Assessing the Learning Level of Students through Bloom's Taxonomy in Higher Education in Punjab

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Abstract

Education is essential component for development and growth in any society. Evaluation is very important factor in education. An educational professional must be able to effectively evaluate and assess the students'academic development and knowledge of the subjects being taught.The present study focuses on assessment methods in learning. Bloom's taxonomy was used as assessment tool to gauge students' level of learning in three public sector universities of Punjab, Pakistan. A total of 300 respondents were chosen as sample for this study. Cognitive Domain of Bloom's taxonomy was applied to assess level of learning.

1. Introduction

In education one of the most burning problems is to help students develop effective methods for learning. The educational institutions demands that the students spend many hours, many days, and many years in learning the subject matter, skills, and attitudes essential for useful living in a civilized community and for active citizenship in a democracy (Cohen, 1972).Learning is the attainment of new behavior patterns, or the strengthening or weakening of old behavior patterns, as the result of practice. Learning includes a wide variety of changes in behavior. The changes may be readily detected in the overt behavior of the individual or they may be changes in his reserve of ideas. Motives or drives are basic to the learning process. If we are to learn, we must first have some goals and then come across some blocks that stop us from achieving that goal. If we encounter no block-no difficulty of any kind-the chances are that we have already learned the behavior necessary to reach the goal or that we will not learn it until our goal becomes more attractive and more demanding (Srivastava, 2006).Learning is a complex concept and activity. Most teachers and pupils would recognize the importance of the social and emotional elements of learning, in addition to cognitive aspects of learning, thinking and problem solving (Hewitt, 2008).Bloom's Taxonomy was initially published in 1956 under the leadership of American academic and educational expert Dr. Benjamin S Bloom. Bloom's Taxonomy model is in three parts; (1) Cognitive domain (intellectual capability, i.e., knowledge, or 'think'), (2) Affective domain (feelings, emotions and behavior, i.e., attitude, or 'feel') and (3) Psychomotor domain (manual and physical skills, i.e., skills, or 'do'). Bloomand his colleagues' initial attention was focused on the 'Cognitive Domain', which was the first published part of Bloom's Taxonomy, The Cognitive Domain' (Bloom, Engelhart, Furst, Hill, Krathwohl, 1956) & (Chapman, 2006).

2. Bloom's Taxonomy - Cognitive Domain - (Intellect - Knowledge - 'Think')

Bloom's Taxonomy 1956 Cognitive Domain is as follows. An adjusted model was produced by Anderson and Krathwhol in 2001 in which the levels five and six (synthesis and evaluation) were inverted (Atherton, 2010).Cognitive domain deals with elements like Knowledge; Remembering previously learned information, memorize, Comprehension; Grasping the meaning of information, interpret, Application; Applying knowledge to actual situation, putting theory into practice, Analysis; Breaking down objects or ideas into simpler parts and seeing how the parts relate and are organized, interpret elements of structure, Synthesis; Rearranging component ideas into a new whole, develop creative thinking, Evaluation; Make judgments about value of ideas or materials, assess effectiveness.

3. Research Methodology

The universe of this research comprised of the male and female students from different departments of three selected universities situated in Punjab.Three universities were selected from all over the Punjab through multistage sampling method. A sample of 300 students including males and females was interviewed. The survey method was used as the main data-gathering tool for this research.The questionnaire was divided into different sections according to variables.

4. Results and Discussion

4.1 Demographic Variables

Demographic questions are essential in survey research probably. A summary of demographic variables is presented in the following table.

