A Comparative Study of the Assessment Practices and Proposed Curriculum Objectives in Revised Teacher Education Programs

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Abstract

This study adopts a qualitative approach to explore the gaps between the proposed curriculum objectives and the assessment instruments used for evaluation of revised teacher training programs in the universities as well as their affiliated colleges in the Punjab province. Specifically it seeks to examine the alignment between the proposed curriculum objectives and the content and cognitive traits being assessed by mid-term and final-term examinations. Bloom's taxonomy was taken as standard for comparison in evaluation of assessment tools and intended learning outcomes of each unit of the selected sample courses. For the purpose of data collection, all the cities where the institutions (Universities and affiliated colleges) are located were visited. The final and mid-term assessment papers and the respective course guides of the selected sample courses were collected and analyzed with the help of Bloom's Taxonomy, and then a comparison was being made between both types of documents. The document analysis presented a lack of alignment between the proposed curriculum objectives and the content and cognitive traits being assessed through formal assessment practices of revised teacher training programs.

Key words: Assessment Practices, Bloom's Taxonomy, Document Analysis, B.Ed (Hons), Associate Degree in Education (ADE).

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Introduction

Assessment, curriculum, and instruction are deeply connected with each other (Knight, 1999). Our understanding of assessment has undergone substantive changes due to developments in cognitive science. The traditional paper and pencil tests are increasingly seen as misaligned with active learning approaches. The learner centered, dynamic, and activity based learning approaches have led to an alternative set of assessment practices, which are different from traditional paper and pencil approaches for assessing student outcomes (Wiggins, 1989; Anderson, 1998; Shepard, 2000). The traditional tests have been replaced by strategies that do more than merely testing the students for memory recall. One of the weaknesses of traditional exam driven assessment approaches is that they are often unable to adequately assess students' thinking at higher cognitive levels. The assessment strategies should, therefore, encourage students to think instead of merely recall facts by memory.

Typically the studies of assessment practices have been conducted to determine the extent to which the assessment practices are aligned with the approaches toward learning and teaching embedded in the curriculum and instruction (Biggs, 1996; Brownstein, Allan, Ezrailson, Hagevik, Shane, & Veal,, 2009; Martone & Sireci, 2009). Studies of the assessment practices require developing a description of classroom practices and, therefore, employ qualitative methodologies. While a literature research reveals some studies done on instructional practices in Pakistani schools (Naeemullah, Inamullah, Sarwar, Muhammad &Hussain, 2010; UNESCO, 1997), there are none on the assessment practices in either schools or in the teacher education institutions. This gap in our knowledge is disturbing given the apparent emphasis on learner-centered approaches in many reform initiatives. The present study attempts to fill the void, with the hope that it will raise further questions for more research on assessment practices and their influences on instruction in pre-service teacher education classrooms.

Situation Analysis in Pakistan

The National Education Policy of 2009 states, that in order to improve the overall quality of education in Pakistan, the standard of teacher education must be raised. Amongst its various proposals, the policy calls for reforms in pre-service training and standardization of professional qualifications.

A Bachelor's Degree, with a B.Ed., shall be the minimum requirement for teaching at the elementary level. A Masters level for the secondary and higher secondary, with a B.Ed., shall be ensured by 2018. PTC and CT shall be phased out" – (National Educational Policy 2009)

Universities have prescribed assessment policies in connection with these newly established programs. The assessment system has been modified to respond to the requirements of the new programs. In addition to the traditional end-of-the-year examinations, on-going assessment is also taking place throughout the semester. In both cases, written tests carry most weight. In this context, the alignment of written test with the approaches promoted through curriculum gains prominence. It becomes imperative to probe whether the changes in curricula and instruction of new teacher education programs are well supported by the employed assessment instruments. The present study investigated this aspect by examining the assessment instruments used in the universities as well as their affiliated colleges in the Punjab province. Findings of this study provided recommendations to the policy makers regarding assessment practices for making them more aligned with the teaching and learning approaches embedded in the revised pre-service teacher education programs. Bloom's taxonomy was taken as a reference for examining the alignment in evaluation of assessment practices and intended learning outcomes of the selected courses. Bloom's taxonomy refers to the cognitive traits and different levels of thinking; extending from simple recall to increasingly complex higher order thinking. The present study used the revised version of taxonomy, designed by Anderson and Krathwohl (2001) that changes the knowledge dimension (noun) into the cognitive process dimension (verb).

