background , Type of management of the schools.

Sample:

The sample for this study consists of 35 boys and 35 girls selected randomly from Private and Government schools.

Procedure of Data Collection and Analysis:

After preparation of the questionnaire, The participants were requested to complete the questionnaire which is presented to them. The responses of the items were recorded from the students of Government school and Mahesh Vidya Bhavan High School, Shivrampally, Rajendernagar, Hyderabad, Telangana. The recorded information is analyzed and interpreted then the percentage of each response was calculated and is given in the form of tables and each table was interpreted.

Qualitative Analysis:

Table 1: Co-education setup builds students self confidence

Statements	Frequency	Percentage
Strongly Disagree	3	4.3
Disagree	4	5.7
Neutral	3	4.3
Agree	24	34.3
Strongly Agree	36	51.4
Total	70	100.0

The above table indicates that 4.3% of the students strongly disagree with this statement,5.7% disagree,4.3% did not show any response, and 34.3% of students agree with it, whereas 51.4% of students strongly agree that co-education setup builds students confidence. Hence, 85.7% of students revealed their agreement with this opinion which reflects that co-education setup favors for building self-confidence among students.

Table 2: Co-education setup creates a healthy competitive atmosphere in the classroom

Statements	Frequency	Percentage
Strongly Disagree	5	7.14
Disagree	9	12.8
Neutral	14	20.0
Agree	22	31.4
Strongly Agree	20	28.5
Total	70	100.0

The above table indicates that 7.14% of the students strongly disagree with this statement,12.8% disagree,20.0% did not show any response, and 31.4% students agree that the co-education setup creates an atmosphere of healthy competition in the classroom, whereas 28.5% students strongly agree with it. The conclusion showed that 59.9% of students are in favour of this opinion that co-education setup **creates** a healthy competitive atmosphere in the classroom.

Table 3: In Co-education setup students can understand each other in a better way

Table 3: In Co-education set up students can understand each other in a better way.

Statements	Frequency	Percentage
Strongly Disagree	4	5.7
Disagree	8	11.4
Neutral	16	22.9
Agree	26	37.1
Strongly Agree	16	22.9
Total	70	100.0

The above table indicates that 5.7% of the students strongly disagree with this statement, 11.4% disagree, and 22.9% did not show any response and 37.1% students agreed that in co-education setup students (boys/girls) can understand each other in a better way. The conclusion shows that 60% of the students could understand each other in a better way in co-education set up for successful sharing scholastic and non-scholastic works.

Table 4: Co-education is very helpful in order to meet students' practical needs

Statements	Frequency	Percentage
Strongly Disagree	4	5.7
Disagree	4	5.7
Neutral	12	17.1
Agree	30	42.9
Strongly Agree	20	28.6
Total	70	100.0

The above table indicates that 5.7% of the students are strongly disagree with this statement,5.7% are disagree,17.1% did not show any response, and 42.9% students agree that Co-education set up is very helpful in order to meet students' practical needs, whereas 28.6% students are strongly agree with that statement. The conclusion showed that 71.5% of the students agreed that co-education is very helpful in order to meet their academic practical needs.

Table 5: I feel comfortable in working with my class fellows

Statements	Frequency	Percentage
Strongly Disagree	4	5.7
Disagree	12	17.1
Neutral	11	15.8
Agree	29	41.4
Strongly Agree	14	20.0
Total	70	100.0

The above table indicates that 5.7% of the students strongly disagree with this statement,17.1% disagree,15.8% did not show any response, and 41.4% students agree that I feel comfortable in working with my class fellows, whereas 20.0% students strongly agree with that statement. The conclusion shows that 61.4% of the students felt comfortable in working with their classmates.

Table 6: I have no issue in working with my opposite gender in/out of the class.

Statements	Frequency	Percentage
Strongly Disagree	5	7.2
Disagree	12	17.1
Neutral	10	14.2
Agree	28	40.0
Strongly Agree	15	21.5
Total	70	100.0

The above table indicates that 7.2% of the students strongly disagree with this statement, 17.1% disagree, 14.2% do not show any response, and 40.0% students agree that I have no issue in working with my opposite gender in out of the class, whereas 21.5% students strongly agree with that statement. The conclusion shows that 61.5% of the students had/have no issue in working with their opposite gender in/out of the class.

Findings

After analysis of the data the following findings were drawn:

1.Majority of the students (85.7%) revealed their agreement with this opinion which reflects that co-education setup favors for building self-confidence among students.

2. The conclusion showed that 59.9% of students are in favour of this opinion that co-education setup createsa healthy competitive atmosphere in the classroom.

3. The findings reveal that 60% of the students could understand each other in a better way in co-education set up for successful sharing of scholastic and non-scholastic works.

4. The conclusion showed that 71.5% of the students agreed that co-education setup is very helpful in order to meet their academic practical needs.

5.Most of the students (61.4%) of the students felt comfortable in working with their classmates.

6. Majority of the students (61.5%) expressed their positive attitudes to work with opposite gender and had no issue in working with each other in/out of the class for successful academic growth.

Conclusion:

Co-education setup plays a vital role to develop the students' self-confidence and it provides a platform for both boys and girls to develop their self-assurance and they will know how to interact with each other in a healthy competitive learning atmosphere in/out the classroom and this will also enable them to develop good life skills which paves a way for better adjustment and adaptability in society.

Recommendations:

Based on these findings the following recommendations are made to minimize the problems in co-education set up.

1. The teachers may help the students to minimize students' anxiety by making them feel confident and comfortable by providing proper guidance, by not asking such questions which makes them uncomfortable.

2. The teachers may have good observation so that they can identify students' particular problems and try to help them in solving these problems.

3. The teachers may encourage students to participate in classroom discussion for proper collaborative work.

4. The department may provide equal opportunities to both boys and girls by organizing various programs and activities.

5. The students, who indulge in unhealthy activities must be counseled by counselors.

6. Enable the students to take part in healthy activities by introducing different programs and extra-curricular activities without any gender discrimination.

7. The Government may provide more resources and relaxations to the universities which fulfill the university's requirements and in turn, the university faculty provides better facilities to students.

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Impact of Geometer's Sketch Pad on High School Students' Performance in Mathematics

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Abstract

Mathematics has long been one of the most feared subjects among students. As such, educators have been constantly looking into different approaches to continue improving the transaction of this subject. This study seeks to investigate the impact of Geometers' Sketchpad (GSP) - a dynamic geometrical software, in the teaching and learning of Mathematics among high school students. This study was conducted on 40 students who were divided into the control group and an experimental group. The control group received conventional teaching method while the experimental group was taught based on a GSP module designed to solve Triangles. A questionnaire was used to see the attitude and perception of students towards the usage of Geometers Sketch pad and an achievement test was administered to see its impact on students' achievement. A descriptive analysis showed that most of the students agreed that the Geometer's Sketchpad is a useful tool for learning Geometry. The findings from this study have indicated that the students perception towards the use of Geometer's Sketchpad is positive, there is a need to improve the attitude of the students towards the use of Geometer's Sketchpad since there is a considerable improvement in the scores of students in the achievement test after the use of Geometers Sketchpad in the teaching learning process.

Key words: Geometers sketch pad, geometry, attitude, achievement

Introduction

Background:

Teaching mathematics has progressed throughout time as new devices and methods have been introduced. The challenge has been to identify which devices and methods are helpful and which devices and methods are just different. Teachers need to find the most effective way to teach, whether it is "old way" or "new way".

In recent years, a lot of talks have been expressed on the use of Information, Communication and Technology (ICT) in education. Along with the implementation of IT in education, it provides us a good chance to make use of ICT in teaching and learning mathematics. Some of these are in the form of hand held tools (e.g. calculators and graphic calculators) and softwares such as Mathcad, Derive, Mathematica, Matlab, Geometer's Sketchpad, Autograph dan Matlab. For the software application, it could perform like a mindtool to facilitate learning. Unlike a calculator that gives an answer when instructions are posed, a mindtool would form a learning partner with a student, allowing the student to learn through exploratory method.

The learning of geometry emphasizes the mastery of deductive skills in writing proof. In the current trend of the teaching and learning of mathematics, it is no longer adequate to teach students with the traditional expository approach at the current age of knowledge explosion. In response to the foreseeable change of global knowledge economy, the teaching and learning of geometry utilizing dynamic geometry softwares have been explicitly indicated in the secondary schools,. Teachers have been recommended to utilize dynamic softwares and one such dynamic geometry software licensed is the Geometer's Sketchpad (GSP) software, developed partly under the Geometry Visual Project conducted in Pennsylvania and sponsored by the National Science Foundation

Geometer's Sketchpad:

The Geometer's Sketchpad is a popular commercial interactive geometry software programme for exploring Euclidean geometry, algebra, calculus, and other areas of mathematics. It was created by Nicholas Jackiw (1995). Geometer's Sketchpad includes the traditional Euclidean tools of classical geometric constructions, that is, if a figure as it can be constructed with compass and straight-edge, it can also be constructed using GSP. Objects can also be animated. The programme also allows the determination of the midpoint and mid segments of objects.

