

Prospective Avenues of Continuous Formative Assessments for Facilitating Outcome Based Education in Kerala: A Comparative Study

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Abstract – Formative assessments are an integral part in outcome based education. There is no single specified style of assessment in OBE. In this paper, we try to compare the components of OBE followed in the curriculum of MCA in Kerala state in India with some of the developing countries.

Keywords: OBE, Higher Education Outcome-based Education, Assessments, Formative Assessments, Portfolios.

I. INTRODUCTION

In Outcome Based Education (OBE), the ultimate aim of Assessment is to validate the learning outcomes, whether it is for formative or diagnostic or summative. Outcomes are measured on learning results of what students have demonstrated at the end of any learning event, displaying their significant learning experiences. Actions and performances are measured for representing the content (domain knowledge), ideas (skills) and tools used (problem solving abilities) etc., (SPT Malan, 2017). Assessing competence (cognitive, skills and affective) is done on testing the criterion stated in learning objectives (Mpepo, 1998), under a pre-determined external standard. Criterion referenced assessment practice is the preferred mode of assessment (SPT Malan, 2017) in OBE. Learning contents must be assessed not only for core but also Student's Learning Outcomes (SLO) for training needs. OBE's focus shifts from teaching to learning and assessing learning from various learning activities, like cognitive (e.g. tests), group work (e.g. mini-project works), continuous assessment (e.g. assignments) are major features.

This paper presents data collected through a survey administered on 32 trainee participants belonging to 20 different developing countries around the world (Table 1.0), who had visited Chennai, India during January-March 2018, for training at the National Institute of Technical Teachers Training and Research, Chennai, where the authors interacted with them, as the second author was the training programme's coordinator. The participants were undergoing an ICT training programme through Outcome Based Education (OBE) sponsored entirely by the Indian Government. Questionnaire was designed on the influence of ICT of India to these participants. The feedbacks were compared with a similar surveyed data conducted in Kerala from teachers of MCA programmes, as most of the participants of the developing

countries also belonged to similar areas of ICT. Important conclusions have been drawn from the comparative study. The study reported in this paper is only a part of a whole research project, while presentations of other findings are beyond the scope of this paper.

II. BACKGROUND

Assessing learning outcomes should concentrate more on whether students learn successfully rather than when and how they learn something (Spady, 1994). Learning outcomes must be explicitly infused in learning contents so that skills and attitudes could be measured under a standard (Van der Horst et. al. 1997). This indicates, appropriate instruments must be considered for assessing (attitude could be measured from mini-project report or cognitive components could be measured from criterion referenced tests etc.). Knowledge, skill and values are assessed by using varieties of assessment approaches (SPT Malan, 2017). Even a very small learning content must cover the integrated knowledge, skills and values. A critical discussion of the manual based system and online system for assessing unit outcomes has been documented by (Shamsul Muhamad et. al. 2012). The authors have treated certain learning domains such as Basic Core Knowledge, Communication, Entrepreneurship and Professionalism/Ethics and Humanity under the skills (commonly used title) category, namely Cognitive, Psychomotor, Psychomotor and Affective respectively. The authors have argued that learning outcomes could be measured through direct assessment which can be used as indicator for mapping the long term Programme Educational Objectives. Experiments on Computer Programming Course (case study) assessment were carried out and results obtained were used to illustrate that tests were used as tools for measuring cognitive category, while projects were used for measuring affective domain. Supported by these demonstrations, this research work considered three instruments namely tests, assignments and mini-project for survey administered by the authors in the state of Kerala in India, while considered quiz, group activities and others (spelt out specific case) apart from these three for the Developing countries. The paper has considered only the essential

portfolios of assessments according to OBE. Results obtained are from survey conducted on the samples.

III. METHODOLOGY

Interview intervention for survey methodology was considered for the proposed comparative study. Demographic data are presented below. Purposive sampling technique (Sharma, BVS, 1988) has been adopted.

A. Demography of the Samples:

The paper hypothesis that there is a significant difference between India (delimited to the State of Kerala) and developing countries in considering assessment portfolios of Outcome Based Education in the area of Information and Communication technology. The demography of Developing countries: Number of samples (respondents): 32, representing 20 countries as listed in Table 1.0 (consisting of SCAP: Special Commonwealth assistance for Africa Programme; ITEC: Indian Technical and Economic Cooperation programme and the TCP: Technical Cooperation Scheme of Colombo Plan). These participants had visited Chennai for undergoing a two months training programme (February and March 2018) on “ICT Applications in Education and Training”, sponsored by Govt. of India). The demography of Kerala: 18 Institutes offering MCA programmes (10 from

Central region; 2 from Northern region and 6 from Southern region). Number of samples (respondents): 23 teachers of MCA (14 from Central regional institutions; 2 from Northern regional institutions and 7 from Southern regional institutions) with a well mixture of experience and gender.

The sampling is based on ‘Purposive or convenient sampling’ (Sharma BAV 1988). Purpose sampling is selected for the purpose of opinions for feedback analyses, as it is known to represent the total required data that is known to represent well-matched groups. In addition, this selection is also influenced by the fact that the availability and willingness of respondents are also sensitive, but satisfies the purpose of the research Average (excluding lower level schools) : Tests = 2.66; Assignments = 4.55; Mini-projects = 1.483. Average experimental survey of Kerala: Tests = 2.66; Assignments = 1.167; Mini-projects = 1.0.

IV. RESULTS AND DISCUSSIONS

Figure 1.0 shows the distribution of average minimum number of class-tests opined by the participants of the developing countries. The average of average coincides with that of Kerala, namely 2.66. Kyrgyzstan, alone shows relatively high, and appears that the assessment system would match with OBE practices.

Table 1.0

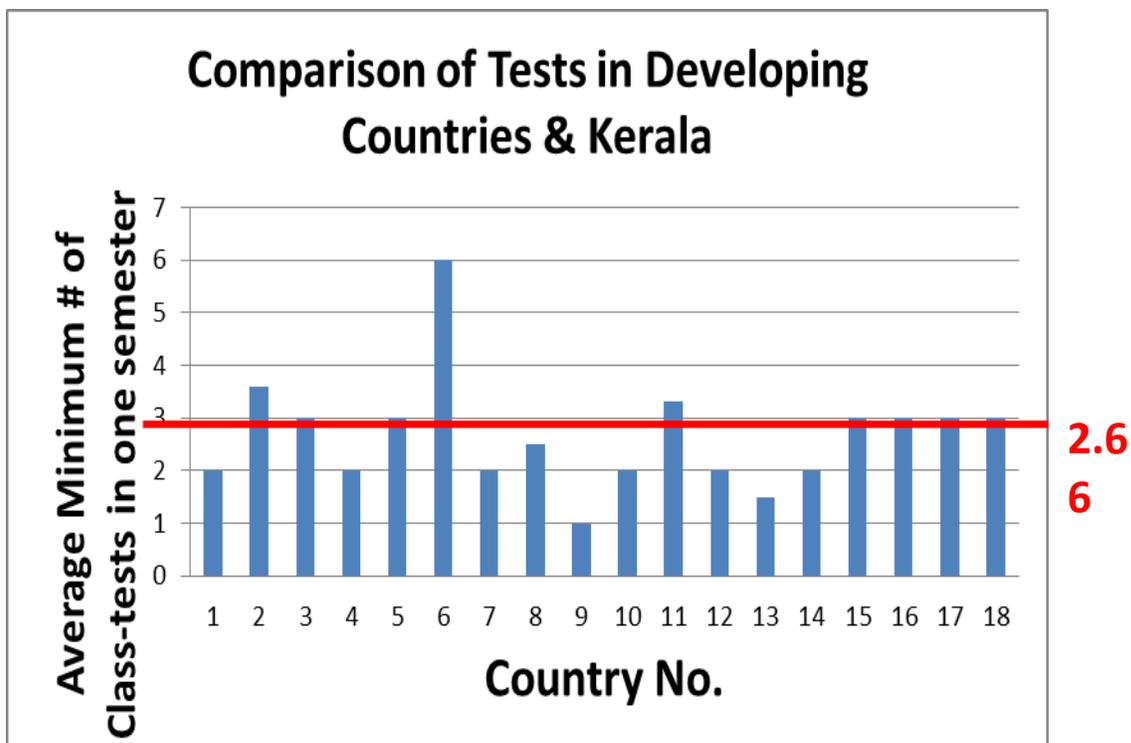
COMPARISON OF CLASS-TESTS CONDUCTED IN DEVELOPING COUNTRIES AND KERALA IN SIMILAR COURSES

