

# Bridging Gaps at Application Level Between Theoretical Knowledge and Professional Practice in Teacher Education

M. Bilal, Dr. S. A. A. Rizvi, A. J. Bhatti

Department of Education, International Islamic University Islamabad.

*Received: August 1, 2016*  
*Accepted: November 15, 2016*

---

## ABSTRACT

The common problem of the teacher education is the gap between what the student teachers know and how they use this knowledge in the real world situation of the classroom. There is a common perception about the teacher education about its focus on theoretical knowledge rather than professional practice. What strategies can be adopted to minimize this gap? has been a core issue of the national and international research. The present study was about to investigate the level of application and gaps between theoretical knowledge and professional practice as well as to develop strategies to fill these gaps. Quantitative approach with concurrent triangulation design was used to conduct the study. Student teachers [n = 522] and teacher educators [n = 100] were selected as sample through cluster random technique. Observation and questionnaires were major instruments of the study. Overall good and neither good nor poor level of application with considerable and significant gaps were identified. A significant difference was between the student teachers' perceptions and observation records of the researchers. The concepts of close collaboration of teacher education institutions and practice schools, laboratory schools, reflective practices, extended duration of teaching practice, model lessons, proper adjustment of teaching practice in time table and strengthening the role of mentors emerged and recommended by the researchers.

**KEYWORDS:** Gaps, application level, theoretical knowledge, professional practice, teacher education teaching practice

---

## 1. INTRODUCTION

This research study was aimed at investigating the most important challenge of gaps between theoretical knowledge and professional practice in teacher education. Pre-service teacher education provides knowledge and skills to the student teachers that are practicum to their workplace as a teacher. Professional development starts with a specific experience as well as an abstract understanding of the situation is created through the analysis of the experience which results in its transfer value [35].

The teacher education regarding the Bachelor of Education (B. Ed) is consisted of a year including theoretical and practical components. The theoretical component prepare the student teachers with the expansion of pedagogic horizons in their respective domains of practice in real world settings. The practical component is of four to six weeks practice teaching which is assumed to give an in-depth exposure of the student teachers in a realistic situation [30], [6] and [9].

Integration of theory and practice in professional education has emerged much debate but resulted in few solutions [24] and [12]. A number of different interpretations about what constitutes the gap between the two components emerged through the body of research in theory-practice gap. Golden-Biddle, Estabrooks & Germann [14] classified these interpretations into three groups.

First, they referred to the prevailing view that identifies the theory-practice gap as a result of the great division or chasm between two communities with often very different cultures. Associated with this view is the notion of bridging the gap and developing best practices of transferring knowledge that can be generally applied.

Second, there has been an emergent view that attributed the existence of the theory-practice gap to organizational deficiencies that prevented practitioners from implementing to practice the theory learned in pre-service preparation [14].

Third, they discussed a novel alternative view that considers the theory-practice gap as an opening or pass that connects people participating in separate communities and fosters communities of practice. Rather than treating the theory-practice gap as negative, as something to solve and resolve, proponents of this view regarded the gap as a connective and an essential part of producing and using knowledge [14].

---

<sup>a</sup> **Corresponding Author:** Muhammad Bilal, Ph.D Scholar at International Islamic University Islamabad. Presently at Punjab Higher Education Department, Government Postgraduate College Layyah, Pakistan. +923336204678  
Email: [mbilalwandar@yahoo.com](mailto:mbilalwandar@yahoo.com)

It is considerably disquieting to note that, as far back as the 1920s, Dewey [9] expressed similar concerns. Others suggested that separating theory from practice created a false dichotomy and that teaching is a profession in which theory is embedded in and inseparable from practice [7], [32] and [25]. Lenz Taguchi [26 p. 278] for example, argued that despite the diversity of opinions about theory-practice in teacher education, it has been widely perceived as inherently problematic in pre-service programs.

Hussain and Mehmood [18] revealed the central role of teaching practice in the professional development of prospective teachers with competencies and skills developed through the internship program. Qazi *et. al.* [39] found that the teaching practice was ineffective in the field of implementation. Fazalur Rahman, Jumani, Akhtar, Chishti, & Ajmal [11] found that the teachers' training was positively correlated with effective teaching in terms of students' achievement.