Geometer's Sketchpad allows students to design figures using circles, lines, segments, arcs, and other geometric shapes. Once students design an object, they can measure angles, arcs, segment lengths, find midpoints and other measurements. The student can then grab a point on the figure, move it, and watch the measurements change with the change in the object. For example, if a geometry teacher is teaching students about parallel lines and angles, then the

students can design two or more parallel lines and a transversal using Sketchpad. Similarly the student can measure alternate interior, alternate exterior, corresponding, same side interior, and same side exterior angles also using Sketchpad. Once the student measures all of these angles, he or she should see the pairs of matching angles. The student can move the lines and watch the measurements change, but stay equal to the measurement of the matching angle. This fast-paced manipulation of a figure cannot be done using paper and pencil. This computer programme allows students to change or move figures very quickly and get clear results. Once students become comfortable using Geometers Sketchpad, lessons typically proceed at a much faster pace.

Sketchpad's integration of visual and numerical representations supports students' constructions of meaning and connects shape and number. In preparing students for the world, teachers increasingly understand the importance of modeling, which provides a rich arena for students' mathematical development, transcending example-based processes and linking real-world situations to mathematical processes.

Geometer's Sketchpad allows students to "see for themselves" in a virtual environment. Since they can control what the computer is doing, they can also develop formulas inductively and test them with the software and Geometers' Sketchpad used in this study also suggest that there is a need to provide more interactive and hands-on learning activities for geometry learning at the secondary school level.

Significance of the problem:

Learning geometry may not be easy, and a large number of the students fail to develop an adequate understanding of geometry concepts, geometry reasoning, and geometry problem solving skills. The lack of understanding in learning geometry often causes discouragement among the students, which invariably will lead to poor performance in geometry. This study would contribute significantly to the existing knowledge when looking at the effect of utilizing technology for the teaching of mathematics, especially in a subject that is not a favorite amongst students. The research also had utilized a Geometer's Sketchpad software used for teaching mathematics. The results of this research would be very useful for all secondary students.

Research questions:

This study attempts to answer the following research questions:

1. What are the student's perceptions about the usage of Geometers' Sketchpad in learning geometry?
2. What is the student's attitude about using the Geometer's Sketchpad in learning Geometry?
3. Is there an improvement in the student's achievement after using the Geometer's Sketchpad?

Objectives of the study:

- To understand the perception of students on the use of Geometer's Sketchpad in the teaching and learning process.
- To understand the Geometer's Sketchpad usage in mathematics classroom specifically on students' attitude.
- To explore the effectiveness of using Geometer's Sketchpad on students' achievement.

Hypotheses of the study

Hypothesis 1: There is a significant difference in the perception of students' towards the use of Geometer's Sketchpad before and after the intervention programme.

Hypothesis 2: There is a significant difference in the attitude of students' towards the use of Geometer's Sketchpad before and after the intervention programme.

Hypothesis 3: There is a significant difference in the achievement of students' towards the use of the Geometer's Sketchpad before and after the intervention programme.

Variables:

Independent Variables: Intervention programme

Dependent Variable: student achievement, student attitude, student perception

Research design

The study was quasi-experimental that uses pre-test, post-test, non-equivalent group design. In this study quantitative approach was used to compare the pre-test as well as the post- test scored of the two groups namely the students who learnt through Geometry sketchpads and the students who learnt through traditional classroom instruction. In addition to this, questionnaires were used to investigate the perception of the participants towards using Geometry Sketchpad instruction quantitatively.

Population: 8th grade students of Hyderabad district.

Sample: Forty 8^{th} grade students from Gopi Memorial High School, Kushaiguda were taken as the sample for the study. Out of which 20 students comprised the control group and 20 students comprised the experimental group. Stratified random sampling technique was used.

Research tool:

a. In order to measure students' attitude and students' perception towards the use of geometers sketchpad in the teaching learning process, a self developed questionnaire which consists of 34 questions was used.

b. In order to test the performance of students an achievement test i.e. pre-test and post- test was developed for 25 marks on the topic "Triangles". Classification of Triangles Median and Altitudes of a Triangle, Interior and Exterior of a triangle, Area and Perimeter of a Triangle were tested upon.

Statistical techniques applied to analyze data:

In order to analyze the data Mean, Standard Deviation and t-test were used.

Analysis and interpretation

Hypothesis – I

There is a significant difference in the students' perception on using the Geometer's Sketchpad in learning geometry before and after the intervention programme.

Null hypothesis

There is no significant difference in the students' perception on using the Geometer's Sketchpad in learning geometry before and after the intervention programme.

Table-1

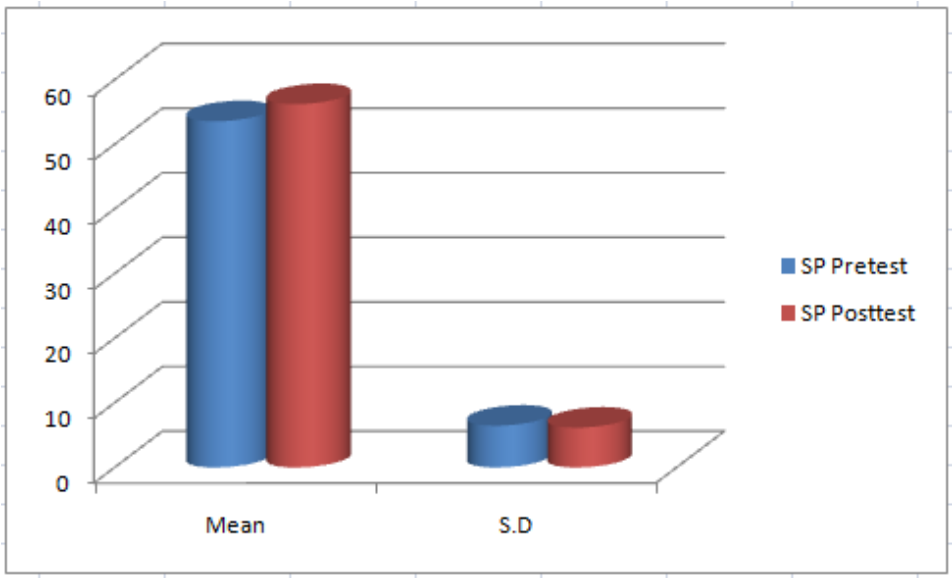
Table showing the differences in Mean, Standard Deviation and *t*-Value between students Perceptions on using the Geometer's Sketchpad in learning geometry before and after the intervention programme.

Description	Sample			*t*-value	Significance level
	Size(n)	Mean(m)	Standard Deviation		
SP Pretest	20	53.58	6.464	2.115	Significant at 0.05 level
SP Post test	20	56.23	6.154		

df = 19 , t table value = 2.09

Graph -1

Graph showing Students' Perceptions on using the Geometer's Sketchpad in learning geometry before and after the intervention programme.



Interpretation:

The calculated mean value of SP pretest scores of Students' Perception is 53.58 and S.D value is 6.464 at 19 df. The mean value of SP posttest scores of Students' Perception is 56.23 and the S.D value is 6.154 at 19 df. The obtained t-value at 39 df is 2.115, the table t value at 19 df is 2.09 at 0.05 significance level; $p > 0.05$ .Since the obtained t-value is more than the table value at 0.05 significance level; $p > 0.05$.

Hence, research hypothesis is accepted and null hypothesis is rejected, which implies that there is a significant difference in the students' perception on the usage of Geometer's Sketchpad in learning geometry before and after the intervention programme.

Hypothesis – II

There is a significant difference in the students' attitude on using the Geometer's Sketchpad in learning geometry before and after the intervention programme.

Null hypothesis

There is no significant difference in the students' attitude on using the Geometer's Sketchpad in learning geometry before and after the intervention programme.

Table -2.

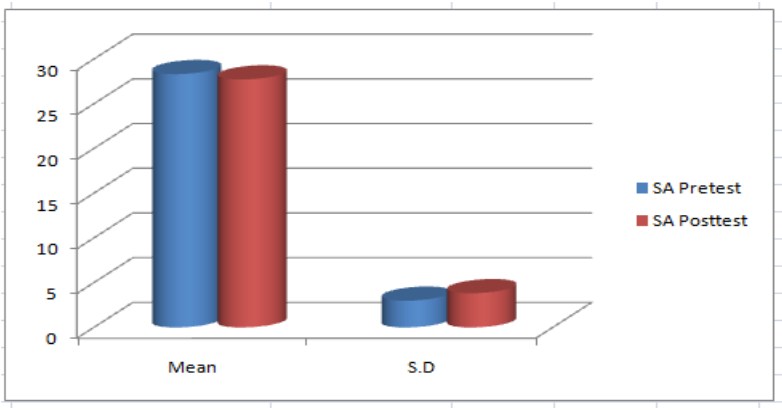
Table showing the differences in Mean, Standard Deviation and *t*-Value Between students' attitude on the usage of Geometer's Sketchpad in learning geometry before and after the intervention programme.

Description	Sample			*t*-value	Significance level
	Size(n)	Mean(m)	Standard Deviation		
SA Pretest	20	28.33	2.990	.822	Not Significant at 0.05 level
SA Posttest	20	27.73	3.830		

df = 19, t table value = 2.09

Graph -2

Graph showing Students' attitude on the usage of Geometer's Sketchpad in learning geometry before and after the intervention program.



Interpretation: The calculated mean value of SA Pretest scores of Students' attitude is 28.33 and S.D value is 2.990 at 19 df. The mean value of SA posttest scores of Students' attitude is 27.73and the S.D value is 3.830 at 19 df. The obtained t-value at 19 df is 0.822, the table t value at 19 df is 2.09 at 0.05 significance level; $p< 0.05$ .Since the obtained t-value is less than the table value at 0.05 significance level; $p < 0.05$.

Hence research Hypothesis is rejected and null hypothesis is accepted which implies that there is no significant difference in the students' attitude on using the Geometer's Sketchpad in learning geometry before and after the intervention programme.

Hypothesis – III

There is a significant difference in the students' achievement on the usage of Geometer's Sketchpad in learning geometry before and after the intervention programme.

Null hypothesis

There is no significant difference in the students' achievement on the usage of Geometer's Sketchpad in learning geometry before and after the intervention programme.

Table -3

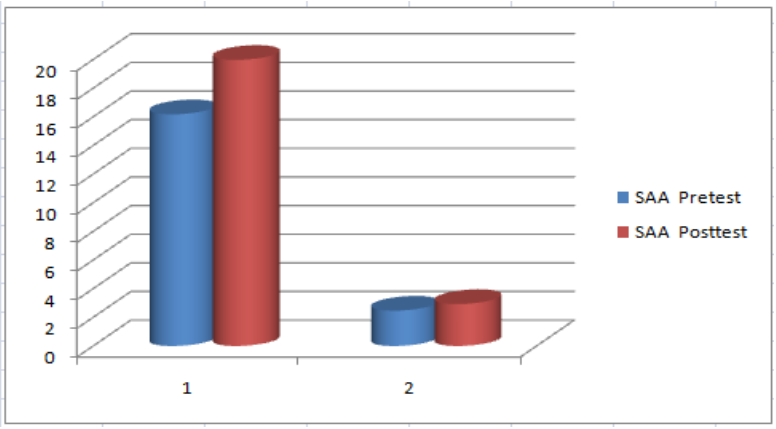
Table showing the differences in Mean, Standard Deviation and *t*-Value Between students' achievement on the usage of Geometer's Sketchpad in learning geometry before and after the intervention programme.

Description	Sample			*t*-value	Significance level
	Size(n)	Mean(m)	Standard Deviation		
SAA Pretest	20	16.18	2.469	6.819	Significant at 0.05 level
SAA Posttest	20	19.98	2.931		

df = 19, t table value = 2.09

Graph -3

Graph showing students' achievement on the usage of Geometer's Sketchpad in learning geometry before and after the intervention programme.



Interpretation:

The calculated mean value of SAA Pretest scores of students' achievement is 16.18 and S.D value is 2.469 at 39 df. The mean value of SAA posttest scores of students' achievement is 19.98 and the S.D value is 2.931 at 19 df. The obtained t-value at 19 df is 6.819, the table t value at 19 df is 2.09 at 0.05 significance level; $p > 0.05$ .Since the obtained t-value is less than the table value at 0.05 significance level; $p > 0.05$.

Hence, research Hypothesis is accepted and null hypothesis is rejected, which implies that there is a significant difference in the students' achievement on using the Geometer's Sketchpad in learning geometry before and after the intervention programme.

Findings and Discussions

- **There is a significant difference in the perception of students' towards the use of Geometer's Sketchpad before and after the intervention programme.**

  The Geometer's Sketch pad shows a lot of discovery and exploration, problem solving and reasoning where the student can learn easily and enjoy the learning through Geometer's Sketchpad .Mathematics thus becomes more enjoyable for students.

- **There is a significant difference in the attitude of students' towards the use of Geometer's Sketchpad before and after the intervention programme.**

Students who learned using organization of activities by the use of the Geometer's Sketchpad Programme as media had lower attitude towards mathematics learning than those organization of activities using conventional method. The organization of activities using the Geometer's Sketchpad Programme engaged the students actively in mathematics.

There is significant difference in the achievement of students' towards the use of the Geometer's Sketchpad before and after the intervention programme.

The significant differences in the achievement of the experimental group as compared to control group indicate that the Geometer's Sketch pad shows promising implications for the potential use of Geometer's sketchpad in learning geometry at high school level.

Educational implications

- It is a tool for mathematical visualization, generalization, conjecturing, and problem-solving.
- It helps in creating a learner-centered and open-ended learning environment.
- It provides more interactive and hands-on learning activities.
- It helps the students in upgrading their mathematical abilities and attain higher mathematical achievement
- It assists in boosting higher order thinking skills and confidence.
- Students should develop positive attitude towards learning of Geometry and other topics of mathematics with the usage of Geometer's Sketchpad.

Recommendations

- Encourage teachers on the potential usage of Geometer's Sketchpad as an effective tool in learning mathematics.
- It should be used to make classrooms more active and dynamic, as well as to enable students to explore realistic applications where they can focus on important concepts rather than routine calculations

- The school authorities should create an enabling environment for teachers to access the Geometer's Sketchpad to enable them teach geometry effectively so as to enhance the interest of students and reduce boredom.

Scope for the further study

- The study can be taken up in an extensive manner in various schools of Telangana i.e., CBSE Schools, ICSE Schools
- Can be used on a bigger sample size so that the findings can be generalized.
- Geometer's Sketchpad can be used for the subjects such as arts, sciences, and in photography.

Conclusion

The results of this study revealed that using Geometer's Sketchpad as a teaching tool improved student's perception, student's achievement in mathematics. This approach is easy to adopt, practically acceptable for learners to use, keep them actively engaged. The result of this study is that the addition of this software had increased students' perception and achievement in mathematics as well as enhanced their understanding of mathematical concepts. This observation can therefore encourage classroom teachers and even curriculum developers of the potential use of the geometer's sketchpad as an effective tool in learning geometry.

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Spiritual Intelligence as a correlate of Pedagogical Competence of Teachers

Dr. Sarah Thomas (Guide)
B. Ranganayaki (Research scholar)

Abstract:

Spirituality is the ultimate self – realization of being good to everything in the universe. Spiritual intelligence helps to enhance harmonious relationships with other living things and to have directions and purpose which includes morals, ethics and values.

Teachers or Gurus play an important role in moulding young minds. Teachers' pedagogical competence is the ability of planning, managing implementing and evaluation of the learning outcomes of learners. Teachers of present days have to constantly impart knowledge about values of life, which are offshoots of the components of spiritual intelligence.

This study is focused on assessing the Spiritual Intelligence and Pedagogical Competence of teachers with respect to gender and types of management of the school where they work. The study also analyse the relationship between spiritual intelligence and pedagogical competence of teachers. Descriptive Survey method is followed and the information is collected using a standardized self – constructed tool. The sample for the present study comprises of 100 high school teachers selected using stratified random sampling method. The present study throws light on the significance of spiritual intelligence as a correlate of pedagogical competence of teachers.

Introduction:

The students of recent times face emotional as well as psychological stress which hampers their physical and mental abilities. Teachers of the present era should be ready to accept learners from different backgrounds and should be ready to concentrate and counsel them along with their duty of imparting knowledge. The teachers should make students understand that failures are stepping stones to success and importance should be given on the quality of achievement and not on the

number of attempts taken. This can be done quoting examples of invention and discovery, for instance Edison could invent electric bulb in his 10000th attempt and he said that he learnt through this task how to avoid 9999 mistakes in finding the electric bulb. The teacher should understand the diversified needs and the problems of the students.

The Organisation for Economic Co-operation and Development (OECD) focuses on the need to provide high quality education for all, where teachers and their proven competence play a vital role (OECD, 2001; 2005). It is proven that students' performance levels are higher when teachers' competence has been proven (Goldhaber & Brewer, 2000; Darling – Hammond, Berry & Thoreson, 2001, Goldhaber & Anthony 2004, Vandervoort et al., 2004). The bloom and gloom of technology hacked human values, ethics, morality along with the reduction of concentration and memory of facts and concepts of the present century students.

'To establish positive teacher-student relationships, classroom management strategies play a very important part, which in turn, could enhance the students' academic achievement and their social, emotional and behavioral performance.'(Wang, Haertel, & Walberg, 1993). Often these are focused upon, neglecting the spiritual domain of the individual.

Robert Emmons defines spiritual intelligence as "the adaptive use of spiritual information to facilitate everyday problem solving and goal attainment."Vineeth V. Kumar and Manju Mehta defined spiritual intelligence as "the capacity of an individual to possess a socially relevant purpose in life by understanding 'self' and having a high degree of conscience, compassion and commitment to human values." Cindy Wigglesworth defines spiritual intelligence as "the ability to act with wisdom and compassion, while maintaining inner and outer peace, regardless of the circumstances."

The scenario of the present school expects the teachers to use their strategies, techniques and ability to channel every child's all round development along with academic excellence. The activity based education helps the child to invade knowledge but teacher as a facilitator should

able to impart values, principles, ethics of life. The value based questions are incorporated in the lesson so as to help the children to imbibe values of life and in turn of environment.

The students imitate teachers knowingly or unknowingly, hence teachers play a vital role incorporating values and morals. The present study examined the relationship between spiritual intelligence and pedagogical competence of high school teachers belonging to government and private schools of Ranga Reddy District of Telangana State.

Objectives of the Study:

1. To analyze the relationship between spiritual intelligence and pedagogical competence of teachers.

2. To assess the spiritual intelligence of teachers with respect to the school management.

3. To assess the spiritual intelligence of teachers with respect to the gender.

4. To assess the pedagogical competence of teachers with respect to the school management.

5. To assess the pedagogical competence of teachers with respect to the gender.

Hypotheses of the Study:

H1. There is a significant relationship between spiritual intelligence and pedagogical competence of teachers.