Table 1: Demographic Characteristics

Sex Composition	Frequency (f)	Percentage
Male	163	54.3
Female	137	45.7
Type of Schooling		
Private school	150	50.0
Govt. school	150	50.0
Age Categories (years)		
18-20	84	28.0
21-23	197	65.7
24 and above	19	6.3
Level of Study		
Under-graduation	165	55.0
Post-graduation	107	35.7
M. Phil	24	8.0
Ph. D	4	1.3
Area of Residence		
Elite class colony	10	3.3
Upper middle class area	85	28.3
Middle class area	195	65.0
Lower class area	10	3.3
Total Household Monthly Income (Rs.)		
Up to 10 thousand	23	7.7
10 to 20 thousands	44	14.7
21 to 30 thousands	80	26.7
31 to 40 thousands	61	20.3
More than 40 thousands	92	30.7
Father's Occupation		
Business man	92	30.7
Professional	95	31.7
Manager	17	5.7
Manual labor	23	7.7
Agriculture	73	24.3
Father's Educational Level		
Under matric	49	16.3
Matric	64	21.3
FA	51	17.0
BA	59	19.7
Master	62	20.7
Above	15	5.0

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Mother's Educational Level		
Under matric	105	35.0
Matric	71	23.7
FA	41	13.7
BA	51	17.0
Master	27	9.0
Above	5	1.7
Total	**300**	**100.0**

Socio-demographic characteristics of students and their parents are important when studying classroom socio-environmental characteristics and educational outcomes. Some demographic features form a specific status of student i.e., sex composition, age composition, type of school andarea of residence. Educational research consistently reports lower achievement among students of lower socioeconomic status (Stockard& Mayberry, 1992).In present study 54.3% respondents were males and 45.7% were females. 50.0% respondents studied in private schools, while 50.0% went to government schools. These results reflect that private schooling has increased in country in the last two decades.There are many factors that may be conducive to learning or hamper learning on other side. It evidently shows that 65.7% were in the age group of 21 to 23 years. More than one-fourth i.e., 28.0% were in the age group of 18 to 20 years. A minor part that is 6.3% was in the age group of 24 and above. Previous studies suggest that socio-economic status influences students' academic careers (Campbell& Alexander, 1965).Lower income and lack of facilities can result in long-term problems for individuals with learning disabilities. Above table describes the household monthly income of students. Table shows that 7.7% respondents' household monthly income is up to 10 thousand rupees. 14.7% respondents are those who have household monthly income 10 to 20 thousand rupees. A majority that is 26.7% respondents' household monthly income was 21 to 30 thousand rupees.

4.2 Learning Level of Student

Learning is frequently defined as a change in behavior which is revealed by people implementing knowledge, skills, or practices derived from education. Basically, from an educator's perspective, learning involves helping people along the learning process, and learning includes all of the things that we do to make it happen. There are numerous approaches, tools and techniques to assess the level of learning of students. In next section two approaches of learning have been practiced to evaluate students' learning level.

Table 2: Judgment of Respondents about Learning under the umbrella of Blooms Taxonomy

Statements	Agree		Neither agree nor disagree		Disagree		Total	
	f	%	f	%	F	%	f	%
Can you remember previously learned information?	194	64.7	78	26.0	28	9.3	300	100.0
Do you Grasp the meaning of information?	196	65.3	76	25.3	28	9.3	300	100.0
Can you Apply knowledge to actual situation?	198	66.0	63	21.0	39	13.0	300	100.0
Are you able to Break down objects or ideas into simpler parts and see how the parts relate and are organized?	180	60.0	96	32.0	24	8.0	300	100.0
Are you able to Rearrange component ideas into a new whole?	191	63.7	82	27.3	27	9.0	300	100.0
Can you Make judgments about value of ideas or materials in a critical situation?	180	60.0	87	29.0	33	11.0	300	100.0

The section refers to the assessment of students' learning by using "blooms taxonomy" as a tool. Bloom's Taxonomy is a classification of learning objectives within education proposed in 1956 by a committee of educators chaired by Benjamin Bloom who also edited the first volume of the standard text, Taxonomy of educational objectives: the classification of educational goals.A majority of 64.7% respondents were agreed that they can remember previously learned information. 26.0% were neither agreed nor disagreed. 9.3% were disagreed. 65.3% respondents were agreed that they grasp the meaning of information while 25.3% were neither agreed nor disagreed. Only 9.3% were disagreed.66.0% respondents were agreed that they apply knowledge to actual situation whilst 21.0% were neither agreed nor disagreed. 13.0% were disagreeing. 60.0% respondents were agreed that they are able to break down objects or ideas into simpler parts. 32.0%

were neither agreed nor disagree while 8.0% were disagreeing.63.7% respondents were agreed that they are able to rearrange component ideas into a new whole. 27.3% were neither agreed nor disagree. 9.0% were disagreeing. 60.0% respondents were agreed that they can make judgments about value of ideas or materials in a critical situation. 29.0% were neither agreed nor disagree. 11.0% were disagreeing.