Bloom's taxonomy and its revised versions are instrumental in formulating questions that stimulate higher order thinking and increase the level of challenge to the students. By using Bloom's taxonomyas a guide in designing learning objectives and instructional strategies,students can be given an opportunity to work at all levels of thinking. Moreover, Yorke, (2003) also mentioned that "the taxonomy relating to the cognitive domain has proved useful for analyses of cognitive demand, whether at the stage of constructing curricula or of assessing students' performance, it has to be used with reference to the epistemological level of the subject material" (p.495). Bloom's Taxonomy revised version is given below in figure 1.
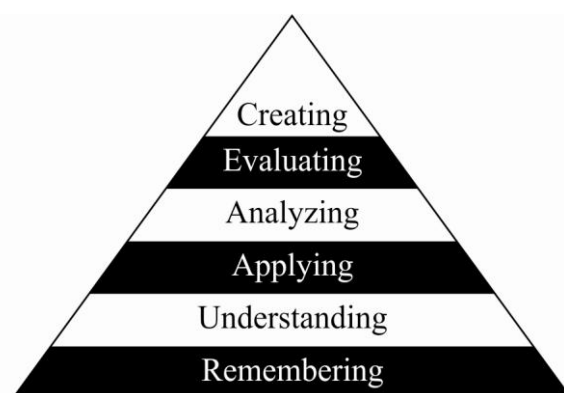
Figure 1: Bloom's Taxonomy (Source: adapted from Anderson & Krathwohl, 2001)

Research Questions

On the basis of review of related literature, theresearch question along with some sub questions was formulated:

1. What is the degree of alignment between the content and cognitive traits embedded in the course objectives and those being assessed by the formal assessment activities in B.Ed (Honors) and ADE Programs in the Punjab, as measured against Bloom's Taxonomy?

   a. What content and cognitive traits are embedded in the course objectives of the pre-service teacher preparation courses?

   b. What content and cognitive traits are assessed in the selected courses through the two most heavily weighted formal assessment instruments administered in the selected courses of B. Ed (Hons.) and ADE?

Method

This study used a qualitative approach. In-depth interviews and documents analysis were the main techniques of this study. Some quantitative measures were also used to give a clear picture to document analysis. Qualitative research methods, with their flexibility and an interpretative approach, enable the research team to capture the intangible issues.

Sample for the Study

Two universities in the Punjab province with their affiliated colleges (05) were the sample of the study. For the sake of anonymity, the actual names of the colleges and university campuses were given number codes. The university 1 has four affiliated colleges, whereas university 2 has only one affiliated college.

Two randomly selected courses "Child Development" and "General Methods of Teaching" in the on-going semester of sample universities were the focus of study. Course guides of the two said courses, approved by the Higher Education Commission were used for document analysis. Mid-term papers of the said courses were collected from all sample institutions, i.e. the two universities and the affiliated colleges. As per the policy, affiliated institutions prepare mid-term papers for their students, whereas the two universities prepare final-term papers for all affiliated institutions as well as for its on campus students. In addition, universities also prepare mid-term papers for their on campus students. In this way, total five mid-term papers and two final-term papers were collected from both universities and their affiliated institutions pertaining to the two courses, i.e., "Child Development" and "General Methods of Teaching", for the purpose of analysis.

The document analysis of curriculum objectives, mid-term and final-term papers was done using the two research tools formulated with the help of Bloom's Taxanomy. The methods of designing assignments, projects, quizzes were probed in the semi structure interviews.