H2. There is a significant difference in the spiritual intelligence of government and private teachers.

H3. There is a significant difference in the spiritual intelligence of male and female teachers.

H4. There is a significant difference in the pedagogical competence of government and private teachers.

H5. There is a significant difference in the pedagogical competence of male and female teachers.

Variables of the Study

Variables are the conditions or characteristics that the experimenter manipulates, controls or observes. The variables are divided into independent and dependent variable.

Dependent variable

The dependent variable in the study is Pedagogical Competence comprising of components like Personality, Subject Matter Expertise, Professional Competence, Teaching Style, Classroom Management style and Relational Competence with students.

Independent variable

The independent variable of this study is Spiritual Intelligence comprising of components like Critical Existential Thinking, Personal Meaning Production, Grace, Truth and Transcendence.

Sample:

In this present study the sample was selected using stratified random sampling technique. The researcher selected 9 schools through stratified random sampling out of many schools in Secunderabad city. The sample includes 100 high school teachers out of which 50 teachers are from private schools and 50 teachers from government teachers. Out of 50 government school teachers, 32 are female and18 are male teachers and among the 50 private school teachers 34 are female and16 constitute male teachers.

Tool:

The tool employed in the present study included a self constructed questionnaire with 50 closed ended questions, 25 questions to assess spiritual intelligence and the remaining 25 to assess pedagogical competence of teachers. The questionnaire framed covers 5 components for spiritual intelligence and 6 components for pedagogical competence. The statement had to be scored on 5 point Likert scale with the options strongly disagree, disagree, neutral, agree and strongly agree, giving scores 1 to 5 respectively.

Methodology:

The study is descriptive in nature trying to identify the relationship between spiritual intelligence and pedagogical competence of high school teachers in Ranga Reddy district. The sample of the study comprises of high school teachers belonging to government and private schools. From the total number of schools, 9 schools were randomly selected out of which 5 are government schools and 4 are private schools.

The questionnaire was distributed to the high school teachers of government and private schools. The purpose of collecting data was explained to the management and teachers and requested them to be honest while answering the questionnaire.

The scores obtained for spiritual intelligence and pedagogical competence was tabulated in the excel worksheet component wise and then the total of each variable is calculated and tabulated. The tabulation is done by segregating government and private teachers based on gender. The scores obtained for both spiritual intelligence and pedagogical competence possessed by the teachers was tabulated.

The statistical technique used in this study include mean, standard deviation, independent t – test and Pearson's Correlation coefficient to understand the significant differences in spiritual intelligence and pedagogical competence of teachers with respect to gender and management and to find the correlation between spiritual intelligence and pedagogical competence of teachers. The level of significance was fixed at 5 percent.

Hypothesis 1:

Research Hypothesis:

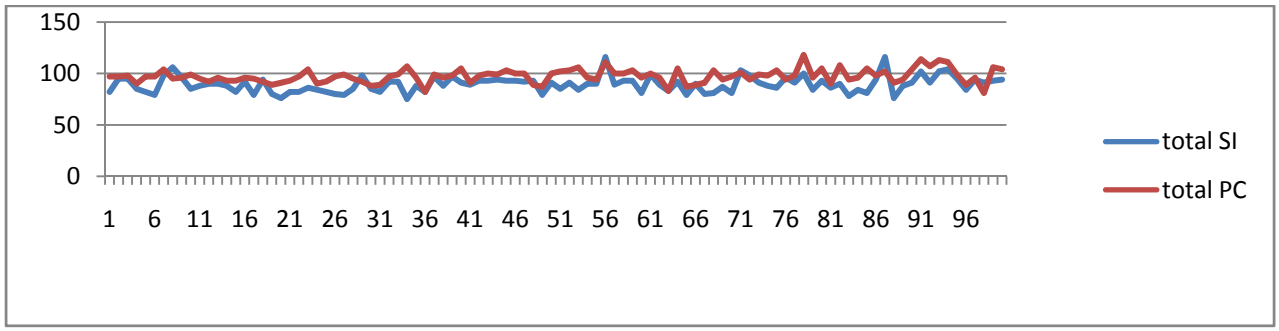
H1: There is a significant relationship between spiritual intelligence and pedagogical competence of teachers.

Table 1 Correlation between Spiritual Intelligence and Pedagogical Competence of High School Teachers using Pearson Correlation Coefficient – r

	Sample			*r*-value
Description	Size(n)	Mean(m)	Standard Deviation	
Spiritual Intelligence	100	89.36	7.764	0.452
Pedagogical Competence	100	97.48	6.69	

From **Table 1** the r – value, the correlation coefficient is 0.452 denotes that there exists a moderate correlation between spiritual intelligence and pedagogical competence of high school teachers with respect to the sample of the study. Therefore, the research hypothesis is accepted and the null hypothesis is rejected. As the r-value is + 0.452, it clearly indicates, a positive moderate correlation between spiritual intelligence and pedagogical competence of high school teachers.

Graph 1 Correlation between Spiritual Intelligence and Pedagogical Competence



Hypothesis 2:

Research Hypothesis

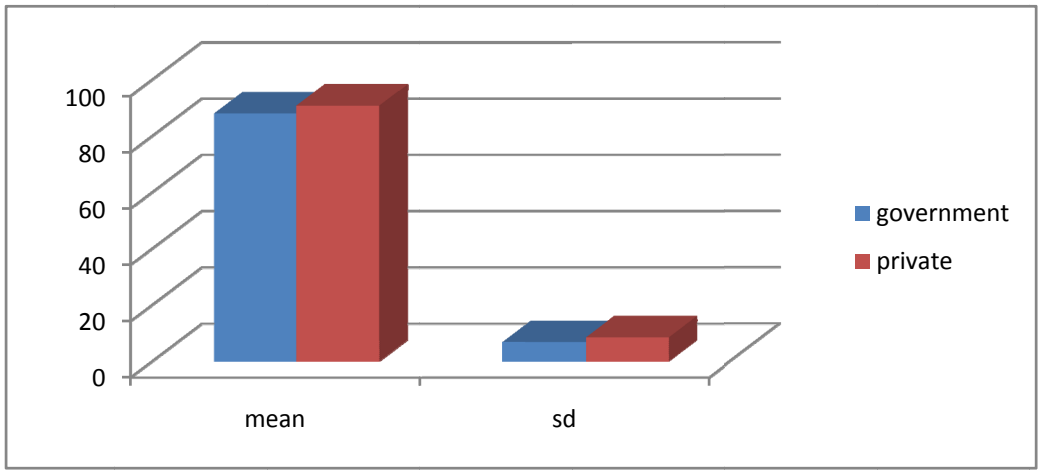
H2: There is a significant difference in the spiritual intelligence of government and private teachers.

Table 2 Differences in Mean, Standard Deviation and *t*-Value between spiritual intelligence of government and private teachers

Description	Sample			*t*-value	Significance level
	Size(n)	Mean(m)	Standard Deviation		
Government	50	87.98	6.769	1.797	Not Significant at 0.05 level
Private	50	90.74	8.490		
				df = 98, t - table value = 1.984	

From **Table 2** The Mean value (M=90.74) obtained for the spiritual intelligence of private School teachers is greater than the mean value (M=87.98) obtained for government school teachers. The private school teachers (SD=8.490) is higher when compared to government school teachers (SD=6.769). The obtained t-value (df =98) is 1.797 which is less than the table value t (98) = 1.984; $p < 0.05$. Therefore, the null hypothesis is accepted and research hypothesis is rejected. It clearly indicates that there is no significant difference between the spiritual intelligence of private school teachers and government teachers.

Graph 2 Comparison of spiritual intelligence of government and private teachers



Hypothesis – 3

Research Hypothesis

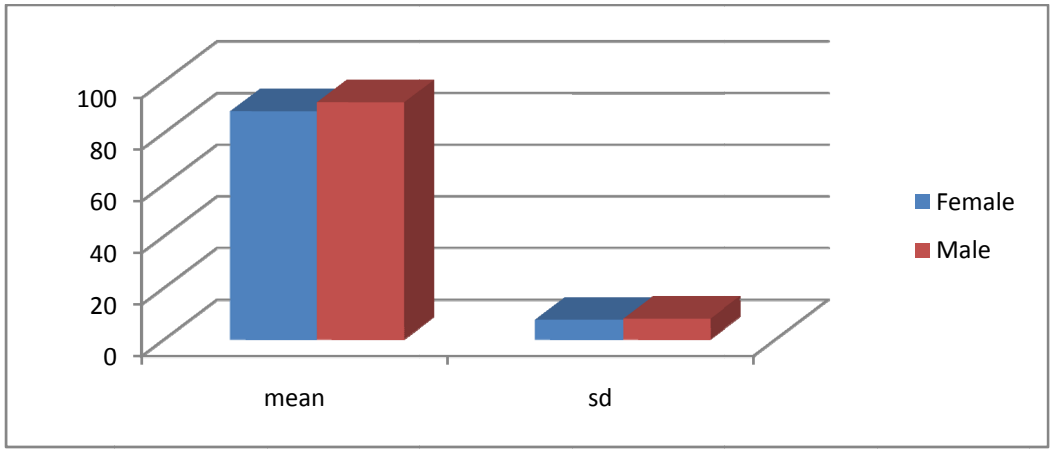
H3: There is a significant difference in the spiritual intelligence of male and female teachers.

