# Teaching Quality Criteria's Importance Levels in Higher Education: A Comparison between British and Chinese Students' Evaluation

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Abstract—This paper through a comparison between the evaluation ratings of teaching quality measuring criteria by British and Chinese students in higher education, classified these criteria into two categories: More Critical Criteria Group (MCCG) and Less Critical Criteria Group (LCCG). The higher education institutes (HEIs) and tutors can correspond to this categorization to determine the amount of effort (resources) input on the relevant criteria focused academic aspects, for enhancing and improving the teaching delivery quality, to ensure a successful and fruitful learning experience for students, and consequentially increase the HEIs' reputation.

*Index Terms*—teaching quality, higher education, measuring criteria, comparison

# I. INTRODUCTION

As a crucial element of a nation's society and economy, Higher education (HE) cultivates and provides the needed knowledgeable professionals for various organizations of a country and the whole world [1]. Without the constructive and continuous contribution of the HE sector, a modern society and world will never become a reality.

In recent years, in many countries, HE has already been treated as a commodity, consequentially the students are regarded the same as those customers consuming products and services from other industries [2]. Thus following the same principle, the quality of HE is one of the key concerns from the customers and other related stakeholders. Especially with the reduction of government funding [3] [4], the customers (students) of higher education need to rely more on their own financing, this results to higher demands from the students on HE quality, which from students' aspect is mainly reflected by tutor's teaching delivery quality. Thus HEIs and their tutor have given extensive attention to the students' evaluation of teaching quality [5] [6].

Teaching quality in this paper focuses on the way/format of teaching conduction and delivery to students in HEIs.

Since quite a few decades, student evaluation questionnaires have been used in HEIs world-wide to assess their tutors' teaching quality [7], [8], and there are also many papers discussing the efficiency and effectiveness of their usage in improving teaching quality in HE sector, although pro and con viewpoints concurrently co-exist. In these questionnaires, the teaching quality measuring criteria are stated as content questions enquiring the performance of tutors corresponding to these questions (criteria) focused academic aspects. If one observes closely the contents, majority of those currently applied teaching quality measuring criteria questionnaires do not contain those criteria related to a HEIs' provision of general service (e.g., IT facilities, etc.). Although these type criteria are not a direct part of the tutors' teaching content, their impact on the teaching delivery efficacy cannot be ignored [9], these indirect but impacting criteria can influence students' evaluation ratings on the tutors' teaching quality; and thus in this research they are also included into quality measuring criteria list.

In many HEIs, the students' evaluation questionnaire usually contains more than a few questions focusing on different aspects of academic performance of the tutors and the HEIs. When the tutors/HEIs received the students feedback on those items, if all or majority of them have received negative feedback needing to be improved (actually even the feedback is positive, it is still necessary to keep a continuous enhancement on the aspects focused by the criteria), it would be very challenging to allocate efforts (resources) to address the improvement needs at the same time for all the criteria focused aspects, in view of the common existence of the resource constraints. Under such a situation, it is necessary to understand the importance levels of the respective criteria, and following the order of the items' importance, HEIs and the tutors can decide the allocation of the resources and attention on the relevant aspects. Also in view of the increased diversity of student cohorts in UK HEIs due to the globalization of HE market and that the Chinese international student group is among the largest oversees cohorts in British institutes, a comparison between Chinese and British students' viewpoints is important to triangulate the understanding of the importance levels of the criteria. The necessity of such a comparison has been endorsed by the contention from Bailey [9], that there are differences with regard to learning strategy and competence trends between Chinese students and their local British peers, and naturally there could be a

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difference between their views on the importance levels of the teaching quality measuring criteria.

Corresponding to the aforementioned issues, this paper reports research findings on two aspects: 1) Whether the viewpoints of British and Chinese students on the importance levels of the teaching quality criteria have differences; 2) The classification of the criteria according to their importance levels into more critical ones and less critical ones, based on students' evaluation ratings.

In the following sections, the teaching quality criteria are summarized through literature review, and then the research methods employed are introduced, after which the summarization and analysis of the collected data are presented, conclusion and future research finalize the paper.

#### II. TEACHING QUALITY MEASURING CRITERIA IN HE

Through literature review, the incumbent teaching quality measuring criteria including those focusing on HEIs' general service provision are summarized into Table I. In this paper, the criteria are organized into three sub-groups: teaching delivery and organization process related, general service resources related, overall outcome of the teaching-learning process.