Country No	Country (# of responses)	Averaged minimum # of Continuous Assessment-practices followed in One term						Complementing Areas
		Tests	Assignments	Mini-projects	Quiz	Group Activity	Others	
1	Afghanistan (2)	2.0	5.0	2.0				
2	Bhutan (5)	3.6	2.4	1.0			1.0	Interviews/ Book reviewing
3	Ethiopia (1)	3.0	2.0	1.0	3.0	3.0		
4	Fiji (1)	2.0	2.0	2.0				Depends on course type
5	Kenya (3)	3.0	5.5	1.0				Assignment for every topic
6	Kyrgyzstan (2)	6.0	3.0	2.0				Assignment for every practical
7	Mauritius (1)	2.0	3.0	2.0				
8	Mongolia (1)	2.5	4.5	1.5				
9	Nigeria (3)	1.0	3.0	1.5	-	-		
19	Namibia* (1)	2.0	76.0	1.0				*for lower level technician schools

10	Niger (1)	2.0	5.0	2.0			
11	Nigeria (3)	3.3	3.0	1.7		1.0	Using CBT
12	Sri Lanka (1)	2.0	2.0	2.0			
13	Syria (1)	1.5	1.5	1.0			
14	Tanzania (1)	2.0	1.0	1.0			Assignments are mini-projects
20	Tunisia* (1)	12.0	24.0	6.0			*for lower level technician schools
15	Uganda (1)	3.0	2.0	1.0			
16	Uzbekistan (1)	3.0	20.0	2.0			
17	Vietnam (1)	3.0	15.0	1.0			
18	Zambia (1)	3.0	2.0	1.0			

*Not directly compared with MCA Institutions of Kerala

FIGURE 1.0
COMPARISONS ON AVERAGE # OF CLASS-TESTS PRACTICED IN 18 DEVELOPING COUNTRIES WITH KERALA



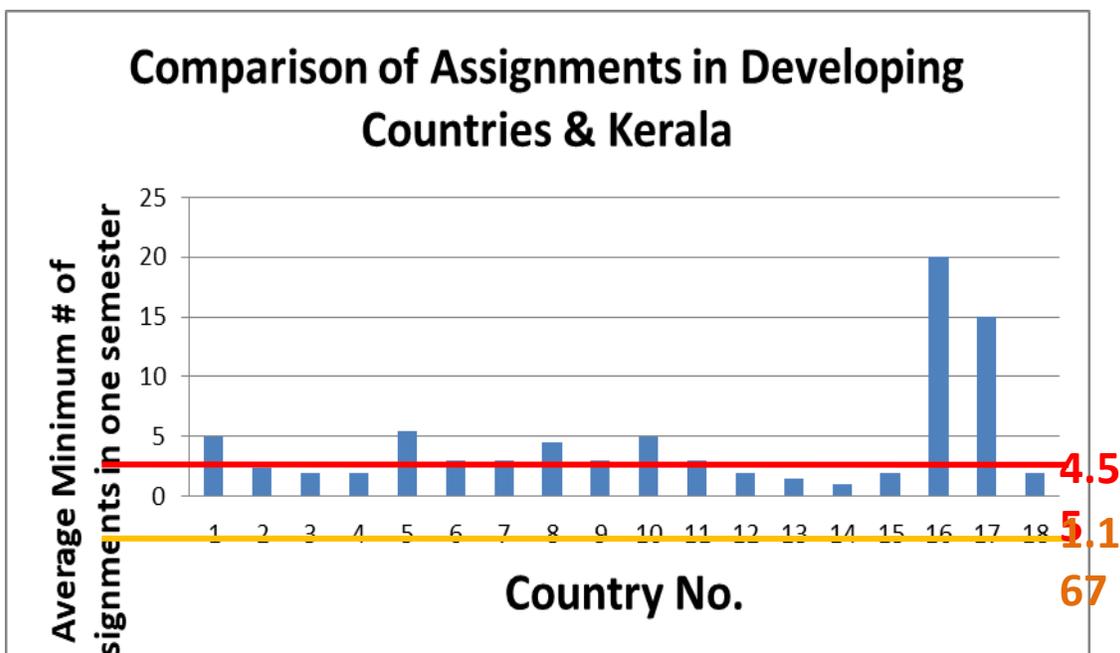
Standard deviation: 1.08147.

In the case of average minimum number of assignments is concerned Figure 2.0 shows average of average value is 4.55 in the case of developing countries, where as Kerala shows a meagre 1.167.

rest of the developing countries, the value becomes 2.93. Even with this value, the average # of assignments practiced in Kerala is found to be grossly inadequate when compared with the average of developing countries

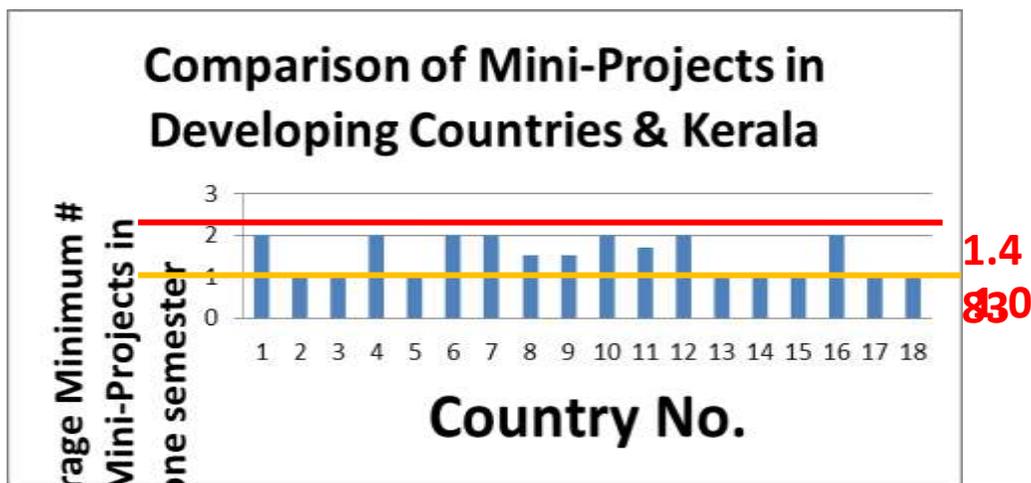
Since standard deviation is also very high, excluding ‘Uzbekistan’ and ‘Vietnam’,the recalculated average of the

FIGURE 2.0
COMPARISONS ON AVERAGE # OF ASSIGNMENTS PRACTICED IN 18 DEVELOPING COUNTRIES WITH KERALA



Standard deviation: 4.95785.

FIGURE 3.0
COMPARISONS ON AVERAGE # OF MINI-PROJECTS PRACTICED IN 18 DEVELOPING COUNTRIES WITH KERALA



Standard deviation: 0.47185

Figure 3.0 shows the distribution of project works, another important component of OBE, the average of average number in developing countries seems to be 1.483, which is higher than Kerala’s 1.0.

V. CONCLUSIONS

Portfolios such as periodical tests, assignments and mini-project works would greatly assist in enhancing continuous formative assessments of the students’ overall progress, as per the principles and practices of Outcome Based Education. Many developing countries across the world are attempting to

create Outcome Based Education in similar problem based subjects like the MCA of Kerala State in India. The study reported in this paper gives alarming results which are brought as conclusions presented below.

While the average number of mini-project works being practiced in Kerala is even though less, is comparable with the developing countries for facilitating continuous formative assessments of students. In the case of periodical tests, the average number practiced in Kerala matched well with that of developing countries. However, in the case of assignments, an important portfolio of continuous formative assessment, the

average number practiced in Kerala is grossly inadequate when compared with Asian countries such as Afghanistan, Vietnam and only partly comparable with some African countries.

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