Table 3 Differences in Mean, Standard Deviation and *t*-Value between spiritual intelligence of male and female teachers

Description	Sample			*t*-value	Significance level
	Size(n)	Mean(m)	Standard Deviation		
Female	66	88.18	7.483	2.153	Significant at 0.05 level
Male	34	91.65	7.897		
				df = 98, t - table value = 1.984	

From **Table 3** The Mean value (M=91.65) obtained for the spiritual intelligence of male teachers is greater than the mean value (M=88.18) of female teachers. The male teachers (SD=7.897) shows the difference as compared to female teachers (SD=7.483). The obtained t-value (df =98) is 2.153 which is more than the table value t (98) = 1.984; $p < 0.05$. Therefore, the research hypothesis is accepted and null hypothesis is rejected. It clearly indicates that the spiritual intelligence of male teachers is greater than the female teachers.

Graph 3 Comparison of spiritual intelligence of male and female teachers



Hypothesis – 4

Research Hypothesis

H4:There is a significant difference in the pedagogical competence of government and private teachers.

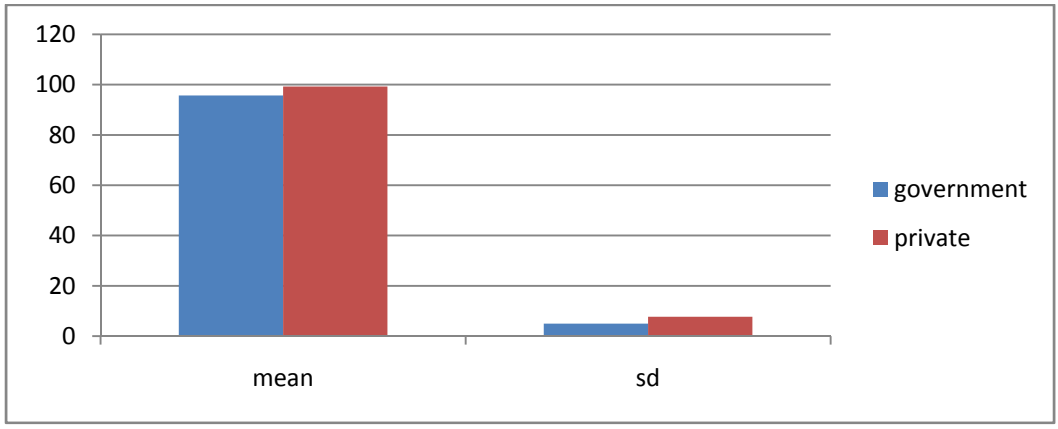
Table 4 Differences in Mean, Standard Deviation and *t*-Value between the pedagogical competence of government and private teachers

Description	Sample			*t*-value	Significance level
	Size(n)	Mean(m)	Standard Deviation		
Government	50	95.68	4.963	2.781	Significant at 0.01 level
Private	50	99.28	7.693		

df = 98, t - table value = 2.626

From **Table 4** The Mean value (M=99.28) obtained for the pedagogical competence of private teachers is greater than the mean value (M=95.68) of government teachers. The private teachers (SD=7.693) is higher when compared to government teachers (SD=4.963). The obtained t-value (df =98) is 2.781 which is more than the table value t (98) = 2.626; $p < 0.01$. Therefore, the research hypothesis is accepted and null hypothesis is rejected. It clearly indicates that the pedagogical competence of private teachers is greater than the government teachers.

Graph 4 Comparison of the pedagogical competence of government and private teachers



Hypothesis – 5

Research Hypothesis

H5: There is a significant difference in the pedagogical competence of male and female teachers.

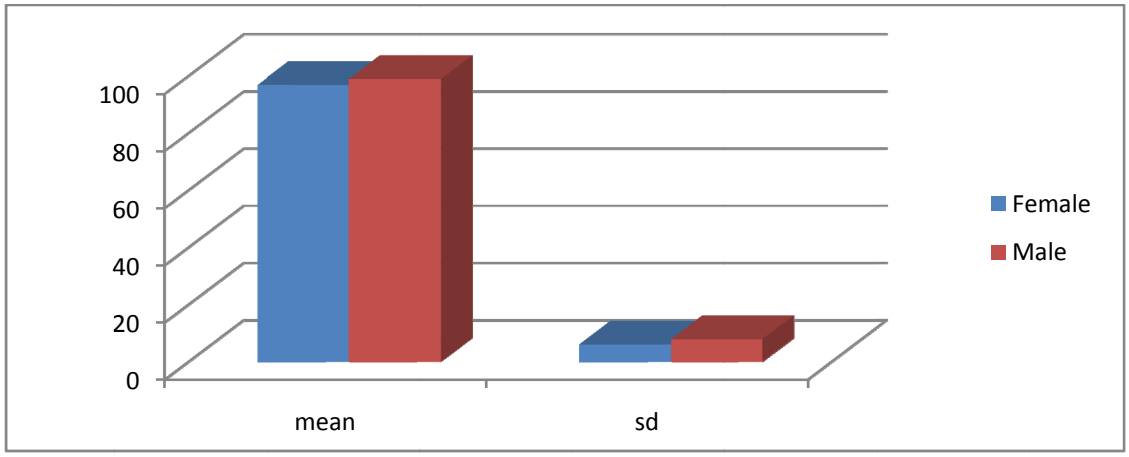
Table 5 Differences in Mean, Standard Deviation and *t*-Value between pedagogical competence of male and female teachers

Description	Sample			*t*-value	Significance level
	Size(n)	Mean(m)	Standard Deviation		
Female	66	96.74	5.939	1.547	Not Significant at 0.05 level
Male	34	98.91	7.848		

df = 98, t table value = 1.984

From **Table 5** The Mean value (M=98.91) obtained for the pedagogical competence of male teachers is slightly greater than the mean value (M=96.74) of female teachers. The male teachers (SD=7.848) is higher when compared to female Teachers (SD=5.939). The obtained t-value (df =98) is 1.547 which is less than the table value t (98) = 1.984; $p < 0.05$. Therefore the null hypothesis is accepted and research hypothesis is rejected. It clearly indicates that the pedagogical competence of male teachers and female teachers shows no significant difference.

Graph 5 Comparison of the pedagogical competence of male and female teachers



Findings of the Study:

- There is a significant influence of spiritual intelligence on pedagogical competence of high school teachers
- There is no significant difference in the spiritual intelligence of government and private high school teachers.
- There is a significant difference in the spiritual intelligence of male and female high school teachers.
- There is a significant difference in the pedagogical competence of government and private high school teachers.
- There is no significant difference in the pedagogical competence of male and female high school teachers.

Limitations of the Study:

- This study is limited to selected components of spiritual intelligence like Critical Existential Thinking, Personal Meaning Production, Grace, Truth and Transcendence.
- This study confined itself to the chosen components of Pedagogical Competence like Personality, Subject Matter Expertise, Professional Competence, Teaching style, classroom management style and Relational Competence with students.
- The sample size taken for research study is limited to only 50 private and 50 government teachers.
- The data collection was delimited to only 9 schools of Hyderabad.
- The study is confined to correlate the pedagogical competence and spiritual intelligence of teachers.
- The time allotted for research study is limited.

Educational Implications of the Study:

Practical implications at individual level:

The teachers should improve their spiritual quotient through reading spiritual and value education books, biographies of eminent persons and involve themselves in various social

activities. The teachers should understand the importance of spiritual intelligence so that they can incorporate those in their teaching strategies. The teachers should live as good examples of spiritually efficient persons so that the students follow their footsteps.

Practical Implications at institutional level:

The results of the study would help the school administration to identify the importance of incorporating the spiritual values through activities like yoga, meditation, value education so that students understand the real meaning and purpose of life in this techno-fast world. The school administration can plan to incorporate activities and training to enhance spiritual quotient among teachers and other school staff which helps to cherish their personal and professional life. The school administration can assess the spiritual level of teachers, staff and students when recruiting and admitting them.

Practical implications at National and State level:

The Policy makers has to emphasize on Spiritual values which helps to take up things or thoughts to the potential beyond any actual expression without narrowness, exclusiveness, prejudice which is the essential spirit behind all great religions. The spiritual quotient should be imbibed in schools and colleges by way of introducing it in every aspect of the curriculum so that the students will get the actual education to live a peaceful and prosperous life.

Conclusion

The study of spiritual intelligence and pedagogical competence helps the teachers, educators and school administrators to improve the standards of education. The emphasis on these components helps the teachers to construct strategies for efficient teaching as well as personality development along with character transformation of students. The spiritual intelligence nurtures parents, teachers, counselors, and social workers to develop good leadership qualities rather than being authoritative boss. The importance of spiritual intelligence integrates intra and interpersonal intelligences and helps teachers to educate students to commitment, awareness, strong will, faith, reflecting one's thoughts with deepest motivations and dutifulness. The teacher who is spiritually efficient can handle the emotional and spiritual traits of students and equip them to evolve into a wholesome personality which is the need of present scenario.