Jumani [21] found the curriculum of distance education less weighed on students' background and culture with teachers' more focus more on the grasp of knowledge rather than other aspects of personality development. He concluded that besides the preparation of instructional material for teachers in B.Ed program, there was a gap in the coordination of teachers while implementing it in the classrooms.

The school environment does not provide a chance to student teachers for practicing the pedagogies in classroom with necessary resources, to encourage in-depth learning of children as well as their own judgments [15]and[19]. The study may help the stakeholders to adopt the realistic decisions for minimizing the gaps between theoretical knowledge and professional practice in teacher education.

## 2. MATHEMATICAL ANALYSIS

### 2.1. OBJECTIVES

The present study investigated the theory practice gaps and strategies for closing these gaps through the experiences and perceptions of student teachers, teacher educators as well as through the observation records of the researcher during teaching practice

The following were the objectives of the study;

1. To find out the application level and gaps of theoretical knowledge of student teachers in their teaching practice.
2. To find out, how do the perceptions of student teachers, teacher educators and observation records of the researcher differ about the application level and gaps of theoretical knowledge.
3. Developing strategies for bridging the gaps between theoretical knowledge and professional practice of student teachers

### 2.2. METHODOLOGY

A quantitative approach was followed in the study. A concurrent data triangulation design was used to collect and analyze the data.

All the students, enrolled in one year B.Ed program of teacher education institutions under the umbrella of University of Education Lahore, were considered as population of the study. Cluster random sampling was used to select the sample of the study. Eight public sector teacher education institutions from two streams, University of Education Campuses and Government Colleges of Elementary Teachers (GCETs), were randomly selected in equal proportion. 522 student teachers, 327 from four GCETs and 195 from four UE, Campuses, were selected as sample of the study. 100 teacher educators were taken as sample of the study from eight institutions with equal proportion from both streams of UE, Campuses and GCETs.

After the review of related literature, an observation protocol and questionnaires for student teachers and teacher educators with same question items were developed. The observation check list contained only quantitative portion of the instrument. Whereas, The questionnaires included a pair of open ended question items to investigate the challenges and problems as well as for developing strategies to fill the gaps between theoretical knowledge and professional practice. the instruments were focussed o the theoretical concepts of instructional process skills, teaching methods and technology use in the classroom. Five point Likert scale (Excellent = 5, Good = 4, Neither Good Nor Poor = 3, Poor = 2 and Very Poor = 1) was used for collecting data.

### 2.3. DATA ANALYSIS

The researchers used SPSS 18 to analyze the data. Mean scores of the percentage responses, ANOVA as well as the Tukey's HSD were used to find out the results. Data was interpreted at 0.05 alpha level for significant difference.

**Table 1. Interpretation Criteria of Mean Scores**

Sr. No	Mean Range	Interpretation Criteria
1	Below 1.75	Very Poor with Complete Gap
2	1.75 - 2.75	Poor with Critical Gap
3	2.75 - 3.25	Neither Good Nor Poor with Significant Gap
4	3.25 - 4.25	Good with considerable Gap
5	Above 4.25	Excellent with insignificant Gap

Following were the results and findings of the data. The following alphabetical symbols were used to identify the types of data sources;

X = Student Teachers, Y = Teacher Educators and Z = Observation Records.

