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The Applicability of Course Experience Questionnaire in Indian Students Context

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ABSTRACT

The present paper aims to validate CEQ in Indian student context. Student's responses were recorded by means of a 32-item questionnaire. Factor analysis was run to get the dimensions. Findings show seven dimensions as the output of factor analysis. CEQ was developed as a measure for course experience in Australia in the 80s. It is developed on the conjecture that student's impression of their course and teaching techniques affect the outcome i.e. their learning and therefore can be considered as a valid measure of student course experience. Over the years, the authenticity of CEQ has been established by extensive research by Australian and British higher education institutes. However, there have been limited studies on CEQ on non-Western countries or countries that do not have English as their native language.

Keywords: Student, Experience, Course, ANOVA, CEQ

1. INTRODUCTION

Maintaining a high standard of education and research are the foremost goals of institutes of higher studies. Until a few decades, earlier most of the surveys for measuring the performance of the colleges focused on research activities [1]. However, in the last few decades with the expansion of post-secondary educational institutes in countries all over the world people have become concerned about the standard of education in these institutes. Due to the increasing public liability, institutes are conducting many quality evaluation surveys [2, 3, 4].Thus, the evolution of diverse approaches to assess the condition of instruction in higher education has become a crucial topic in higher education analysis. Fascinatingly, experimental evidence depicts that students stand as the most important source to analyze the quality of education by delivering genuine and dependable results [5]. Since the early 1980s, there has been an increase in interest in the advancement of performance indicators for measuring the education standards in the institutes of higher studies. Course Experience Questionnaire (CEQ) is the most eminent indicators that have been extensively employed for measuring university teaching standards built on student assessment. The purpose of this study is to validate CEQ in the Indian context.

The rest of the paper is arranged as follows. Firstly, the development of CEQ, its establishment in English speaking countries has been discussed. Secondly, implementation of CEQ and its need in Indian institutes has been explained. Finally, the analysis and conclusion have been shown.

2. LITERATURE REVIEW

2.1 Development and Establishment of CEQ

CEQ was developed as a measure of teaching quality in Australia in the 80s. It is developed on the conjecture that student's impression of their course and teaching techniques affect the outcome i.e. their learning [6]. CEQ records the teaching standard and demonstrates the sameness between the educational components in those facets of higher learning that students can measure. CEQ is used to measure only those facets of teaching components, which are encountered by students personally.

The abstract of CEQ is that student's discernment of teaching influences their approach to learning [7]. As shown by the studies, student's perspectives towards learning are consistently associated with the teaching conditions [8]. The orientation of this relation was presumed to be unidirectional. But in another study, it was indicated that the correlation between the recognition of learning conditions and approach towards studying was bidirectional i.e. study behavior affects the perception of learning conditions and perceptions of learning conditions affect study behavior [9].

The first version of CEQ comprised of 30 questions. The instrument was done on five aspects, "good teaching, clear goals, and standards, appropriate assessment, appropriate workload, the emphasis on independence" [11]. Though the psychometric properties were confirmed by different studies [10, 11], its shorter version was developed later, CEQ 25 [12]. It consisted of a new scale, 'Generic skill scale'. Generic skill scale recorded the contribution of the higher education and of the specific course in strengthening the employability skills of students. It included six items concerning how students perceived their course to enhance their abilities of teamwork, analytical skills, problem-solving skills, self-assurance in solving new problems, planning and communication skills. Department of Employment, Education, and Training, Australia [13] developed the final and most commonly used version of CEQ, CEQ 23.

Over the years, the authenticity of CEQ has been established by extensive research by Australian and British institutes for higher education. However, there have been limited studies on CEQ on non-Western countries or countries that do not have English as their native language. The limited studies include an earlier CEQ study in Hong Kong [14], in

Malaysia [15] and in Netherlands. The findings of the Hong Kong-based study were inconsistent with their Western counterparts. Whereas the results of studies in both Malaysia and Netherlands were promising.

2.2 Indian University Context

The higher education system in India faces the same challenges now, which western countries and Australia were facing in the 1980s. The number of universities in India has risen from 20 in 1950 to 677 in 2014, i.e. 34 times in a span of 64 years. There were 500 colleges in 1950. The number rose to 37,204 by 2013. The increase has been both in public and private institutes [18]. Recently 'Ministry for Human Resource and Development' (MHRD) has come under criticism for paying attention to just increasing the number of institutes without prioritizing their quality. Furthermore, the declaration by Times Higher Education (THE) has demonstrated that no Indian institution occupies a place in the top 200 of THE Top World University Ranking 2016.Similarly; Indian educational establishments continue to maintain their not so promising positions in QS World University rankings with not a single university in the top 200 in the year 2016.

With regard to this matter, it is fitting to assess the standard of instruction in Indian universities, as it is a parameter for performance indication in higher education. Yet, investigation associated with the teaching standards in Indian educational institutions was confined owing to the absence of a unique standardized Indian version teaching standards questionnaire established on undergraduate assessment. We have used 'Course Experience Questionnaire' in our survey to assess the standard of instruction as its relevance has been established in many countries. Through our analysis, we hope to find out how relevant it is in the Indian scenario.

In non-English speaking countries, cross-cultural adaption procedures were applied to ensure CEQ's effectiveness. The main work under this was a translation of questions into the native language from English. The questions were forward translated and then backward translated before being validated by experts. The back and the original CEQ were analyzed so as get the comparable language and to maintain a similar level of comprehensibility and interpretation. Such adaption will not be required for the application of CEQ on institutes based in urban India. Though the native language of Indians is not English, the majority of students enrolled in a graduate degree program in urban institutes know at least basic English with most being fluent in English. India ranks fourteenth on the English Proficiency Index (EPI).

The results of this study can contribute significantly to improving the scenario of Indian higher education.

2.3 Questionnaire and its Relevance

Student's responses were recorded by means of a 32-item questionnaire that comprised of a 5 point Likert Scale. Questions 1–23 are aimed to indicate five characteristics of assessed quality of teaching in specific scholastic programs: Good Teaching, Clear Goals, and Standards, Appropriate Workload, Appropriate Assessment, and skill development.

The first six questions are based on the quality of teaching. The response to these questions indicates the average teaching quality students experienced during the course. The measure is an indication of the gap students feel between the teaching quality they get and what the quality they need to get the most from the course. The next four questions are based on clarity of goals and standards. The response to them reflects how much students were informed about the course and the standard of work expected from them. There are three questions based on the assessment. The response to them is higher if the examinations focused on memory based questions. The next four questions are based on workload. The response to these indicates if the workload was perceived as too heavy and promoting rote learning instead of deeper understanding. The next six questions are based on skill development. They judge how much the course has developed the employability skills like analytical skills, team working, planning, communication, and problem-solving skills. The response to next three questions can be used to evaluate the overall satisfaction level of students with course, faculty, and institution. Next three questions analyze the loyalty developed by students for the course and institution. In these sections, students have to response if they will prefer the same course or institution for higher studies. In the last three question students have to answer if they will recommend the course or institution to others.

Indian education system is criticized for promoting rote learning i.e. for promoting the surface approach of learning instead of deeper methods of learning. According to a survey conducted by a company Aspiring Minds in 2014, only 18% of the graduate engineers are employable as a software engineer. The employability rate falls to single digits for core branches. The reason un-employability ranges from lack of soft skills to the outdated syllabus and to ability to apply the learned concepts.

It has been concluded in many studies that student's approach towards learning is directly related to their perceived course experience or learning environment [6, 8, 16]. The approach towards learning has been categorized into two methods- deep and surface approach. Deep approach implies studying to understand the course subjects while the surface approach is just memorizing the concepts without giving much thought to its meaning. It has been concluded that when students find teaching environment to be supportive, objectives of studying to be coherent and are encouraged to be independent in their studies, then their learning approaches tend to be deep. However, when the students find their negative practices like improper evaluation, excessive syllabus or originality and creativity not being encouraged, influencing their institute's environment their study approaches tends to be the surface methods. Ironically, an increase in teacher's efforts was discovered to be influencing surface approach rather than deep approach.

The increase in surface approach with the increase in efforts of the instructor is one of the downsides of the teacher-centric approach of teaching. This has been studied on Chinese students but it can be very well applied to Indian Universities.

Both Chinese and Indian education systems are criticized for being authoritarian and teacher-centric. This leads to non-inclusion of students from their learning process and discourages them to be independent or creative in their course. In a study, it was found out that Chinese students, like the students from the USA and Hong Kong, want the teaching to be encouraging of creative and collaborative work [17]. In another study it was shown that 93% of undergraduate students do not study the lessons before classes, 75% hardly ever made a study plan and 78% never discussed the classes with their friends. Comparisons of teaching methods in china and USA has shown that Chinese universities assume that students do not understand their course and lack the ability of self-study whereas universities in the USA assume that students have a strong understanding of their studies. No such parallel studies have been conducted in India (check) to the best of our knowledge but the results of research on Chinese students can be assumed true for Indian students and universities as there are similarities in culture and economy.

3. METHODOLOGY

The survey was carried out on a batch of 200 undergraduate students pursuing technical education in Delhi. Data was collected from August and October 2016. The institute is among the best technological institutions in the country and students are admitted based on Joint Entrance Examination, which is a countrywide test for admission into tech colleges across India.

Student's responses were recorded by means of a 32-item questionnaire that comprised of a 5 point Likert Scale. Questions 1–23 are aimed to indicate five characteristics of assessed quality of teaching in specific scholastic programs: Good Teaching, Clear Goals and Standards, Appropriate Workload, Appropriate Assessment, and skill development. All aims of the survey were described to the respondents and privacy was secured. Resistant or unenthusiastic students were not taken into consideration. All doubts raised by the respondents were explained to establish optimum response. SPSS 16.0 was used for data analysis.

4. FINDINGS AND ANALYSIS

4.1 Descriptive Analysis

In total, 82 students were female and 118 were male. Most respondents were aged 17-22 and majority had their college in their home city. Classes and books were the most preferred study material and nearly all students preferred deep learning to surface learning. 53% students were ambiverts and most of them were day scholars.

The attendance of most of the students was in the 65-85% bracket.

B. Sampling

Table 1: KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.825
Bartlett's Test of Sphericity	Approx. Chi-Square	1166.085
	Df	253
	Sig.	.000

The KMO calculation of sampling adequacy index was 0.825, whereas Bartlett's test of sphericity was significant with 0.000. This revealed that the data were suitable for factor analysis. Table 1 shows that Principal Component Analysis with the Promax rotation method yielded seven extracted factors.

Table 2: TOTAL VARIANCE EXPLAINED

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.8	25.2	25.2	5.8	25.2	25.2	3.6	16.0	16.0
2	2.1	9.4	34.7	2.1	9.4	34.7	2.3	10.0	26.1
3	1.5	6.6	41.4	1.5	6.6	41.4	2.1	9.5	35.6
4	1.4	6.2	47.6	1.4	6.2	47.6	1.9	8.3	44.0
5	1.2	5.5	53.2	1.2	5.5	53.2	1.6	7.2	51.2
6	1.0	4.6	57.8	1.0	4.6	57.8	1.3	5.9	57.2
7	1.0	4.4	62.3	1.0	4.4	62.3	1.2	5.1	62.3

Extraction Method: Principal Component Analysis.

According to table 2, the total variance expressed by the first factor i.e. skill development was the highest at 25.294%. This factor comprised of all six factors of SDS scale and reflected the interpretation of student responses based on analytical skills and communication skills, problem tackling abilities and teamwork. The second factor contributed about 9 percent of variance explained. This factor informed participants' views of the standard of teaching in the programmed and comprised of GTS2, GTS4, GTS5, and GTS6. Moreover, both the third and fourth factors explained about 6 percent of the variance and measured student's views on assessment and workload respectively. The third factor consisted of all three components of AAS scale and an additional CGSS4. The fourth factor reflecting workload contained all factors of AWS scale except AWS2. Variance explained by the fifth factor depicting clarity of goals and standards was about 5% and took CGSS1, CGSS2, and CGSS3 into account. Both the sixth and seventh factors explained about 4% of the total variance. While the sixth factor only considered GTS1, the seventh factor was made up of GTS3 and AWS2. All these variances are after initial eigenvalues. The total variance of all seven factors was 62.33%.

A principal component extraction technique using Varimax rotation was used. Items were grouped into seven factors with 23 items Table 3):

(1) Skill development (six items);
(2) Quality of teaching (four items);
(3) Assessment (four items);
(4) Workload (three items);
(5) Clarity of goals and standards (three items);
(6) Time devotion by lecturers (one item); and
(7) Clarity and ease of understanding (two items)

Table 3: PRINCIPAL COMPONENT ANALYSIS

Items	1	2	3	4	5	6	7
V20	.798						
V23	.762						
V21	.761						
V22	.680						
V18	.662						
V19	.638						
V6		.784					
V5		.684					
V4		.676					
V2		.608					
V13			.796				
V12			.746				
V11			.654				
V10			.565				
V16				.816			
V17				.739			
V14				.734			
V7					.776		
V8					.687		
V9					.507		
V1						.827	
V3							.782
V15							.443

5. CONCLUSION

Feedback by students is considered important by institutes unanimously. However, there is a lack of good questionnaire for assessing student course experience and implementing the suggested findings in Indian Higher Education Institutes. With the expansion in a number of institutes and speculated degradation in their quality, it is becoming more and more important to find a standard tool for measuring the student course experience. The reliability of CEQ for obtaining worthwhile feedback has been validated in Australia and other countries.

In this study, the applicability of CEQ in Indian Universities has been validated. Factor Analysis has shown seven instead of five-scale structure but there were only two and one-recorded items in the second last and last factor. Factor Analysis has shown seven instead of five-scale structure but there were only two and one-recorded items in the second last and last factor.

The values obtained in the principal component analysis shows that the Course Experience Questionnaire is applicable in Indian technical institutes for obtaining feedback and implementing the suggestive feedback.

6. LIMITATIONS AND FUTURE RESEARCH

The study has been conducted on a sample of 200 students. Though it included students from every year and branch, it was still a small sample. Larger sample size can show different variations. This survey can be conducted in colleges in different locations, like smaller. There are possibilities of research if researcher link CEQ with marketing outcomes [19, 20, 21, 22]. The result might be different as institutes in urban areas are supposed to be better in most ways. Survey of institutes providing non-technical courses can be done in a similar manner to check the validity of CEQ.

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Appendix

Scale	Label(Original Version)
Good Teaching Scale(GTS)	
GTS1	The teachers devoted a lot of time providing feedback on the work.
GTS2	The teachers did their best to recognize the difficulties faced by the students in their coursework.
GTS3	The teachers taught the syllabus in a lucid and interesting manner.
GTS4	The teachers did their best to make the subject matter interesting.
GTS5	The lecturers on the course motivated the students to excel.
GTS6	The teachers invested a lot of time in commenting on the work.
Clear Goals and Standards Scale(CGSS)	
CGSS1	It was always easy to ascertain the level of work required.
CGSS2	Students usually had a fair idea of what they were accomplishing and what was required from them in this course.
CGSS3	The lecturers explained it right in the start of what they required from students.
CGSS4	It was often difficult to find out that what was required from students in this course.
Appropriate Assessment Scale(AAS)	
AAS1	Too many questions in examinations were only related to facts.
AAS2	To perform well in the course all you require is an excellent memory.
AAS3	The teachers appeared more concerned about what students had memorized than what they had understood.
Appropriate Workload Scale(AWS)	
AWS1	The curriculum was very demanding.
AWS2	Students were mostly given sufficient time to understand the things they had to master.
AWS3	There was a lot of stress due to academics during this course.
AWS4	The extent of work to be done in this course meant it could not all be thoroughly understood.
Skill Development Scale(SDS)	
SDS1	The course has refined my logical skills.
SDS2	This programme has taught the students how to work as a part of a team.
SDS3	This course has helped students to feel more positive when tackling new issues.
SDS4	The programme has improved talking skills.
SDS5	The course helped the students to develop their planning skills.
SDS6	The course developed students' problem-solving skills.