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Guidance through Mentorship to Secure the Psycho-social Well being of B.Ed Teacher Trainees

Ms. Irene C Pereira (Assistant Professor)
Dr. Sr. Marry Kutty PJ (Principal)

Introduction to the Institution

The 'Pedagogy of the Heart' is an educational philosophy that germinated in the 18th century in *France*. It is a philosophy of dreams and determinations, hopes and aspirations, equality and fraternity, love and peace – all encapsulated within the master seed. Thereafter, saplings in the form of educational institutions mushroomed all over the world transported by the nurturing and toiling hands of the congregation of the Sisters of St. Ann of Providence. One such towering edifice of their courage, hardship and commitment to teacher education is St. Ann's College of Education nestled in Secunderabad the center of the State of Telengana. The college seeks to emancipate the 'self' of minority women through the philosophy of its founders' (Carlo Tancredi de Barolo and Guilia Falleti de Barolo)- ***Pedagogy of the Heart*** incarnating Gandhiji's vision of education involving the head, heart and hand**.** Focusing on the all-round development through its enriching B.Ed. and M.Ed. programmes, it aims to transform the heart manifesting in rational, emotional and social maturity.

Pausing at the threshold of the 21st century the College has a well-defined yet evolving Annite culture focusing on the all-round development of self of which psycho-social wellbeing is the nucleus.

Academic pressure in addition to the existing socio-economic pressures can lead to mental freezing. Rationality and hope can give way to despair and self-harming thoughts. In order to help teacher trainees find a balance between their academic and social-cultural responsibilities the College developed an infrastructure to secure their psychosocial wellbeing. It initiated a mentorship practice that has a thawing effect in that it provides reinforcement through seniors, peers, faculty and pastoral care. This entrenched infrastructure now reflects as the College's best practices, namely (1) guidance through mentorship; (2) diagnostic assessments; (3) therapeutic interventions; (4) counseling services. The most promising practice appears to be the guidance through tiers of mentorship approaches - the Big Sister, Peer-to-Peer, Surrogacy and Pastoral Care.

This research paper is an attempt to evaluate its tiered mentoring approach and further enhance it in light of the feedback received from teacher trainees.

Objectives

The objectives of the study are to (a) ascertain the viability of the mentorship practice in securing the psychosocial wellbeing of the student-teachers; (b) investigate the effectiveness of the guidance through mentorship and (c) solicit recommendations to further enhance it.

Background

In Greek mythology Ulysses entrusts his son Telemachus to the tutelage of Mentor, his trusted adviser or counselor (Clutterback, 1991). Since then, the word mentoring has evolved to include individuals responding to queries, individuals providing moral support to trained counselors depending on the complex needs of the mentee. (Megginson & Clutterbuck 1995) describe mentoring as "help by one person to another in making significant transitions in knowledge, work or thinking."

In academic settings 'mentor' is used interchangeably with academic adviser. But mentoring is more than just academic advising. Mentoring in higher education is supporting and encouraging people to manage their own learning in order to maximize their potential, develop skills, improve performance and become the person they want to be (Parsloe 1992).

Mentoring is widely used both in organizations as well as in educational settings. The research on the role of mentoring in nurturing student aspirations, confidence building, and finding a balance between professional and personal life is encouraging (Balu, 2014).

Student challenges are no mystery. Poverty, balancing between study and work, managing relationships, time management, poor communication skills, lack of confidence, and lowlevels of self-efficacy are all pressure points that give rise to emotional turbulence. Mentoring is most cost-effective and beneficial prescription that empowers students to come up with workable solutions. But, how many of our students will discuss problems with others?

Over the years the faculty and management observed that students in the initial stages were reluctant to approach them for help to deal with academic concerns or other problems. Students preferred to discuss their problems with their seniors and their classmates instead. This led the

College to develop a tiered mentoring approach involving multiple mentors which is now an integral part of the College's support system. Under this approach mentoring is seen as a dynamic and holistic learning relationship that encourages and promotes reflection, growth, problem solving, and self-reliance.

Tiered Mentoring Approach

The benefits of mentoring potentially accrue to all - mentor and mentee and the College. Fig 1 is an illustration of the approach implemented in the College over the last few years. Although the model devised appears simplistic, the results have been astounding. The College's drop-out rates are <.5% and the pass rate is >98%.Trainee teachers have shown increased resilience and maturity in handling challenging situations.

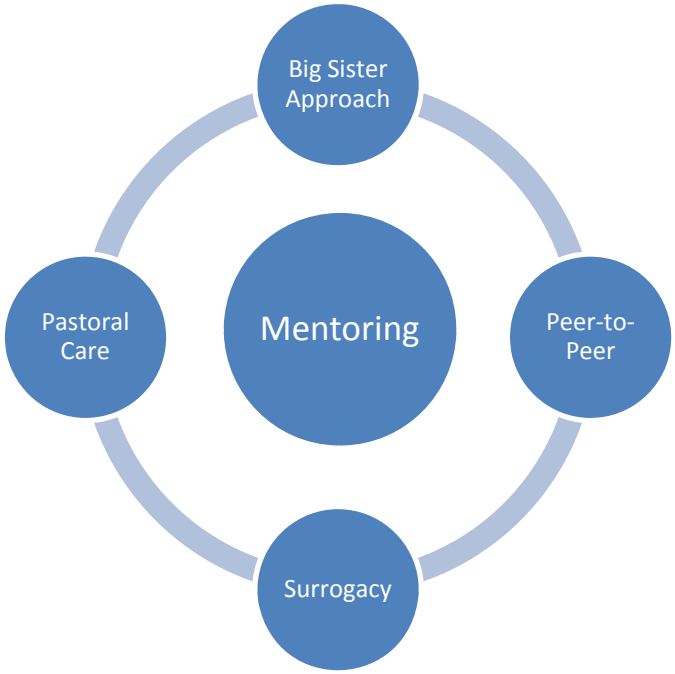

Fig. 1: SACOE Mentoring Approach

What is apparent from Fig 1 is that every teacher trainee has the opportunity to seek guidance and assistance from multiple mentors with diverse knowledge, interests, specialization, and individual personality. At the start of the B.Ed Programme the incoming student teachers are given an orientation of the SACoE Mentoring approach to increase awareness among them of the College's support system. Thus instead of becoming disheartened they would view B.Ed as an opportunity to invest in the self and the community.

A brief explanation of each tier in the four tiered mentoring approach follows.

1. Big Sister Mentoring Approach

This approach is initiated with the intent of allowing incoming B.Ed trainee teachers to forge a bond with the senior students and learn from their past experiences. Each senior student is paired with an incoming junior student. The role of the senior student mentor as envisioned is to develop the mentee through sharing of information, knowledge, class notes, expertise, and experience. The first meeting is an ice breaking session and is guided by an assigned faculty to oversee the logistics. Pairs meet, greet and exchange contact information thus setting the pace and tone of this new relationship built on mutual trust and respect. Subsequently, the parties communicate regularly to seek information, exchange ideas, air concerns, and obtain academic advice. Seniors hold regular lesson planning workshops, tutorials, debates, and brain storming sessions.

2. Peer-to-Peer Mentoring Approach

New entrants to professional courses often display symptoms of anxiety and stress. Some of it already inherent from their individual circumstances is further exacerbated by the challenges of their new environment and in teacher education it is no different. Friendships are forged and thereafter classmates become part of the inner circle of support. Classmates help each other with assignments, exchange class notes, evaluate each other's work, go over difficult topics and concepts, and lend a sympathetic ear to personal problems. The College promotes the concept of learning through social negotiation put forward by Vygotsky (1978) by creating ample opportunities through project work, group assignments, group assembly, art and drama, social clubs, internships, celebrations etc. Peer-to-peer mentoring increases interpersonal skills equipping students to analyze practical problems and produce culture appropriate solutions (Clarkson & Luca, 2002). This kind of mentoring accommodates diverse trainee teachers in need of individualized attention.

3. Surrogacy

The term 'surrogacy' is used to mean a 'second mother' who provides a mentee with "knowledge, advise, counsel, challenge, and support in the protégé's pursuit of becoming a full

member in a particular profession" (Johnson, 2007). In teacher education there is an expectation that mentees will benefit from the faculty contacts and networking. Faculty mentoring is also known to facilitate professional autonomy through critical reflection (Harrison, Lawson & Wortley 2005).

Each student is assigned a faculty member as a mentor at the beginning of the first semester. This mentor-mentee relationship continues until the mentee graduates. The faculty mentor monitors the mentees attendance, academic performance, co-curricular participation and community engagement keeping a close watch on the mentee's overall welfare. Faculty advisers have regular meetings with their mentees to address their academic goals and concerns. Unscheduled meetings with faculty advisers are also common. Faculty members liaise with each other and obtain feedback on mentees' progress, particularly those who appear to be lagging behind.

4. Pastoral Mentorship Approach

No support system is complete without feeding the spiritual hunger of student teachers. Decisions guided by spiritual principles are robust. The Bible sets a precedent for pastoral mentorship. There are many examples of mentorship in the Holy Scriptures. Elijah mentored Elisha for six years imparting his experiences, knowledge and wisdom laying the basis for Elijah's own successful career as a Prophet. Naomi mentored Ruth teaching her how to adapt to laws, expectations and customs of another nation. Jesus spent three and a half years of his ministry on Earth mentoring to his disciples teaching how to: love one another, repent, pray, forgive and spread the good news of new beginnings (Matthew 28: 19-20). Our student teachers are shepherded by the Principal through the pastoral mentorship approach modeled on the biblical teachings of Jesus. The College curriculum is erected on Christian values of honesty, integrity, love, hope, service, morality, simplicity, peace and truth. Pastoral mentorship evokes a sense of belongingness in students (Baumeister, 1995).