**Table 2. Data Triangulation with ANOVA and Tukey's HSD**

A INSTRUCTIONAL SKILLS						
Sr. No	Items	Mean			F	Sig.
		X N=480	Y N=94	Z N=200		
1	Selection of Objectives in terms of Students' Learning Outcomes	3.73	3.42	3.46	5.627	.004
2	Selection of Content according to the objectives	3.53	3.21	3.25	5.230	.006
3	Selection & Organization of Appropriate Learning Materials	3.59	3.40	3.16	11.404	.000
4	Assessment of Previous Learning	3.74	3.63	2.94	41.332	.000
5	Effective Delivery of Content according to the objectives	3.59	3.47	3.29	6.770	.001
6	Active Participation of students through motivational techniques	3.60	3.40	3.32	5.131	.006
7	Consistency of Students' Attention during Instruction	3.57	3.26	3.23	14.353	.000
8	Providing equal Opportunities to the Students for Active Participation	3.52	3.44	3.19	6.211	.002
9	Adequate use of Questioning Techniques	3.63	3.23	3.13	22.878	.000
10	Monitoring of Students' Learning Activities	3.59	3.15	3.26	10.408	.000
B TEACHING METHODS						
1	Recitation Method	3.41	3.48	3.30	1.295	.275
2	Lecture Method	3.95	3.78	3.80	2.720	.067
3	Demonstration Method	3.71	3.63	3.28	14.044	.000
4	Activity Method	3.53	3.40	3.19	5.065	.007
5	Problem Solving Method	3.33	3.28	3.00	6.189	.002
6	Inquiry Method	3.57	3.47	3.29	7.282	.001
7	Programmed Instruction	2.10	2.03	2.05	0.349	.706
8	Computer Assisted Instruction (CAI)	3.03	2.86	2.88	2.067	.127
9	Cooperative Learning Method	3.83	3.75	3.71	1.419	.243
10	Role Playing/Simulations	2.08	2.04	1.91	2.654	.071
C AUDIO-VISUAL AIDS AND TECHNOLOGY USE						
1	Charts & Pictures	3.88	3.81	3.70	2.539	.080
2	Using writing board/white board	3.88	3.62	3.60	5.502	.004
3	Using models according to the content	4.07	3.79	3.59	16.367	.000
4	Art & craft skills (pencil sketching and geometrical shapes)	4.05	3.85	3.56	25.449	.000
5	Text books, work books and teachers' manuals	3.89	3.87	3.57	6.143	.002
6	Computer application (power point presentations, games & spread sheets)	2.94	2.93	2.78	1.392	.249
7	Using online and offline tutorials	2.09	2.08	2.07	.017	.983
8	Using multimedia for presentation in the classroom	2.76	2.73	2.55	2.409	.091
9	Data collection & analysis through computer skills	2.39	2.31	2.30	.266	.767
10	Developing content management with computer	3.09	3.05	3.03	.288	.750

In table 2, the ANNOVA results showed that there was a significant difference among the responses of student teachers, teacher educators and observation records. Tukey's HSD (annexure, A) showed that, for most of the categories of theoretical knowledge, the observation records of the researchers had a significant difference with

student teachers' perceptions. Overall, the teacher educators were closed perceptions with observation records as compared to the student teachers.

There was identified a good level of application regarding the theoretical concepts of instructional skills. However, the teacher educators and observation records identified neither good nor poor level [MS; 2.75-3.25] of application for categories [2, 7, 9 & 10] and [3, 4, 7, 8 & 9] respectively. Overall, the observation records also identified a lower level of successful application for all categories.

In the context of teaching methods, there was a clear bifurcation between the traditional concepts and innovative concepts. All the responses of student teachers, teacher educators and observation records identified good level of application for traditional methods [1, 2, 3, 4, 6 & 9 respectively] but poor and neither good nor poor level of application for innovative methods [5, 7, 8 & 10 respectively]. However, the observation records identified a impressive good level of application only for two traditional methods of "lecture method" and "cooperative learning method".

Regarding the concept of audio-visual aids and technology use, there was also a clear differentiation between the traditional concepts and innovative concepts. All the responses of student teachers, teacher educators and observation records identified a good level of application for traditional concepts of charts, models, white boards, text books etc. However there was identified poor and neither good nor poor level of application for innovative concepts of technology i. e. computer applications.

In conclusion, there were identified considerable and significant gaps for successful application of the theoretical concepts by the student teachers during their professional practice. There was a clear difference of the perceptions of student teachers with the application level of theoretical concepts identified through the observation records of the researcher. However, the teacher educators were close in perceptions with the application level identified through the observation records of the researchers.

Two questions were asked by the student teachers and teacher educators to develop strategies for bridging gaps between theoretical knowledge and professional practice in teacher education. These questions were about,

1. The problems and challenges faced by the student teachers during teaching practice and,
2. The strategies to fill the gaps between theoretical knowledge and professional practice in teacher education

The student teachers and teacher educators gave mixed responses to the question items and these are summarized as under;

#### **PROBLEMS IN TEACHING PRACTICE**

1. Poor attitude of the pupils and mentor teachers in practice schools
2. Improper adjustment of time table w. r. t. the teaching practice
3. Poor access of student teachers to the laboratories
4. Teaching practice in schools instead of laboratory schools due to unavailability
5. poor alignment of training curriculum and school curriculum
6. Student teachers' adjustment problems due to short duration of teaching practice.
7. Poor coordination between the supervisors and mentor teachers
8. Poor motivation of school teachers towards innovation in teaching due to centralization of powers in the system for availability of resources
9. lack of motivation of student teachers and their uncertainty about future
10. Poor rewards for supporting teachers, head teachers and supervising teachers
11. Limitations of male supervisors due to gender differences in practice schools