TABLE I. THE TEACHING QUALITY MEASURING CRITERIA AND CORRESPONDING SOURCE LITERATURE

Category	Criteria and their content	Code	Source literature (direct or inspired from)
	Tutor is good at explanation of various knowledge points	TDMOP1	[3], [5], [6], [7], [10]
	Tutor has made the subject interesting to attract students' commitment towards the learning	TDMOP2	[3], [5], [6], [7], [10]
	Tutor has demonstrated the enthusiasm about the topics she/he is teaching	TDMOP3	[3], [5], [6], [7], [10]
Teaching delivery, and organization process related	The module (course) is intellectually stimulating to arouse and maintain students' learning interest	TDMOP4	[3], [5], [7], [10]
	The criteria used by tutor in marking have been clear and communicated thoroughly to students in advance	TDMOP5	[3], [5], [6], [7], [10]
	Tutors' arrangement on assessment and marking have been fair	TDMOP6	[3], [5], [6], [7], [10]
	Feedback by tutor to students work has been prompt	TDMOP7	[3], [5], [6] [10]
	The comments to students' work are sufficiently detailed	TDMOP8	[3], [5], [6], [7], [10]
	Feedback to students' work has been helpful to clarify issues that students did not understand	TDMOP9	[3], [5], [6], [7], [10]
	Students have been given sufficient advice and support with their studies	TDMOP10	[10], [3], [6], [7]
	Students are able to contact staff when they needed to	TDMOP11	[3], [5], [6], [7], [10]
	All changes in the module (course) and teaching have been communicated effectively to students by tutor	TDMOP12	[3], [6], [10]
	The tutor has well organized the module (course) and run the module (course) smoothly	TDMOP13	[3], [5], [6], [7], [10]
General service resources related	The timetable has been working effectively in alignment with students' activities	OSR1	[10]
	The institute's library resources and services are good enough to suit for students' needs	OSR2	[10]
	Students are able to access general IT resources (computers, networks, etc.) when they needed to use them	OSR3	[10]
	Students are able to access specialised resources (equipment, facilities, rooms, etc.) when they needed to use them	OSR4	[10]
Overall outcome	The module (course) has helped students to present themselves with confidence in classroom or other environments	OP1	[3], [5], [6], [7]
	The students' communication skills have been improved through the various activities within the teaching sessions	OP2	[3], [5], [6], [7]
	As a general result from attending the module (course), students have obtained increased confidence in tackling unfamiliar problems, based on the learnt/enhanced knowledge and skills	OP3	[3], [5], [6], [7], [10]

The criteria in the above table will be used as the core of the questionnaire content to be evaluated of the items' importance through the research.

### III. RESEARCH METHODS APPLIED

The research reported in this paper has been carried out by following five steps:

Step 1, a literature review focusing on the teaching quality measuring criteria in higher education and the related information of student cohorts in UK HEIs.

Step 2, starting from the literature findings, the teaching quality measuring criteria (Table I) have been summarized and classified into the three sub-groups, they will form the content of a questionnaire used in this research for identifying their importance levels from the students' view; and the questionnaire was pilot tested and content validated through a focus group.

Step 3, the survey was carried out and the data for the importance levels of the respective criteria were collected from both British and Chinese students in a UK HEI.

Step 4, the collected data were summarized and then statistically analyzed and compared for examining similarity and difference of their importance evaluation between student groups. In this step, the construct validity of the research has also been examined.

Step 5, the conclusions and future research are presented.

In this research, six undergraduate students have been chosen voluntarily based as focus group participants, who have been studying in a British university for at least one year to evaluate the literature identified teaching quality measuring criteria and also to pilot test the questionnaire with the identified criteria as content.

The focus group rated the appropriateness of the criteria according to a five-point scale (Very appropriate -5 to Very inappropriate -1); the participants were also required to suggest additional criteria if needed.

Meanwhile, the standards of the survey participant selection have also been determined by the focus group: firstly, the participants must be those students who have been in HE study for at least one year; secondly, they must have attended the lectures/seminars from at least six different tutors.

The quality measuring criteria's importance levels in the survey were rated by following a five-point scale: 5 - Highly important, 4 - Important, 3 - Slightly important, 2 - Nearly not important, 1 - Definitely not important.