Daily assembly, religious celebrations, engagement in charitable causes, leadership programmes, psychological and self-awareness workshops, academic and personal counseling are glimpses of the kind of pastoral care offered by the College to make students more resilient to life challenges.

Coping strategies such as reframing thoughts through self-introspection, meditation, self-acceptance and expansion of the self collectively strengthen student self-efficacy.

The SACoE mentoring approach thus becomes the backbone of the support system devised by the College to ensure trainee teachers' psycho-social wellbeing.

Methodology

In order to ascertain the viability of the mentorship practice in securing the psycho-social wellbeing of the student-teachers, investigate the effectiveness of the guidance through mentorship and obtain feedback from the student teacher using the mentoring provisions, a questionnaire was developed using a five point Likert scale with anchors1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. The questionnaire was administered by email to 80 teacher trainees from the first year B.Ed program (Batch 2018-2020). Students were asked to rate to the extent in which they strongly agreed/disagreed to the scaled items. Thereafter, the responses were collated and mean scores obtained.

Findings

Of the 80 students, only 20 responded to the questionnaire. Overall the College's four tiered mentorship programme was viewed as a major contributor in building self-efficacy. It strengthened them psychologically and academically. It made them better prepared to cope with the demands of the B.Ed program. Their academic and career goals became clearer paving the way for strategizing their professional and personal growth. From overtly stress individuals, student's teachers metamorphosed into rational thinkers able to deal with stressful situations and avert becoming mentally iced. Trainee teachers felt empowered to confront challenges and find practical solutions to problems. Talking to multiple mentors unlocked a wealth of academic resources beneficial to both their academic progress in the B.Ed program and future career aspects. They described mentoring as the hidden hand that led them out of the tunnel of despair into a world of self-discovery and transcendental enlightenment.

A summary of the participants' responses are presented below.

1. Big Sister Mentoring Approach

95 % of the students used this approach to the maximum when it came to academic help. Students did not hold back in seeking out their big sisters to clarify academic doubts related to

assignments, project work, developing teaching aids, and lesson plans. 55% of the students strongly agreed and 45 % of the participants agreed that senior student mentors were able to fill in the gaps in areas they were less skillful. Less than 1% of the trainee teachers thought that their senior student mentors lacked the skills to address their concerns. 99% of the students were impressed by the big sisters' helpful and caring nature. 75 % of the trainee teachers strongly disagreed that talking to their seniors did nothing to lower their stress levels.

2. Peer-to-Peer Mentoring Approach

The results are consistent with past research that peer support is a significant contributor to an individual's success. 50% of the student teachers shared their academic and personal problems with their close friends in class. 50% indicated that they did not share all of their concerns with their classmates. The participants have just begun their second semester. Perhaps as time passes and trust develops, students will be ready for full disclosure. 60% strongly agreed and 40% agreed that talking to their classmates had positively influenced the way they approached their learning. 100% of the students agreed that their classmates helped them find resources instrumental to assignment completion. Again 100% strongly agreed that select classmates were responsive to their individual needs. 75% of the participants strongly agreed that they could talk to their close classmates about things that they would not necessarily discuss with their seniors, lecturers or the Principal.

3. Surrogacy

70% of the students strongly agreed and 30% agreed having easy access to their academic lecturer-mentor to discuss their academic goals. 100% of the students strongly agreed that regular meetings with their academic advisor helped them learn independently. 65% of the students strongly agreed and 35% agreed that feedback from the academic lecturer has helped them improve their social/communication skills. 25% of the students strongly agreed and 65% agreed feeling their grades would improve as a result of the academic mentoring. 10% of the students were neutral. It is possible that some of them realized that grades were dependent on student preparation and performance in exams. 100% of the participants strongly agreed that they had gained good insight into studying at a professional degree level through academic mentoring.

4. Pastoral Mentorship Approach

70% of the students strongly agreed and 20% agreed that pastoral mentorship they received from the Principal has helped them build balanced relationships. 90% of the trainee teachers strongly agreed and 10% agreed that the pastoral guidance helped them stay connected with their spiritual needs. 85% of the students strongly agreed that being able to share their problems with the Principal helped them deal with their emotional stress. 75% of the trainee teachers strongly agreed and 25% of the students agreed that the sound advice and guidance their received from the Principal boosts their confidence levels. 70% of the students strongly agreed and 30% of the students agreed that pastoral support made them feel a part of the College.

Limitations

Due to time constraints, the student teachers had a small window of time to respond to the questionnaire. These findings are therefore based on a small sample size of 20 participants. The questionnaire is more quantitative with little or no provision for comments and suggestions.

Recommendations

Based on the outcome of the study, this tiered mentoring approach or any variation of the approach is a valuable mentoring approach to implement in B.Ed colleges to ensure the psycho-social well-being of students. It provides students with a family-like environment with a strong support system. Within this environment students have access to unlimited and unconditional emotional, moral, and academic support. Students benefit from the vast reservoir of information and transfer of knowledge and can look forward to a meaningful future made possible through self-efficacy.

Suggestions

In hindsight it is felt that as the statements in the questionnaire were specific requiring the trainee teachers to agree, disagree or remain neutral. Quantitative research does not generally allow for freedom of expression and insight. Although, this study has established the viability of the mentorship practice in securing the psycho-social wellbeing of the student-teachers as well as the effectiveness of the guidance through mentorship, it is suggested that the questionnaire be revised to allow for qualitative feedback from student teachers in order to harness the direction for enhancement.

Conclusions

The tiered mentoring approach is a cost-effective way to ensure the holistic development and mental wellbeing of teacher trainees. In this respect, the College continues to leap forward undeterred in its efforts to ensure graduating trainee teachers who will carry the Annite beacon into classrooms and become the Annite Mentor that the College's mentoring practice envisioned.

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Study on Continuous Professional Development of In-service Teachers

Dr Ruma Roy (Guide)

Ahmedi Unissa Begum (M.Ed student)

Abstract

This study was conducted to recognize the greater need for teachers to continuously upgrade their knowledge, skills, personal and professional qualities to cope with the new challenges and demands of 21st century. In this regard the study focuses on different background of teachers pertaining to rural, urban, more-experienced (>5 years) as well as less-experienced (<5 years) in-service teachers and their different pathways to continuous professional development (CPD). The researcher conducted a survey on 60 in-service teachers (30 from 2 rural schools of Nagarkurnool District and 30 from 2 urban schools of Hyderabad). A self-constructed questionnaire was distributed after conducting a pilot study, later the data was gathered from both rural and urban teachers. The data was analysed by applying Mean, Standard deviation and t-test. The results of this study show that the CPD of rural teacher is significantly greater than the CPD of urban teachers and the CPD of teachers with greater than five years experience and less than five years of experience is almost equal. The results also suggest that rural teachers are keener to participate in CPD programmes than the urban teachers and teachers with greater than five years experience and less than five years experience are almost equally concerned to upgrade their knowledge and skills through CPD.

Key Words: Continuous Professional Development (CPD), Rural, Urban

Introduction:

The central and state governments along with NCERT and SCERT have initiated several Continuous Professional Development programmes across the country in order to raise the educational standards as well as the quality of education in India.

The government of Telangana is focusing on different schools in rural and urban areas by conducting different ongoing (CPD) programmes for teachers to equip them continuously to improve their teaching skills by acquainting themselves with new methods and other educational changes. Different ongoing sessions of workshops, conferences and seminars transform

tremendous knowledge and pedagogical skills in teachers which ensure their abilities to stay relevant and upgraded. Apart from such ongoing sessions, there are various other ways of professional development which include Collaborative learning among the members of a work team, Independent Reading and Research, Experimenting with new ideas and resources etc.

Despite these opportunities some teachers do not make use of them and remain with limited knowledge and skills, in contrary some teachers do not have the privilege to get such opportunities. For instance rural teachers may lack opportunities to attend seminars, symposiums, conferences etc similarly lack of resources such as no access to use internet service, or sometimes it may be due to limited knowledge of teachers which restrict them to be limited with their professional skills.

Rural school system is historically underserved not only because of their geographical isolation from other teachers but also by their isolation from research institutions (Williams, Gold, and Russell, 1995). Due to this isolation teachers in rural areas are often out of touch with optimal teaching strategies because they are not able to keep abreast of the most current research (Stephan, 1994).

Similarly the teachers who are novices to the profession may have different perception to upgrade their knowledge and skills to those who have years of experience in teaching. In this account Firman, H. (2018). '*Urban-Rural Disparity of Middle School Teachers Professionalism and Teachers' Professional Development in West Java, Indonesia* 'found there is a serious urban-rural disparity in professionalism and teachers' professional development. Professionalism of lower secondary teachers in rural schools is less developed compared to urban schools and there are less teachers' development programmes for rural schools to enhance their professionalism. keeping in view of the various results of previous literature the researcher has formulated the following objectives were formulated.

Objectives:

- Identify different modes or components of CPD.
- Acquaint the most commonly used component of CPD.
- Contrast the urban and rural teachers' CPD pathway.
- Analyse the CPD of more-experienced and less-experienced teachers.

Hypotheses:

H_1: There is a significant difference among the continuous professional development of rural and urban teachers.

H_2: There is a significant difference among the continuous professional development of less-experienced and more- experienced in-service teachers.