#### **STRATEGIES TO FILL THE GAPS**

1. Development of laboratory schools
2. Close coordination among different stake holders of teacher education and school organization
3. Legitimate authority of training institutions for teaching practice
4. Accountability and rewards for supervising teachers and mentor teachers
5. Proper adjustment of teaching practice session schools
6. Increased duration of teaching practice session and microteaching session
7. Strengthening student teachers' freedom in the classroom teaching
8. strengthening the concept of audio-visual aids and information communication technologies
9. Defined content for teaching practice
10. Refresher courses of school teachers for teaching practice
11. Strengthening the role of private sector in training of teachers

### 3. DISCUSSION

The major theme of the study was about the application level and gaps between theoretical knowledge and professional practice of student teachers. Strategies for bridging these gaps were also identified in the study.

overall a good level of application was indicated for traditional methods. Whereas, innovative teaching methods were perceived at poor and neither good nor poor level with significant gaps. Ralph and Noon [31] indicated variety of methods in teaching practice as an area needed to be improved. Khan and Saeed [22] also found the lecture method as a high rated method, whereas, the problem solving as a least rated area of application.

Gujjar, Ramzan and Bajwa [1] identified that the teaching practice enhances the ability of student teachers for planning of lessons. They also found that the student teachers proper planning of the lesson before teaching. Ralph and Noon [31] also rated at high level the lesson planning as compared to the unit planning.

In the context of audio-visual aids and technology use, there was a division in traditional and innovative practices. the preset study identified good level of application for traditional aids whereas, poor level for innovative technology use. Gujjar, Ramzan and Bajwa [17] found that the practicum was a good opportunity for the student teachers to prepare and use audio-visual aids in the classroom. Khan and Saeed [22] indicated, audio-visual aids as a poor area of performance of the students.

Theory obtained through the theoretical component has been considered as an enough information for the student teachers about teaching. However, the real world teaching exposure of real world is acquired through their teaching practice [23], [16], [27] and [33]. Perry [38] also pointed out that the teaching practice gives meanings to the knowledge acquired through the theoretical component of teacher education.

The research studies identified the application gaps between the theoretical knowledge and the practices of realistic contexts of classroom [21], [1], [32], [33], [2], [3] and [4]. Wideen, Mayer-Smith and Moon [36] observed the traditional model of teacher education in the sense that the university was responsible to provide theory methods and skills to the student teachers. Whereas, the school was responsible for practice in which these skills and the student teachers were individually responsible to apply this acquired knowledge.

The major problems were the lack of proper resources, poor importance of the student teachers, time for teaching practice, poor motivation of teachers and student teachers, lack of coordination among training institutions and school administration and gaps between training institutions and school environment. The strategies for bridging the gaps between theoretical knowledge and professional practice were identified as close collaboration among training institutions and practice schools, availability of resources, strengthening of the freedom of student teachers, adjustment of teaching practice in time table and extended duration for teaching practice. These findings are in line with the findings of [18], [5], [34], [10], [13] and [28].

Integration of theoretical knowledge and professional practice requires an understanding of concepts associated with teaching and learning and how to use these concepts in realistic nature of the classroom. In support to this argument, Isaac [20] further thinks that the possible strategies to integrate theoretical knowledge and professional practice are: **[a] Problem based learning:** Assignments taking into account the complex classroom settings. **[b] Student learning based on self-directed work:** This needs to make students responsible for their learning in the context of particular problem. **[c] Concept maps:** It helps to integrate new knowledge with prior knowledge through creating knowledge graphs that involves networks of concepts **[d] Reflective practice:** A personal reflection on one's own practice, as well as guided reflection, where peers and others help to understand ones practice. **[e] Group discussion:** Skill acquisition in decision making and problem solving, critical and creative thinking processes as well as thoughtful application **[f] Support and demonstrations by role models:** This will help learners in the application of various skills to a diversity of problems, using different educational strategies and providing meaningful learning experiences in which learners can integrate theoretical knowledge and professional practice.