The survey participants include both British and Chinese business/management undergraduates in an UK HEI. They join the research on a voluntary base; the sample participants contain 31 British and 33 Chinese third year students. The survey was carried out in researcher administered format.

## IV. VALIDITY AND RELIABILITY OF THE RESEARCH

# A. Validity of the Research

The content validity of the survey questionnaire has been endorsed through: 1) the teaching measuring criteria was developed based on literature in the field; 2) the focus group's evaluation of the questions' appropriateness is very positive with average ratings of 4 or above for all criteria. After the content validation, the focus group has also piloted the questionnaire ensuring its clarity and coverage; following the piloting, a minor refinement on the wording of the answering instruction was made, and then the questionnaire was distributed to collect data from the participants.

After completion of the data collection, a factor analysis has been performed to examine the construct validity, which is commonly tested for ensuring research validity [11], [12].

Construct validity has two critical components to be confirmed before it can be claimed as valid: convergent validity and discriminant validity.

Based on factor analysis results, the communality values and loadings of the elements (quality measuring criteria) to factors (respective categories – sub-groups) are all above 0.5 demonstrating the appropriateness of the questions (quality measuring criteria contents) to the research [13]. Meanwhile the elements' loadings to factors are above the threshold value [14], [15], and there are no additional ramified factors. All these points support the sufficiency of small sample size for the research validity [16]-[18]. And the significant factor loadings can primarily attest the convergent validity [19].

The convergent validity has then been further examined through calculating average variance extracted (AVE) and construct reliability (CR). The results of that the AVE values are all above 0.5 and CR values are all above 0.7, together with the strong factor loadings, have evidenced the research's convergent validity.

Also, a comparison has been made between average variance extracted (AVE) and the corresponding squared interconstruct correlation estimates (SIC) to examine the discriminant validity; it turned out that AVEs are all higher than SICs, this situation has ensured a discriminant validity [13].

Thus, from the above analyses, the construct validity can be claimed.

# B. Reliability of the Research

The CR values all being above 0.7 confirm the research's internal consistency [14].

To further examining the reliability of the questionnaire instrument, Cronbach's alpha ( $\alpha$ ) has also been calculated (e.g., [18], [20]). In this research, the Cronbach's  $\alpha$  values are all above 0.7, which have evidenced the survey investigation's reliability.

Thus, one can confidently argue that the research findings are reliable for consequential conclusions.

### V. FINDINGS AND ANALYSIS

# A. Examination of Whether Difference Exists between the Viewpoints of the Two Groups of Students

Before indentifying the different importance levels of quality measuring criteria, it is needed to examine whether the British students and Chinese students have difference on their ratings of the importance levels of the respective criteria. Based on this, a further analysis can be made more focused and realistic.

ANOVA analysis has been used for examining this issue. The criteria with significant between-group evaluation rating differences on importance levels (at a confidence level of 95%), as illustrated in Table II, include: TDMOP1 (Chinese students' evaluation is higher), TDMOP4 (Chinese students' evaluation is higher), ORS1 (British students' evaluation is higher).

TABLE II. ANOVA ANALYSIS ON WHETHER THERE EXISTS BETWEEN-GROUP DIFFERENCE FOR THE VIEWPOINTS ON THE CRITERIA

Criteria with between-group difference	Criteria with no between-group difference	Confidence level
TDMOP1, TDMOP4, ORS1	TDMOP2, TDMOP3, TDMOP5, TDMOP6, TDMOP7, TDMOP8, TDMOP9, TDMOP10, TDMOP11, TDMOP12, TDMOP13, OSR2, OSR3, OSR4, OP1, OP2, Op3	95%

From the ANOVA results, one can see that although there are a few criteria having significant differences between the British and Chinese students' evaluation of their importance, for majority criteria, the two group students' evaluation did not demonstrate noticeable differences. Thus in later analysis, only criteria TDMOP1, TDMOP4 and OSR1 will be analyzed separately for British and Chinese student groups, while the rest criteria will be analyzed treating both group students as a "whole". However, the descriptive statistic analysis reveals that for all the criteria, their importance ratings are all above 4, namely, they are all regarded as important. However, in order to give the HEIs and tutors guidance under the resources constraint to focus their effort on the more critical criteria focused aspects. The highest mean value (which is 4.51) of the importance ratings from the British and Chinese students' ratings in the group as a "whole" and separated will be used as the cut-off line to classify the criteria into different critical levels.