Variables: Based on the nature of study the respective variables are identified as

Dependent Variable: Continuous Professional Development (CPD)

Independent Variables: - Rural, Urban,

- Teacher experience (> 5 years and < 5 years)

Methodology: The present study has employed a survey method. Here the researcher has prepared a self-constructed questionnaire consisting 50 questions (standardised through Pilot test) as a tool to gather the appropriate information from the desired population.

Research Sample: The researcher has employed stratified random sampling procedure and her sample consists of 60 in-service teachers and of which 30 urban teachers and 30 rural teachers. Further from 60 participants a second grouping was obtained between all in-service teachers with more than 5 years of teaching experience and in-service teachers with less than years of teaching experience.

Statistical Techniques: As per the requirement of the study suitable statistical techniques are applied which include, T test, Standard deviation, Mean etc by using SPSS packages on excel. The scores are recorded as per the area and experiences of in-service teachers.

Data Analysis:

Hypothesis1: There exists significant difference between continuous professional development of rural and urban teachers

Table-1 Difference between Mean, Standard deviation, t-test significance difference between rural and urban teachers' continuous professional development

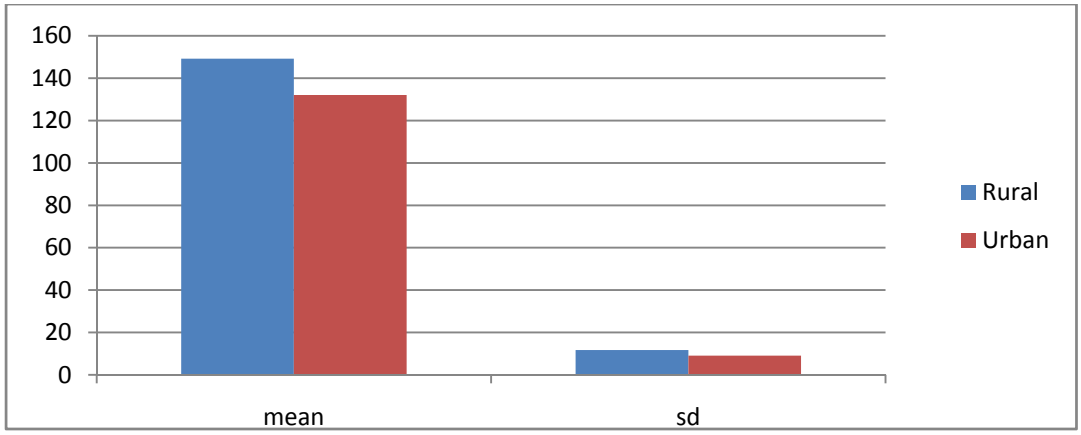
Description	N	Mean	SD	t - value	Level of sig Significance
Rural					
30	149.23	11.735	6.357	0.05	
Urban	30	132.03	9.050		

df =58, t- table value= 2.66

Interpretation of Rural and Urban in-service teachers' CPD

The obtained t value is t(58) = 6.36, p=0.03. The table t value at df =58 is 2.66 (0.01) and 2.01 (0.05) level of significance. Since the obtained t-value is greater than the table value, the research hypothesis is accepted. This indicates that there is a significant difference in the Continuous Professional Development (CDP) of rural and urban teachers. The rural teachers have significantly higher levels of participation in CPD (Mean=149.23, SD=11.73) compared to the urban teachers (Mean 132.03, SD=9.05).Therefore, the obtained results shows that research hypothesis 1 is accepted and the Null hypothesis is rejected.

Fig 1: Graphical representation showing difference between mean and standard deviation of rural and urban teachers



Hypothesis-2

- **H_2:** There exists significant difference between continuous professional development of more than 5 years and less than 5 years experienced in-service teachers.

Table-2 Difference between mean, standard deviation, t-test significance difference between continuous professional development of less than 5 years and more than 5 years of experienced in-service teacher

Description	N	Mean	SD	t -value	Level of Significance
<5 y exp	30	42.30	12.521	.953	0.05
>5 y exp	30	138.97	14.495		

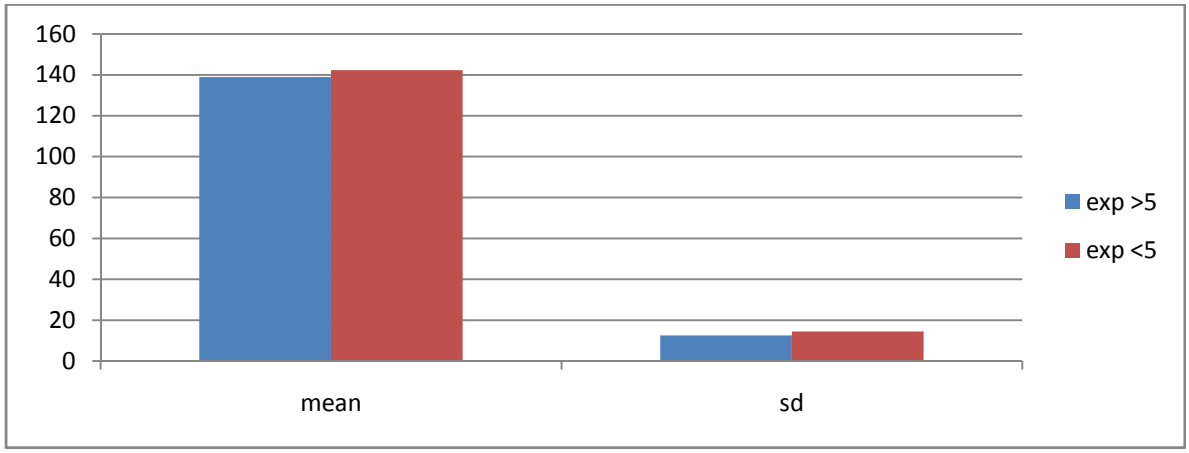
df =58, t- table value= 2.66

Interpretation of Teachers' CPD based on their Experience:

- The obtained t value is t (58) = 953, p=0.68. The actual t value at df =58 is 2.66 (0.01) and 2.01 (0.05) level of significance. Since the obtained t-value is less than the table value, the research hypothesis is rejected, and the null hypothesis is accepted. This indicates that there is no significant difference in the Continuous Professional Development (CDP) of teachers who have <5yrs of experience and > 5 years of

experience. The teachers with <5 years of experience have significantly higher levels of participation in CPD (Mean=142.30, SD=12.52) compared to teachers with > 5years of experiences (Mean=138.97, SD=14.49). Therefore, **the** result of Hypothesis2 shows research hypothesis is rejected and Null hypothesis is accepted.

Fig 2: Graphical representation of hypothesis-2, showing difference between mean and standard deviation of more than and less than 5 years of experience of in-service teachers



Graph 2-Graphical representation of hypothesis 2

Discussion on the Findings

There exists a significant difference in the continuous professional development of rural and urban in-service teachers. The study found that indeed there was a significant difference in the CPD pathways of rural and urban in-service teachers participating in the study. It was expected that the in-service teachers of the urban schools are continuously engaged in improving the quality of education to attract more students and become leaders in providing 21st century education. Surprisingly the results of this study show a reverse trend. Rural teachers attended CPD programs regularly and are willing to attend various modes of CPD. On the other hand Urban teachers show less interest to upgrade their knowledge and skills because of the know it all attitude which makes them overconfident regarding their professional development or else it could also be the reason that the heavy work load in schools time does not permit them to participate in CPDs.

There is a significant difference between the continuous professional developments of in-service teachers having more than 5 years of teaching experience than in-service teachers with less than 5 years of teaching experience. Here again, as depicted teachers become more experienced their thirst and curiosity for newer trends and developments in their areas of expertise would increase reflecting in an increased engagement in CPD.

The results of this study indicated that in-service teachers with more than and less than 5 years of experience showed negligible difference in their CPD. Both groups appeared to show equal interest in participating in CPDs. Perhaps, new entrants are looking into their career progress with much intensity. Investing in CPD is seen like an investment with high returns. Further government rules and regulations are insisting on continuous professional development in the teaching profession so that the national education system is in par with the international education system.

Educational Implications

- At the administration level administrator are to encouraged to provide more CPD opportunities to in-service teachers.
- At the school managers level the findings of this study would help the school managers to acquire adequate knowledge and skills that would enable them function well in their roles as school managers.
- At the student level it can be assumed that increased CPD of rural teachers would probably improve the performance of rural pupils and subsequently have a knock on effect on the School's quality of education.
- At the government level it could be suggested that a minimum level of CPD to be made mandatory for improvement of quality in education.
- The findings of this study could also provide direction to policy makers with regard to which CPD components are regularly used and which components are to be focused on with regard to implementation of CPD.

Conclusion: This study intended to find out the differences between the CPD pathways of rural and urban teachers and as well as the CPD differences between in-service teachers with more than and less than 5 years of experience. The researcher was encouraged to pursue this study based on the findings of previous studies which showed that the CPD of rural teachers' was comparatively lesser than the urban teachers' CPD. In the findings of this study there was a gap alright in the CPD of rural and urban in-service teachers, but the reverse was true, it was not the urban but the rural in-service teachers that reported an increased engagement in CPD. The results are taken as encouraging to the rural administrations, institutions, governments and policy makers to promote more CPD events in order to raise the standards of rural education which will surely increase the quality of the teaching learning process. In-service teachers with less than and more than 5 years of teaching experience seem almost equally concerned regarding their professional development. In that sense experience did not have any impact on in-service teachers' decisions to participate or not to participate in continuous professional development.

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