Nature of Data and Data Sources

In this study, the data consisted of overall course outcomes as well as unit-wise learning outcomes and all formal assessment papers (mid-term and final-term) used in the selected courses of "Child Development" and "General Methods of Teaching".

Data Collection Instruments

Two types of instruments were formulated for data collection:

- An inventory of content and cognitive traits embedded in the intended learning outcomes of selected courses was developed in accordance with the Bloom's Taxonomy. This inventory was formulated, to see the degree of alignment between the learning outcomes of the selected course with Bloom's Taxonomy.

- A formal checklist was prepared on the basis of the cognitive process dimension (verbs) with respect to six cognitive levels of Bloom's Taxonomy.

Only two types of assessment practices namely mid-term examinations and final term examinations were included in the document analysis.Since the mid-term and final exams carry the most weight, these are the two practices analyzed.

The Procedure of Analysis

Qualitative data analysis techniques were employed to unravel the content and cognitive traits embedded in the assessment instruments and curriculum objectives. The basic unit of analysis in response to the first question of research was the assessment instruments as well as learning outcomes for analyzing the degree of alignment between the two documents by using Bloom's Taxonomy. The scheme of analysis of intended learning outcomes of selected courses "Child Development" and "General Methods of Teaching" consisted of developing structured codes based on the inventory of content and cognitive traits of Bloom's Taxonomy. Similarly, appropriate verbs used in the assessment practices were identified that corresponded with the content and cognitive traits in relation to the Bloom's Taxonomy. A comparative analysis was finally rendered to estimate the degree of alignment between the curriculum objectives and assessment practices of selected courses with that of Bloom's Taxonomy.

The analysis of the course outline (Child Development)

Learning outcomes provide a basis for measuring and reporting on students' academic achievement. Melton (1996), stated "learning outcomes are statements of desired outcomes of learning expressed in terms that make it clear how measurement can be achieved" (p.409). The inventory formulated for the purpose of analysis was used in order to see the degree of alignment between the learning outcomes of the selected course with Bloom's Taxonomy.

The document analysis of the course outline of "Child Development" revealed that the intended learning outcomes of the said course were constructed in accordance with all levels of Bloom's Taxonomy, but the different levels were not assigned equal weightage. There were six units in the course document and each unit had separately mentioned intended learning outcomes. There were a total of 49 learning outcomes for all six units of the course. A complete picture of the division of learning outcome in accordance with Bloom's Taxonomy is presented in figure 2 as below.
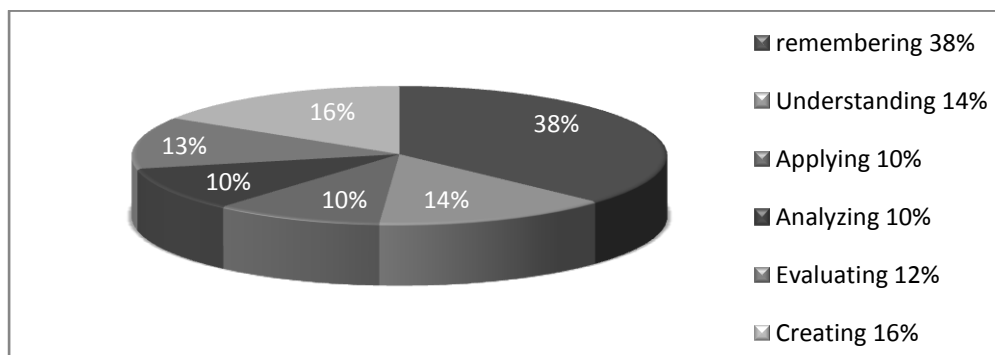
Figure 2: Percentage distribution of learning outcomes of "Child Development" in accordance with levels of Blooms' Taxonomy

It is revealed from figure 2 that out of total 49 learning outcomes, 18 (38%) were related to first level (Remembering) of Bloom's Taxonomy, whereas, 07 (14%) related to Understanding level, 05 (10%) to Applying level, 05 (10%) to Analyzing level, 06(12%) to Evaluating level and 08(16%) related to Creating level. In this way, all levels of Bloom's Taxonomy have been given weightage in the learning outcomes of all units of the course while biggest share has been given to Remembering level.

The analysis of the Mid-term and Final-term Papers (Child Development)

The mid-term papers pertaining to the "Child Development" course were collected from all sample institutions and were analyzed for the alignment with Blooms' Taxonomy. The final-term paper, set by the respective universities (one from each university) of the on-going semester was analyzed. There were a total of four institutions affiliated with university 1 and one institution was affiliated with university 2. Four mid-term papers and one final-term paper from university 1 and one mid-term paper along with one final term-paper were included in the analysis. As per the policy the affiliated institutions were entitled to set mid-term papers for their students, whereas sample universities had the prerogative of setting final-term papers for all affiliated institutions as well as for its on campus students. In addition to this, the sample universities had to set mid-term papers for their on campus students as well. In this way, there were a total of five mid-term papers and two final-term papers collected from both universities and their affiliated institutions with respect to the course of "Child Development" for the purpose of analysis. For the sake of anonymity, the actual names of the colleges and university campuses were given number codes while analyzing mid-term papers.

The document analysis of the mid-term and final-term papers of the two universities and their affiliated colleges is depicted in Table1.

Table 1: Concordance between Mid-Term and Final-Term Assessments of Child Development of University 1 and Bloom's Taxonomy

Sr. No	Assessment	Total Marks	No. of Test Items	Rating according to Bloom's Taxonomy			
				Remembering	Understanding	Applying	Evaluating
C-1-1	Mid-term	20	12	75%	25%	-	-
C-1-2	Mid-term	20	15	65%	15%	20%	-
C-1-3	Mid-term	50	22	34%	58%	08%	-
C-1-4	Mid-term	90	30	47.8%	40%	12.2%	
C-1-5	Not available						
U-1	Final-term	60	19	81%	13.3%	-	5%

As depicted in Table 1, the analysis of mid-term paper of C-1-1 revealed that out of total 12 items having 20 marks, 75% were related to Remembering level, and remaining 25% were related to Understanding level of Bloom's Taxonomy . The analysis of mid-term paper of C-1-2 revealed that out of total 15 item bearing 20 marks, 65% items of the instruments were constructed in accordance with Remembering level, 15 % to Understanding level, and remaining 20% related to application level of Bloom's Taxonomy. The analysis of mid-term paper of C-1-3 revealed that out of total 22 items bearing 50 marks, 34% were related to Remembering level, and 58% were related to Understanding level, and remaining 08% were constructed in accordance with the application level of Bloom's Taxonomy. The analysis of mid-term paper of C-1-4 revealed that out of total 30 items having 90 marks, 47.8% items of the instruments were constructed in accordance with Remembering level, 40 % to Understanding level, and remaining 12.2% were related to application level of Bloom's Taxonomy. The mid-term paper from C-1-5 was not provided by the respective institution. The faculty of C-1-5 informed the research team that since mid-term examination was not formally conducted on grounds that the program had recently been initiated; the students were instead assessed through daily activities and projects. The analysis of final-term paper revealed that out of total 19 items having 60 marks, 81% items of the papers were constructed in accordance with Remembering level, 13 % to Understanding level, and remaining 06% related to Evaluating level of Bloom's Taxonomy.

Table 2: Concordance between Mid-Term and Final-Term Assessments of Child Development
of University 2 and Bloom's Taxonomy

Sr. No	Assessment	Total Marks	No. of Test Items	Rating according to Bloom's Taxonomy		
				Remembering	Understanding	Applying
C-2-1	Mid-term	50	22	46%	32%	02%
C-2-2	Not available					
U-2	Final-term	70	25	58.5%	41.5%	-

The document analysis of mid-term and final-term papers of university 2 with reference to Bloom's taxonomy of the course "Child Development" is presented in Table 2. The analysis of mid-term paper of C-2-1 revealed that out of total 22 items having 50 marks, 46% were related to Remembering level, and 32% were related to Understanding level, and remaining 02% were constructed in accordance with the application level of Bloom's Taxonomy. The mid-term paper from C-2-2 was not provided by the respective institution due to unknown reasons. The analysis of final-term paper revealed that out of total 25 items bearing 70 marks, 58.5% items of the instruments were constructed in accordance with Remembering level, and remaining 41.5 % pertained to Understanding level of Bloom's Taxonomy.

The Degree of Alignment between the Curriculum Objectives and Assessment Practices (Child Development)

The analysis presented a weak alignment between the course objectives and the two most heavily weighted assessment practices. While formulating course objectives, all levels of Bloom's Taxonomy were given almost equal weight, whereas in the construction of assessment instruments, only first three levels were approached. The only exception was the final paper of University 1, where a very small part of paper (5%) was related to assessment of Evaluation level. This discrepancy resulted in poor assessment of higher order thinking of the students.

The analysis of the course outline (General Methods of Teaching)

The document analysis of the course outline of "General Methods of Teaching" revealed that all six levels of Bloom's Taxonomy were given almost equal weight, while formulating the intended learning outcomes. The course of "General Methods of Teaching" consisted of seven units. There were a total of 38 learning outcomes for all seven units of the course as presented in figure 3:
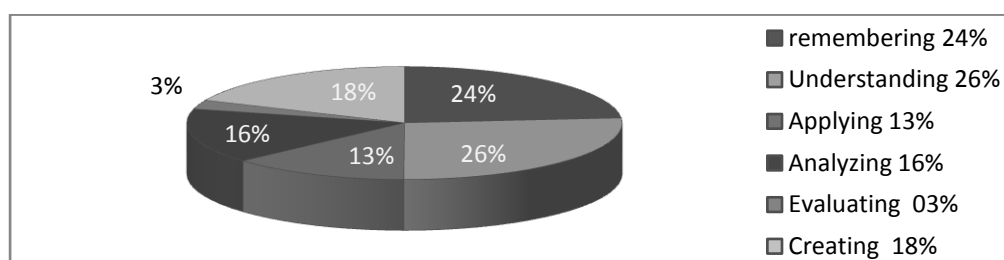
Figure 3: Percentage distribution of learning outcomes of "General Methods of Teaching" in accordance with levels of Blooms' Taxonomy

The figure 3 presented that out of a total of 38 learning outcomes, 09 (24%) were aligned with Remembering level of Bloom's Taxonomy, whereas 10 (26%) to Understanding level, 05(13%) to Applying, 06 (16%) to Analyzing, 01(3%) to Evaluating and 07 (18.4%) to Creating level of the Taxonomy. In this way, the intended learning outcomes of the course revealed that Bloom's Taxonomy was used as guideline while planning course objectives.

The analysis of the mid-term and Final-term Papers (General Methods of Teaching)

The mid-term and final papers of the course "General Methods of Teaching" were analyzed to see their degree of alignment with course objectives and Bloom's Taxonomy. The document analysis of the mid-term and final-term papers collected from two sample universities and their affiliated colleges in table form along with detailed description is given below.

Table 3: Concordance between Mid-Term and Final-Term Assessments (General Methods of Teaching) of University 1 and Bloom's Taxonomy

Sr. No	Assessment	Total Marks	No. of Test Items	Rating according to Bloom's Taxonomy			
				Remembering	Understanding	Applying	Evaluating
C-1-1	Mid-term	20	12	50%	50%	-	-
C-1-2	Mid-term	20	100	70.5%	23%	6.5%	-
C-1-3	Mid-term	50	23	52%	20%	28%	-
C-1-4	Mid-term	90	30	47.5%	42.5%	10%	-
C-1-5	Mid-term	40	19	30%	47.5%	1.1%	20%
U-1	Final-term	60	18	82.6%	13.3%	-	5%

The document analysis of mid-term and final-term papers pertaining to "General Methods of Teaching" course of university 1 and its affiliated institutions with reference to Bloom's taxonomy is presented in Table 3. The analysis of mid-term paper of C-1-1 revealed that out of total 12 items bearing 20 marks, 75% were related to Remembering level, and remaining 25% were related to Understanding level of Bloom's Taxonomy. The analysis of mid-term paper of C-1-2 revealed that out of total 100 item having 20 marks, 70.5% items of the instruments were constructed in accordance with Remembering level, 23 % to Understanding level, and remaining 6.5% were related to application level of Bloom's Taxonomy. The analysis of mid-term paper of C-1-3 revealed that out of total 23 items having 50 marks, 52% were related to Remembering level, and 20% were related to Understanding level, and remaining 28% were constructed in accordance with the application level of Bloom's Taxonomy. The analysis of mid-term paper of C-1-4 revealed that out of total 30 items having 90 marks, 47.5% items of the instruments were constructed in accordance with Remembering level, 42.5 % to Understanding level, and remaining 10% were related to application level of Bloom's Taxonomy. The analysis of mid-term paper from C-1-5 revealed that out of 19 items having 40 marks, 30% items pertained to Remembering level of Taxonomy, 47.5% related to Understanding level, 1.1% to Application and 20% to Evaluation level of Bloom's Taxonomy . The analysis of final-term paper revealed that out of total 18 items bearing 60 marks, 82.6% items of the instruments were constructed in accordance with Remembering level, 13.3 % to Understanding level, and remaining 05% were related to Evaluating level of Bloom's Taxonomy.

Table 4: Concordance between Mid-Term and Final-Term Assessments (General Methods of Teaching) of University 2 and Bloom's Taxonomy

Sr. No	Assessment	Total Marks	No. of Test Items	Rating according to Bloom's Taxonomy			
				Remembering	Understanding	Applying	Evaluating
C-2-1	Mid-term	50	19	64%	22%	14%	-
C-2-2	Not available						
U-2	Final-term	80	29	53.75%	36.25%	3.75%	6.25% -

The document analysis of mid-term and final-term papers of "General Methods of Teaching" course of university 2 with reference to Bloom's taxonomy is presented in Table 4. The analysis of mid-term paper of C-2-1 revealed that out of total 19 items bearing 50 marks, 64% related to Remembering level, and 22% related to

Understanding level, while remaining 14% were constructed in accordance with the Application level of Bloom's Taxonomy. The mid-term paper from C-2-2 was not provided by the respective institution due to unknown reasons. The analysis of final-term paper revealed that out of total 29 item bearing 80 marks, 53.75% items of the instruments were constructed in accordance with Remembering level, 36.25% to Understanding level, 3.75% to Application level, while remaining 6.25 % pertained to Analysis level of Bloom's Taxonomy.

The Degree of Alignment between the Curriculum Objectives and Assessment Practices (General Methods of Teaching)

The analysis of the assessment instruments and course outline revealed that while constructing assessments, the course objectives are not given proper weightage. Interestingly although the objectives were formulated to measure students' abilities related to all six levels of Bloom's Taxonomy, but the document analysis of assessment instruments showed that the assessment papers mostly evaluated the students' ability relating to first three levels of Blooms Taxonomy, while a very small part of the assessment focused on the Analysis and Evaluation level.

Conclusion and Discussion

The ground reality of assessment practices in the new teacher education programs entail a cursory view of all the earlier education policies of Pakistan with regard to assessments at higher education level. The past educational policies not only emphasized the use of scientifically standardized tests, scales and inventories of the student's abilities, aptitudes and achievements but also underscored the development of the scientific instruments for proper assessment of student's problems in learning, social adjustment and motivation (cf. UNESCO, 1977). National Education Policy 2009 identified five to six basic pillars of quality education; assessment being one of the six pillars of education (National Education Policy, 2009).Standardized tests can be developed to assess at all level's of the taxonomy, but it appears that test developers (including faculty who can contribute items) may have a limited view of what can be assessed by a paper-pencil test.