Figure 1. Difference between individual importance ratings and the cut-off mean value for the student group as a whole

Fig. 1 and Fig. 2 depict the differences between the individual importance ratings and the cut-off mean value. Herein the British students group's evaluation ratings

(excluding the criteria needed to be analyzed separated) are used to represent the aforementioned "whole".



Figure 2. Difference between individual importance ratings and the cut-off mean value separately for British and Chinese student sub-groups

Category	Code	Criteria and their content		
MCCG	TDMOP1	Tutor is good at explanation of various knowledge points		
	TDMOP3	Tutor has demonstrated the enthusiasm about the topics she/he is		
		teaching		
	TDMOP5	The criteria used by tutor in marking have been clear and communicated		
		thoroughly to students in advance		
	TDMOP10	Students have been given sufficient advice and support with their studies		
	TDMOP11	Students are able to contact staff when they needed to		
	OSR1	The timetable has been working effectively in alignment with students'		
		activities		
	OSR2	The institute's library resources and services are good enough to suit for		
		students' needs		
	OP2	The students' communication skills have been improved through the		
		various activities within the teaching sessions		
	TDMOP2	Tutor has made the subject interesting to attract students' commitment		
		towards the learning		
	TDMOP4	The module (course) is intellectually stimulating to arouse and maintain		
		students' learning interest		
-	TDMOP6	Tutors' arrangement on assessment and marking have been fair		
	TDMOP7	Feedback by tutor to students work has been prompt		
	TDMOP8	The comments to students' work are sufficiently detailed		
	TDMOP9	Feedback to students' work has been helpful to clarify issues that		
LCCG		students did not understand		
	TDMOP12	All changes in the module (course) and teaching have been		
		communicated effectively to students by tutor		
	TDMOP13	The tutor has organized the module (course) well and run the module		
		(course) smoothly		
	OSR3	Students are able to access general IT resources (computers, networks,		
		etc.) when they needed to use them		
	OSR4	Students are able to access specialised resources (equipment, facilities,		
		rooms, etc.) when they needed to use them		
	OP1	The module (course) has helped students to present themselves with		
		confidence in classroom or other environments		
	OP3	As a general result from attending the module (course), students have		
		obtained increased confidence in tackling unfamiliar problems, based on		
		the learnt/enhanced knowledge and skills		

TABLE III. THE MCCG/LCCG AND THEIR CORRESPONDING CONTENT CRITERIA

Based on the differences and similarity as demonstrated by the figures, following a standard of: 1) for both group students as a whole, if the individual important value is higher than the cut-off value, the criterion will be regarded as more critical; 2) for the British and Chinese students analyzed separately, only if the individual important value is higher than the cut-off value, no matter from which student group, the corresponding criterion will be regarded as more important – The teaching quality measuring criteria are classified into two groups: More Critical Criteria Group (MCCG), less Critical Criteria Group (LCCG). Table III contains the detailed information of the two categorized groups and their content criteria. This classification intends to guide HEIs/tutors in allocating the amount of resources/efforts respectively according to the criteria's importance categorization, to improve the respective criterion focused performance aspect, for students' fruitful and pleasant learning experience; namely for the criteria in MCCG, more and immediate effort/resources need to be involved to enhance the academic aspects focused by them; for the LCCG criteria focused aspects, less resources/effort are needed or action can be postponed to a later time.

#### VI. CONCLUSIONS

This research has classified the teaching quality measuring criteria in HEIs into two groups according to their importance level evaluated by British and Chinese students, with a consideration of the difference from the evaluation between the two student groups. The MCCG and LCCG and their corresponding criteria are listed in Table III for detail. By corresponding to the importance classification of the criteria, HEIs/tutors can effectively allocate their constrained resources to the most needed academic aspects for ensuring a high quality teaching delivery and satisfy or even exceed students demand on learning, and consequentially leading to the enhancement of student learning experience and the reputation of a HEI from a longer term.

The findings of the research can provide an effective guidance of teaching quality improvement for HEIs/tutors, however, this research only focused on the importance level evaluation, the realization levels from HEIs/tutors corresponding to the criteria focused aspects have not been studied. Thus future research can focus on the comparison between the importance level evaluation and realization level evaluation of the criteria focused aspects' performance, such an investigation would be shedding more lights into the field.

#### References

- P. G. Altbach, L. Reisberg, and L. E. Rumbley, "Trends in global higher education: Tracking an academic revolution," A Report Prepared for the UNESCO 2009 World Conference on Higher Education, United Nations Educational, Scientific and Cultural Organization, 2009.
- [2] I. C. L. Ng and J. Forbes, "Education as service: The understanding of university experience through the service logic," *Journal of Marketing for Higher Education*, vol. 19, no. 1, pp. 38–64, 2009.
- [3] R. Chopra, M. Chawla, and T. Sharma, "Service quality in higher education: A comparative study of management and education institutions," *NMIMS Management Review*, vol. 24, pp. 59-72, 2014.
- [4] T. Gruber, I. N. Chowdhury, and A. E. Reppel, "Service recovery in higher education: Does national culture play a role?" *Journal of Marketing Management*, vol. 27, no. 11-12, pp. 1261-1293, 2011.

- [5] P. Ramsden, "A performance indicator of teaching quality in higher education: The course experience questionnaire," *Studies in Higher Education*, vol. 16, no. 2, pp. 129-150, 1991.
- [6] S. Mittal and R. Gera, "Student Evaluation of Teaching Effectiveness (SET): An SEM study in higher education in India," *International Journal of Business and Social Science*, vol. 4, no. 10, pp. 289-298, 2013.
- [7] K. Otani, B. J. Kim, and J. Cho, "Student evaluation of teaching (SET) in higher education: How to use SET more effectively and efficiently in public affairs education," *Journal of Public Affairs Education*, vol. 18, no. 3, pp. 531–544, 2012.
- [8] C. R. Emery, T. R. Kramer, and R. G. Tian, "Return to academic standards: A critique of student evaluations of teaching effectiveness," *Quality Assurance in Education*, vol. 11, no. 1, pp. 37–46, 2003.
- [9] C. Bailey, "The UK lecturers don't teach me anything': Chinese students' expectations of their teachers and implications for UK HE providers," in Southampton Solent University (2005) Conference Proceedings: The Chinese and South East Asian Learner: The Transition to UK Higher Education, September 2005, Southampton: Southampton Solent University, 2005.
- [10] R. Fox. (1999). From Quantitative to Qualitative Assessment: evaluating student questionnaires of teaching effectiveness, University of Salford Institutional Repository. [Online]. Available: http://usir.salford.ac.uk/2112/1/fox9899.pdf
- [11] L. J. Cronbach and P. E. Meehl, "Construct validity in psychological tests," *Psychological Bulletin*, vol. 52, pp. 281-302, 1955.
- [12] D. Westen and R. Rosenthal, "Quantifying construct validity: Two simple measures," *Journal of Personality and Social Psychology*, vol. 84, no. 3, pp. 608-618, 2003.
- [13] J. van Beuningen, The Satisfaction with Life Scale Examining Construct Validity, Statistics Netherlands, The Hague/Heerlen, 2012.
- [14] A. Paswan. (2009). Confirmatory Factor Analysis and Structural Equations Modeling: An Introduction. [Online]. Available: http://www.cob.unt.edu/slides/paswan/BUSI6280/CFA-SEM%20-%20Intro-May%2018%202009.pp
- [15] D. A. Pastor. (2013). Validity: Factor Analysis. [Online]. Available: http://www.jmu.edu/outreach/wm\_library/Validity\_ Factor\_Analysis.pptx
- [16] K. J. Preacher and R. C. MacCallum, "Exploratory factor analysis in behavior genetics research: Factor recovery with small sample sizes," *Behavior Genetics*, vol. 32, pp. 153-161, 2002.
- [17] A. B. Costello and J. W. Osborne, "Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis," *Practical Assessment Research & Evaluation*, vol. 10, no. 7, July 2005.
- [18] C. Wang, Z. Mao, J. O'Kane, and J. Wang, "An exploration on e-retailers' home delivery-strategic elements and their prioritisation," *Business Process Management Journal*, vol. 22, no. 3, pp. 614-633, 2015.
- [19] D. A. Cole, "Utility of confirmatory factor analysis in test validation research," *Journal of Consulting and Clinical Psychology*, vol. 55, no. 4, pp. 584–594, 1987.
- [20] W. Y. Wu, C. Y. Chiang, Y. J. Wu, and H. J. Tu, "The influencing factors of commitment and business integration on supply chain management," *Industrial Management and Data Systems*, vol. 104, no. 4, pp. 322-333, 2004.