Table 3: Judgment of Respondents about Learning under the umbrella of Blooms Taxonomy (Mean & Standard Deviation)

Statements	Mean	Std.Dev.	Rank
Do you Grasp the meaning of information?	2.56	.71	1
Can you remember previously learned information?	2.55	.69	2
Are you able to Rearrange component ideas into a new whole?	2.55	.69	3
Can you Apply knowledge to actual situation?	2.53	.66	4
Are you able to Break down objects or ideas into simpler parts and see how the parts relate and are organized?	2.52	.65	5
Can you Make judgments about value of ideas or materials in a critical situation?	2.49	.62	6

2.56 is mean value for the question asked "Do you grasp the meaning of information". The second question was "Can you remember previously learned information" that holds 2.55 mean value. Similar mean value was contained by the statement "Are you able to rearrange component ideas into a new whole". 2.53 mean value can be viewed for statement "Can you Apply knowledge to actual situation". The statement "Are you able to break down objects or ideas into simpler parts and see how the parts relate and are organized" grasps 2.52 mean value. The last statement "Can you make judgments about value of ideas or materials in a critical situation" has 2.49 mean.

4.3 Bi-variate Analysis

Table 4: Association between sex composition, age, schooling and socio-economic status and Student's learning in Classrooms

Variables	Chi-square value	Gamma value	Pearson Correlation
Sex composition	9.72*	-.187*	-.118*
Age	14.58**	-.117[NS]	.015[NS]
Schooling	7.59*	-.271**	-.161**
Socio-economic status	10.59*	.214**	.140*

A Dependent Variable: Students' learning in classroom; * Significant at 5% level of significance; ** Significant at 1% level of significance; NS = Non-significant at 5% level of significance

Gender is an important predictor of performance in higher education (Buchmann&DiPrete, 2006). Families often make educational investment decisions based on a cost-benefit analysis of increased utility (Becker, 1991). The findings of this study reveal that male students are better in learning in classroom as compared to female students.The age has no impact on students' learning in classroom. Private schooling found to be better for students' learning as compared to government schooling. Socio-economic status was positively associated with learning.

5. Conclusion

The above study concludes that majority of students are able to pick main ideas delivered by teacher during lectures. They retain what is presented to them. The level of students' learning also has some flaws. The findings of this study reveal that male students are better in learning in classroom as compared to female students. The age has no impact on students' learning in classroom. Private schooling found to be better for students' learning as compared to government schooling. Socio-economic status was positively associated with learning.

References

Atherton, J. (2010, February). *Learning and Teaching; Bloom's taxonomy.*Retrieved August 13, 2012, from www.learningandteaching.info.

Becker, G. S. (1991). *A treatise on the family*. Cambridge, MA: Harvard University Press.

Buchmann, C., & DiPrete, T. (2006). The growing female advantage in college completion: The role of family background and academic achievement. *American Sociological Review, 71,* 515–541.

Campbell, E. Q., & Alexander, C. N. (1965).Structural effects and interpersonal relationships.American Journal of Sociology, 71,284-289.

Chapman, A. (2006). Retrieved August 13, 2013, from www.businessballs.com: http://www.businessballs.com/bloomstaxonomyo flearningdomains.htm.

Cohen, e. g. (1972).*sociology and the classroom: setting the conditions for teacher-student interaction.*Chicago: American educational research institution.

Corwin.Barker. R. G., & Gump, P. (1964).*Big school, small school.*Stanford, CA:Stanford University Press.

Hewitt, D. (2008). *Understanding Effective Learning.* Buckingham: Open University Press.

Srivastava, N. (2006). *Educational Psychology.*Global Media.

Stockard, J., & Mayberry, M. (1992).Effective educational environments.Newbury Park, CA: