A Study of Non-cognitive Variables of Academic Achievement at Higher Education: Nominal Group Study

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Abstract

This study aimed to focus the non-cognitive variables of academic achievement considered helpful for better performance at higher education. The study was conducted by applying the Nominal Group Technique (NGT) and fifteen university students were selected to participate voluntarily. The study was organized under NGT protocol of silent generation of ideas; sharing ideas (round robin process); group discussion; voting and ranking. Preferred ranking against thirty non-cognitive variables identified during NGT process were marked and arranged on the basis of mean values calculated for each item. High academic expectations among students was ranked as most preferred variable of their academic achievement at university level, whereas referencing the material and its citation was considered the least ranked item in this regard. This study provides the discussion about thirty factors as per its priority ranked by participants. The study recommends the guidelines for arranging better means of resources and services at large.

Keywords: Academic achievement, Higher education, Nominal group, University students

1. Introduction

Pakistan is a developing country and got its independence on 14th August, 1947. Pakistan first educational conference held in November 1947 determined guidelines for its educational policy and programme. In a message of Quaid-e-Azam (founder of Pakistan) addressed in the conference said:

> "The future of our state will and must accordingly depend upon the type of education we give to our children, and the way in which we bring them up as future citizens of Pakistan. We should try, by sound education, to instill into them the high sense of honour, integrity, responsibility and selfless service to the nation."

The provision of education is considered the responsibility of state in Pakistan and so government has arranged institutions from primary to higher level of education. Both public and private institutions are serving the nation at all levels of education. Higher education in Pakistan is monitored by Higher Education Commission (HEC). To develop the students into productive citizens, universities strive to develop the desired capacities among pupils. The developments of physical, social, emotional, moral, mental, intellectual, ethical and spiritual aspects

of students are matured so that they may lead their abilities by exploration of career interests (Whitt, 1997). That is why the important aims of a university education are of course to help a student to learn not only while he is engaged in course of higher education but also to help him to continue to learn throughout life. Quality of education rests mainly with the students, who have to care for their own educational progress and career. The training of high level scientific manpower is a matter of vital national concern. The development of higher education is thus connected to economic development (Sheikh, 1998).

At the time of independence the literacy rate was only 13.2% with the female literacy rate being only 8.6%. There were only 8,413 primary schools, 2190 middle schools and 408 high schools, only two universities and no professional college (Viewstonews, 2010). The table 1 indicates that present status of 2010 for private and public universities (including degree awarding institutions) recognized by Higher Education Commission Pakistan.

The objectives to which higher education respond have both national and international dimensions, which may be briefly stated as follows (Kenneth, 1976),

a) National objectives of higher education include:
   i. Focus informed attention on the most serious national problems.
   ii. Strengthen the capacity to solve urgent local and community problems, such as food and nutrition, health and environment, employment and human resource development, housing, planning, urban in migration, and equity.
   iii. Broaden and strengthen the indigenous capacity to absorb and advance science and technology for development; promote accumulation and transfer of skills.
   iv. Disseminate and apply more effectively existing knowledge as well as art and culture.
   v. Promote national integration.

b) International objectives of higher education include:
   i. Improve the country's position in international markets.
   ii. Develop capabilities to deal with international problems, such as the monetary system, scientific problems with worldwide sources of knowledge and the environment.
   iii. Participate in international dialogues on issues of human well being and make more effective contributions to the world community of nations through cooperation at the bilateral, regional, and international levels.

The students at universities are so prepared to meet the national as well as international objectives of higher education. Scott (2000) states four dimensions for preparing the students at higher education by inspiring and enabling individuals to develop their capabilities to the highest levels; increasing knowledge and understanding; serving the needs of the economy; and shaping their abilities for a democratic and civilized society. Kapur (1997) declares that at university level, target is to bring about desirable modifications of intellectual, social and emotional behaviours among students, faculty members and citizens altogether. Higher education is therefore the highest part of the education system, in terms of students' progression, the acquisition of education qualifications, its status and its influence over the rest of the educational system.

The quality of faculty and students, infrastructure, development of science and technology, funding deficiencies and good governance of universities call for responsiveness to market forces and adoption of new curricula. Such emerging challenges of the 21st century have positioned higher education to play a critical role in the international as well as in the national contexts (Peril and Promise, 2000).

The academic achievement of university students is seen as a process for transforming inputs into productive outputs which can be broadly classified as relating to either teaching or research. It also includes any measurement in the knowledge of students, whether or not they complete their studies. Research is shorthand for any increase in knowledge generated by the institution, in the form of publications, patents, development works, and the like. Many university activities, notably the preparation of research degrees, combine 'teaching' and 'research' as joint products.

There are multiple forms of development that institutions of higher education provide to students (Allen, 1992; Carroll, 1998). Academic development also depends upon the arranged campus facilities like libraries and computer laboratories that support student learning (Allen, 1987; Tinto, 1993). Another variable of academic achievement which is needed for comprehensive development of students at higher education environment is emotional development. This support can take the form of providing assistance with coping or serving as a

buffer in times of crisis (Cohen and Will, 1985). Still another form of development beneficial to university students is social development. In the context of the higher education environment, social development relates to the friendship and social networks formed by students. Student clubs and organizations are examples of social development networks. Participation in athletics and intramural sports provides social development for some students (Mallinckrodt and Leong, 1992). Social environment provided by home and parents influences the way in which students view education. This can take place through course choice, career options, and overall higher educational aspirations (Teachman, 1998).

Lack of student effort, poor study habits, inadequate academic preparation, and lack of parental support produce academic difficulties among students (Wambach, 1993). This research identifies the variables of academic achievement which the university students consider useful for their better performance. Academic achievement is associated with cognitive as well as non-cognitive variables (Dezmon, 1995). The cognitive variables are the academic-grades, class ranks, test scores, scholastic aptitude test scores. Whereas all other variables other than cognitive variables are non-cognitive variables associated with the academic achievements of students and are of much importance. The total environment contributes for individual performance and so economic and social advantages contribute to academic achievement of students (Steele, 1992). It is also observed that students with financial problems achieved lower grades than students without such problems. Therefore the non-cognitive variables associated with academic achievement are considered much important for arranging proper learning environment at university level.

2. Methodology

2.1 Data Collection Technique

The data was collected through by using nominal group technique. The Nominal Group Technique (NGT) is a participative exercise, which can be used with small groups to obtain an agreement and consensus regarding a particular aspect. This technique provides a structured method of collecting and organizing the thoughts of a group in a way that prevents the originator of individual thoughts becoming known (Syque.com, 2010).

2.2 Participants

Fifteen participants were selected conveniently at Masters level programmes from five Departments at Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi, Pakistan. All students agreed to participate in the exercise. The fifteen participants were given seats far apart from each other so that there would be no consultations between them. This would give each student a chance to think of the desired answer of the question. The whole process was done in following stages:

2.2.1 Introduction and explanation

Participant information sheet was prepared containing the topic, its purpose and the steps of NGT with the procedures to follow in study were distributed. The volunteer participation was inquired and it was informed that the main purpose of research was to learn about knowledge, experience and unique insight visions of participants through NGT.

2.2.2 Silent generation of ideas

The participants were asked to work independently at this stage and to write as many ideas as possible to the topic. They were also told that these ideas need to be personally believed by them to be true. To promote open disclosure and increase response volume, participants were informed to simply read a single response from their list and without any rationale and also not to relate it to other responses at this stage. They were asked to record all ideas on worksheet, which they thought were influential ideas for topic.

2.2.3 Sharing ideas (Round robin process)

During this stage, participants were invited to share and refine the ideas generated by them. The facilitator recorded each idea on flip chart using the words spoken by the participant. The round robin process continued until all ideas were presented. Participants were encouraged to write down any new ideas that may arise from what others share. This process ensured all participants get an opportunity to make an equal contribution.

2.2.4 Group discussion

This stage provides a serial discussion for clarification of ideas. Participants were invited to seek verbal explanation or further details about any of the ideas that colleagues have produced that may not be clear to them. The facilitator's task is to ensure that each person was allowed to contribute and that discussion of all ideas is thorough without spending too long on a single idea. It was important to ensure that the process may remain as

neutral as possible, avoiding judgment and criticism. The group was asked to suggest new items for discussion and combine items into categories, but no ideas should be eliminated.

2.2.5 Voting and ranking

The participants were then asked to rank the ideas independently priority wise. They were asked to give priority 1 to such item which they felt had helped them maximum for their academic achievement at higher education. The ranking were collected by the researchers and summed up for each item to obtain an overall ranking for that item. This gave an average ranking for all the items.

3. Findings and discussion

All institutions of education are established by society created and sustained for the primary purpose of learning, discovering, fostering and communicating knowledge. Students come to universities with their minds already stuffed with ideas, habits and attitudes and utilize such non-cognitive variables associated with their academic achievement for showing better performance at university education. Such abilities nurture in proper learning environment with the help of these non-cognitive variables.

High academic expectations made towards students at university level were considered as most preferred variable for their achievement. No doubt the higher expectations motivate the students throughout the life. Such expectations are the desire to achieve their future goals and to maintain high standards in this regard. For students, the second most preferred variable associated with their academic achievement was regularity. It is obvious that regularity among students makes them consistent in studies and support for their good performance.

No doubt parents who are supportive and critical are likely to encourage children in their academic achievement through academic, financial, moral and emotional support (Herbert, 1996). It is often said that parents' interest is more needed at junior level than higher education, as they become more independent. It is also interesting to note the judgement about parents' interest as a helpful variable of academic achievement at higher education and got its preferred rank of VI (mean ranking 5.57) for promoting students for good performance at Higher Education.

Interacting with friends provides mutual circles which may enhance their interest in instructional and non-instructional activities (Saleem, 2001). Good peer relationship also helps increasing the learning curve (Foy, 1994). Similar future plans of friends as an inspiration for showing good performance at higher education was ranked XVI and communication with peer groups as a helping matter was ranked XVII, which clearly indicates that such interaction is helpful for promoting quality performance at higher education.

Other than supportive elements in environment, student's individual efforts also count for their success (Constanino, 2002). Some students indicated that it was their own inherent desire and self motivation (priority IX, mean ranking 6.30), consistency of asking questions (priority X, mean ranking 6.50), intense study habit (priority XII, mean ranking 7.20), book consultation (priority XI, mean ranking 6.70), and spirit of confidence (priority XIV, mean ranking 8.57) that had shaped their performance better at university level.

Last five rankings about art of criticism (priority XXVI, mean ranking 9.67), imaginative & creative skills (priority XXVII, mean ranking 9.80), writing skills (priority XXVIII, mean ranking 10.80), emphasis on computer practices (priority XXIX, mean ranking 11.00) and reference material & citation (priority XXX, mean ranking 11.40) were the aspects that were reported as supportive variables associated academic achievement. Present study confirms the need for improving the computer practices at universities as it was ranked the second last variable to support their academic achievement. Although it has already been noticed by Higher Education Commission in Pakistan and many facilities are now available for their online access at global level, yet much have to be done to meet the target of quality education.

4. Recommendations

- Students should be encouraged to be life-long learner and provide opportunities for teachers to increase their knowledge of carrier paths in higher education.
- Guidance and counselling services be initiated to help the student for building a good learning environment according to their individual needs and individual differences.
- System should be developed to help parents to garner a more positive linkage with educational institutions and should show their interest with studies of their children at higher education, although the level of independence at higher may change towards their children. There is still need to encourage students' participation in academics and co-curricular activities by parents also.
- Universities should provide online resources to students and encourage research environment as desired by Higher Education Commission, Pakistan.

- In order to enable universities to generate powerful production, adequate facilities in terms of physical, financial, residential, laboratories, libraries, student support services and a congenial academic atmosphere must be provided.
- This research was delimited to master's level students, future researchers in the same area are suggested to consider undergraduate students for their Nominal Group sample which may generate more generalized results.

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Table 1. Universities and degree awarding institutions in Pakistan

Region	Universities	Public	Private
Azad Jammu and Kashmir	4	2	2
Baluchistan	8	6	2
Federal Area	16	13	3
Gilgit-Baltistan	1	1	-
Khyber-Pakhtoonkhwa	24	15	9
Punjab	41	22	19
Sindh	39	14	25
Total	**133**	**73**	**60**

Source: HEC, 2010, http://www.hec.gov.pk/OurInstitutes/Pages/Default.aspx

Table 2. Mean score ranking of variables of academic achievement by university students

S#	Items	Mean Ranking	Priority
1.	High academic expectations	2.37	I
2.	Regularity	2.97	II
3.	Career goals and subject relation	4.37	III
4.	Sense of competition	4.87	IV
5.	Guidance and Counselling	5.30	V
6.	Parents' interest	5.57	VI
7.	Suitable home environment	5.60	VII
8.	Emotional support	5.70	VIII
9.	Self motivation	6.30	IX
10.	Consistency of asking question	6.50	X
11.	Book consultation	6.70	XI
12.	Intense study habits	7.20	XII
13.	Co-curricular activities	7.77	XIII
14.	Spirit of confidence	8.57	XIV
15.	Cooperative behaviour	8.60	XV
16.	Similar future plans of friends	8.70	XVI
17.	Communication with peer groups	8.73	XVII
18.	Home work tasks	8.81	XVIII
19.	Matured discipline	8.80	XIX
20.	Time management skills	9.10	XX
21.	Emphasis on English Language	9.20	XXI
22.	Listening skills	9.40	XXII
23.	Emphasis on conceptual learning	9.53	XXIII
24.	Observation and discussion skills	9.60	XXIV
25.	Attitude in taking notes	9.63	XXV
26.	Art of criticism	9.67	XXVI
27.	Imaginative and creative skills	9.80	XXVII
28.	Writing skills	10.80	XXVIII
29.	Emphasis on Computer practice	11.00	XXIX
30.	Reference material and citations	11.40	XXX