The document analysis of the intended learning outcomes of the selected courses "Child Development" and "General Methods of Teaching" revealed that the curriculum objectives of the said courses are not aligned with all cognitive levels of Bloom' Taxonomy. It was also revealed during the document analysis of the intended learning outcomes, of the course "Child Development" that major part of the course

is designed in accordance with first two levels of Bloom's Taxonomy (see fig 2 & 3). The 52% of the curriculum objectives of the course were confined to Remembering and Understanding level, whereas, 50% of the curriculum objectives of the course "General Methods of Teaching" were limited to the lowest cognitive levels of Bloom's Taxonomy. However, it is worth mentioning here that all levels of Bloom's Taxonomy have been given weightage in the curriculum objectives of the selected courses though this distribution is not balanced.

The document analysis of the mid-term and final-term papers of the selected courses "Child Development" and "General Methods of Teaching" presented a lack of alignment of the assessment practices with the cognitive levels of Bloom's Taxonomy. The analysis showed that all mid-term papers of the course "Child Development" set by the affiliated colleges of university 1 were confined to first three levels of Bloom's Taxonomy (i.e. Remembering, Understanding and Applying). A very small proportion of the final-term paper (05%) was related to Evaluation level of the taxonomy (see Table 1). The situation was worse in case of university 2. The mid-term paper of the said course set by the affiliated college of university 2 related to first three levels of Bloom's Taxonomy, whereas, the situation in final-paper of university 2 was more disappointing, as the paper was set in accordance with Remembering and Understanding levels of the taxonomy, (see Table 2).

The mid-term and final-term papers of the second course "General Methods of Teaching" with respect to university 1, was analyzed with the help of Bloom's Taxonomy. The similar pattern as identified in the course of Child Development above was found in mid-term papers set by four affiliated institutions, whereas a small portion 20% of one mid-term paper related to assessment of Evaluation level of Bloom's Taxonomy. Similarly, while analyzing final-term paper, it was found that a very small portion (05%) of the paper pertained to Evaluation level (see Table 3). While analyzing the assessment papers of courses collected from university 2 and its affiliated college, it was found that the mid-term paper was based on the similar pattern as that of university 1. It essentially catered to the first three levels, whereas in final term paper only 6.25% part assessed the analyzing ability of the students(see Table 4).

The cumulative findings of both parts of the study revealed that the main focus of the two major areas i.e. curriculum, and assessment practices is confined to first two levels of Bloom's Taxonomy. The percentage given for the assessment of higher order thinking in curriculum objectives is disproportionate. It is suggested that equal emphasis should be given to all cognitive levels of Bloom' Taxonomy becausethe

situation is more apathetic in case of assessment practices, where the assessment of higher order thinking is inadequately found and in quite a few cases. While integrating the results of both parts of the study, it is concluded that the assessment practices do not align with the intended learning outcomes of the sample courses. The analysis also revealed that the assessment practices of B.Ed (Hons) and ADE programs were not in accordance with the Bloom's Taxonomy and main part of these assessments were limited to first three levels.

Limitations of the Study

The study was delimited to the two universities of the Punjab province, so the research team makes no claim that the findings are generalizable to other settings, other times or to the assessment practices of other taught courses of teacher education in the sample universities as well. Moreover, the results of the study were emerged from the data collected in short duration of period i.e. one semester, thus it can be kept in mind that these short-term outcomes do not speak to the possibility of long-term effects which may be different from the results of the present study.

Suggestions for the Future Research

The present study is first ever study of its nature in the field of teacher education in Pakistan. It explores the phenomenon of assessment practices by using three different types of locally developed instruments that may provide guidelines for further analysis and insight into effective assessment practices. Further research in Pakistan may be carried in the area of teacher education to explore how the pedagogical practices are a reflection of the curriculum objectives.

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