This study attempted to investigate the application level and gaps between theoretical knowledge and professional practice in teacher education. The study explored the perspectives of student teachers, teacher educators and observation records of the researchers within the context of one year B. Ed program in Pakistan.

There were found gaps regarding the application of theoretical concepts during the teaching practice of student teachers. There were significant differences among the responses of student teachers and observation records of the researcher. Overall, the teacher educators perceptions were close with the observation records as compared to the responses of student teachers for most of the theoretical concepts.

A poor coordination among supervisor teachers and mentor teachers, poor response of school teachers towards the student teachers, poor access of resources and lack of student teachers' participation, poor mentoring and shortage of time with poor adjustment of teaching practice in school time table were the major problems and challenges of student teachers.

Close collaboration of training institutions and practice schools, extended duration of teaching practice, reflective practices with the concept of model lessons, suitable resources, training and incentives for mentor teachers, legitimate role of teaching practice and full participation of student teachers in school decisions were the major recommendations of the study. Studies may be conducted in comparative perspectives of different teacher education programs for the same objectives in the current study.

**Acknowledgements:** The authors are thankful to the Faculty of Social Sciences, Department of Education, International Islamic University Islamabad for providing suitable environment for this research study.

## REFERENCES

- [1] Ali, T. Understanding how practices of teacher education in Pakistan compare with the popular theories and narrative of reforms of teacher education in international context. *International Journal of Humanities and Social Science*, 1(8), 2011, 208-222. Retrieved from [http://ecommons.aku.edu/pakistan\\_ied\\_pdck/84](http://ecommons.aku.edu/pakistan_ied_pdck/84).
- [2] Allen, J. M. & Peach, D. Exploring connections between the in-field and on-campus components of a pre-service teacher education program: A student perspective. *Asia Pacific journal of Cooperative Education*, 8(1). 2007, 33-36.
- [3] Allen, J. M. *The "Theory Practice Gap" turning theory into practice in a pre-service teacher education program*. Unpublished Doctoral Thesis, 2009 Australia: Faculty of Arts, Humanities and Education. Central Queensland University
- [4] Almodaires, A. Technology supported reflection: toward bridging the gap between theory and practice in teacher education (Unpublished Ph.D thesis). 2009, Enschede: University of Twente.
- [5] Azeem, M. Problems of prospective teachers during teaching practice, *Academic Research International*, 1(2), 2011, 308-316. Retrieved from <http://www.savap.org.pk/journals/ARInt/Vol.1%282%29/2011%281.2-32%29.pdf>.
- [6] Bates, R. Australian teacher education: Some background observations. *Journal of Education for Teaching*, 28(3), 2010, 217-220. DOI: 10.1080/0260747022000021331.
- [7] Carr, W. (1987). What is an educational practice? *Journal of the Philosophy of Education*, 21, 163-175. DOI: 10.1111/j.1467-9752.1987.tb00155.x.
- [8] Cochran-Smith, M. (2009). Recruiting teacher education: Inquiry, evidence and Action. *Journal of Teacher Education*, 60(3), 2009, 458-469.
- [9] Dewey, J. (1928). Progressive education and the science of education. In R. Archambault (Ed.). In *John Dewey on education: Selected writings* (pp. 230-259). Chicago: University of Chicago Press.
- [10] Ekundayo, H. T., Along, H. O., Kolawole, A. O. & Ekundayo, S. K. Teaching Practice Exercise for Education Students in Nigerian Universities: Evaluation, 2014, 18(5).
- [11] Fazalur Rahman, Jumani, Akhtar, Chisti & Ajmal. Relationship between Training of Teachers and Effectiveness Teaching. *International Journal of Business and Social Science*, 2(4), 2011, 150-160.
- [12] Fraser, D. & Spiller, D. (2005). Effective Teachers. In C. McGee & D. Fraser (Second Ed.), *The Professional Practice of Teaching* (pp, 67-83). South Bank Victoria: Thomson Dunmore Press.
- [13] Goh, P. S., & Matthews, B. Listening To the Concerns of Student Teachers In Malaysia During Teaching Practice. *Australian Journal of Teacher Education*, 36(3), 2011. <http://dx.doi.org/10.14221/ajte.2011v36n3.2>.
- [14] Golden-Biddle, K., Estabrooks, C. A., & GermAnn, K. (2003, September 25-26). Is there a theory-practice gap? Some thoughts from organizational studies. Paper presented at the Knowledge Utilization Colloquium, Laval, Canada.
- [15] Government of Pakistan (2006 February, 28). Education in Pakistan: A white paper, document to debate and finalize the national education Policy. Islamabad: National Education Policy Review Team, Ministry of Education.
- [16] Gujjar, E. A., Noureen, B., Saifi, S. & Bajwa, J. A. Teaching Practice: Problems and Issues in Pakistan. *International Online Journal of Educational Sciences*, 2010, 2 (2), 339-361.

- [17] Gujjar, E., Ramzan, M. & Bajwa, M. J. An evaluation of teaching practice: Practicum. *Pak. j. Commer, Soc. Sci.*, 5(2), 2011, 302-318.
- [18] Hussain, I & Mehmood, S. T. Practice teaching or internship: Professional development of prospective teachers through their pre-service training programmes. *Journal of Educational Research*, 13(1), 2010, 105-122. Retrieved from [http://www.iub.edu.pk/jer/JOURNAL/JER\\_Vol\\_13\\_No\\_1.pdf](http://www.iub.edu.pk/jer/JOURNAL/JER_Vol_13_No_1.pdf)
- [19] Hussain, M. A., Jumani, N. B., Sultana, M. & Iqbal, M. Z. Exploring perceptions and practices about information and communication technologies in business English teaching in Pakistan. *International Scholarly and Scientific Research & Innovation*, 4(1), 2010, 1127-1131.
- [20] Isaac, S. *Correlation of Theory and Practice*. Sree Abirami College of Nursing, Coimbatore: India, 2012.
- [21] Jumani, N. B. Study on the competencies of the teachers trained through distance education in Pakistan. Unpublished post doctoral thesis, Australia: Faculty of Education, Deakens University, 2007.
- [22] Khan, S. H. & Saeed, M. Effectiveness of preservice teacher education programme (B.Ed) in Pakistan: Perceptions of graduates and their supervisors. *Bulleton of Education and Research*, 31(1), 2009, 83-98.
- [23] Kiggundu, E. & Nayimuli, S. (2009). Teaching practice: A make or breakphase for student teachers. *South African Journal of Education*, 29, 2009, 345-358.
- [24] Korthagen, F. A. J. & Kessels, J. P. A. M. (1999). Linking theory and practice: Changing the pedagogy of teacher education. *Educational Researcher*, 28(4), 1999, 4-17. doi: 10.3102/0013189X028004004.
- [25] Korthagen, F. A. J., Loughran, J. J. & Russell, T. Developing fundamental principles for teacher education programs and practices. *Teaching and Teacher Education*, 22, 2006, 1020-1041. doi:10.1016/j.tate.2006.04.022..
- [26] Lenz Taguchi, H. Deconstructing and transgressing the theory-practice dichotomy in early childhood education. *Educational Philosophy and Theory*, 39, 2007, 276-290.
- [27] Murray, S., Nuttall, J., & Mitchell, J. Research into initial teacher education in Australia: A survey of the literature 1995-2004. *Teaching and Teacher Education*, 24, 2008, 225-239. doi:10.1016/j.tate.2007.01.013.
- [28] Okobia, E. O, Augustine, O. E., & Osagie, R. O (2013).An analysis of the perceived challenges faced by student- teachers during teaching practice exercise. *Journal of Education and Practice*, 4(11), 2013, 7-11.
- [29] Perry, R. (2004). *Teaching practice for early childhood. A guide for students*. Available at [http://www Routledge.com catalogues./0418114838.pdf](http://www.Routledge.com/catalogues/0418114838.pdf).
- [30] Qazi, W., Rawat, K. J., Sharjeel, M. Y. & Devi, S. Teacher perception about implementation strategy of B. Ed teaching practice in real school classrooms: issues and challenges. *The S. U. Journal of Education*, 38, 2008, 54-76. Retrieved from [http://www.usindh.edu.pk/suje/Issue2008\\_09/Articles/04.pdf](http://www.usindh.edu.pk/suje/Issue2008_09/Articles/04.pdf).
- [31] Ralph, E. G. & Noonan, B. W. Evaluating teacher candidates' teaching in the extended practicum. *Brock Education*,14(1), 2004, 1-18.
- [32] Ranjha, N. Muhammad, T. & Alam, M. M. Study to analyze B.Ed graduate performance in secondary schools regarding pre-service training in Punjab, Pakistan. *Academic Research International*, 4(5), 2013, 430-444. Retrieved from <http://www.savap.org.pk/journals/ARInt./Vol.4%285%29/2013%284.5-43%29.pdf>.
- [33] Rizvi, M. The Relationship between School reforms and teacher professionalism in Govt primary school in Karachi, Pakistan (unpublished PhD thesis). Australia: Queensland university of technology, 2004.
- [34] Shah, M. A. & Lu, L. Collaboration problems during practicum in pre-service teacher education in Pakistan. *Social Sciences and Humanities*, 4(3), 2013, 379-393. Retrieved from <http://www.savap.org.pk/ journals/ ARInt./ Vol.4% 283% 29/2013 %284.3-41%29.pdf>.
- [35] Ulvik, M. Student-teachers doing action research in their practicum: why and how? *Educational Action Research*, 22(4), 2014, 518–533. <http://dx.doi.org/ 10.1080/ 09650792.2014.918901>.
- [36] Wideen, M., Mayer-Smith, J., & Moon, B. A critical analysis of the research on learning to teach: Making the case for an ecological perspective on inquiry. *Review of Educational Research*, 68, 1998, 130–178.

## ANNEXURE, A (TUKEY' S HSD)

Sr. No.	Instructional Process Skills			Teachig Methods			A. V. Aids & Technology Use					
	Mean	Tukey's HSD Subset for Alpha 0.05			Mean	Tukey's HSD Subset for Alpha 0.05			Mean	Tukey's HSD Subset for Alpha 0.05		
		1	2	3		1	2	3		1	2	3
1	Z	3.4250			Z	3.300			z	3.700		
	Y	3.4681	3.4681		Y	3.4104			y	3.819		
	X		3.7313		X	3.4894			X	3.888		
	Sig.	.856	.074		Sig.	1.000			Sig.	.190		
2	Z	3.2500			Z	3.7800			Z	3.60		
	Y	3.2979			Y	3.8000			Y	3.62		
	X	3.5375			X	3.9563			X	3.88		
	Sig.	.054			Sig.	.216			Sig.	.056		
3	Z	3.1600			Z	3.2800			Z	3.595		
	Y	3.4043	3.4043		Y		3.6383		Y	3.798		
	X		3.5979		X		3.7146		X		4.07	
	Sig.	.101	.236		Sig.	1.000	.753		Sig.	.163	1.000	
4	Z	2.9450			Z	3.1900			Z	3.46		
	Y		3.6383		Y	3.4043	3.4043		Y		3.85	
	X		3.7458		X		3.4938		X		4.05	
	Sig.	1.000	.616		Sig.	.192	.748		Sig.	1.000	.159	
5	Z	3.2900			Z	3.000			Z	3.57		
	Y	3.4787	3.4787		Y	3.2872	3.2872		Y		3.87	
	X		3.5979		X		3.3313		X		3.89	
	Sig.	.190	.514		Sig.	.050	.931		Sig.	1.000	.986	
6	Z	3.3200			Z	3.285			Z	2.785		
	Y	3.4043	3.4043		Y	3.468	3.468		Y	2.938		
	X		3.6000		X		3.567		X	2.947		
	Sig.	.756	.223		Sig.	.134	.556		Sig.	.383		
7	Z	3.2340			Z	2.032			Z	2.07		
	Y	3.2650			Y	2.055			Y	2.08		
	X		3.5750		X	2.106			X	2.09		
	Sig.	.966	1.000		Sig.	.762			Sig.	.99		
8	Z	3.1950			Z	2.862			Z	2.55		
	Y	3.4468	3.4468		Y	2.880			Y	2.73		
	X		3.5229		X	3.033			X	2.76		
	Sig.	.092	.802		Sig.	.296			Sig.	.221		
9	Z	3.1300			Z	3.710			Z	2.30		
	Y	3.2379			Y	3.755			Y	2.31		
	X		3.6396		X	3.846			X	2.39		
	Sig.	.222	1.000		Sig.	.422			Sig.	.737		
10	Z	3.2660			Z	1.915			Z	3.03		
	Y	3.1500			Y	2.043			Y	3.05		
	X		3.5938		X	2.083			X	3.09		
	Sig.	.899	1.000		Sig.	.176			Sig.	.837		