A Review of Expert System for Assessment and Evaluation of Post Graduate Courses

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Abstract:
This article presents analysis of research evidences on Assessment and Evaluation of Post graduate students. The aims of this study are to examine the nature of assessment and evaluation feedback in the Higher Education through the undertaking of a systematic review of the literature, identify and discuss methodologies, role of evaluator in evaluation and consider gaps within the research literature, discuss implications for future research and practice.

Key Words: Assessment, Evaluation, Scholastic, Non-scholastic

Introduction:
Teachers and students are familiar with words such as examinations, tests, correction of question papers and results. All this has to do with finding out how much a student has learnt. An educational system which does not lay a balanced emphasis on all the three aspects namely, cognitive, affective and psychomotor is likely to produce imbalance in the personality of the student. In actual practice schools and colleges confine themselves to the cognitive development of students committed to their care. Even in regard to cognitive development, schools and colleges are very selective and undertake only scholastic programmes which can be easily dealt with either through the oral method of teaching or through the medium of textbook. The most important constituents of cognitive development namely, the development of the power of discrimination, reasoning, seeking relevance of knowledge to the real life situations, effective communication and power of decision making and so on, are almost neglected. Traditional evaluation have been stressing only information about the subject. In fact, students should develop appropriate interests, attitudes, skill in communicating their ideas to others and ability to learn not only while in school or college but throughout life. It is therefore necessary to improve the present system of examination in such manner that it
• Becomes a better measure of educational achievement and
• Produces desirable influence on classroom instruction, study habits of the students and various other aspects of education.

The importance of developing attitudes interests and values which form the substance of life has never been denied. Only there has been slackness in providing specific learning experiences for their development and systematic evaluation.
Literature Review:

Ridip Dev Choudhury, Khurshid Alam Borbora & Shikhar Kumar Sarma (2013)

Their paper describes a research focusing on the application of expert system for online student assessment. The work encompasses detailed investigation of the subject matter, design and developments of a framework for web based expert system and upon the framework develop a prototype expert system for assessing student’s learning online. The system can be extended with automatic reasoning capabilities with the application of machine learning techniques as a student modeling technique. Since the student model is stored and updated in an external database, for a large number of students, retrieving the student information by the expert system for assessment may decrease the performance of the system. So, application of appropriate data mining techniques/algorithms can solve the problem. The system can also be extended using mobile agent technology in a distributed environment.

Pham Lan Anh (2011)

This paper is based on an overview of the context of teaching English at primary level, examining factors affecting teachers’ assessment practices, namely the policy, curriculum, the learning and teaching environment. Following the emergence of formative assessment as a valuable practice in assisting learning, a number of investigations have been conducted to research whether its implementation in a particular educational context actually succeeds as it is claimed to. Starting from the hypothesis, that primary teacher’ assessment procedures are much influenced by a traditional assessment approach. Finally, this paper reaches conclusions regarding the formative elements in the researched classrooms.

Angela Yung, Chi Hou (2011)

Their research concludes that student learning is a central concern in higher education and accreditation nowadays. Many institutions, programmes, and accrediting organizations are hearing a similar request about student learning outcomes to provide concrete evidence of student academic achievement in higher education and to report on this evidence in a manner that is readily understandable to the public at large. Hence, the public, higher education community, policy makers, and students increasingly seek to use such information as an integral part of making judgments about the quality of accredited institutions and programmes. The main purpose of the paper is to examine recent Taiwan educational policy trends that emphasize scholastic learning outcomes in higher education.

John Hankinson (2011)

This research deals with experimental work carried out in three countries in the Gulf region, (Saudi Arabia, Bahrain and Qatar) between 2006 and 2011. The experiment drew neither on previously published research nor did it attempt to have specific significance for research purposes. The focus in each case was the observation of teachers in their classrooms, and the possibility of their developing self-assessment skills and reflective practices when reviewing their own teaching. A further consideration in devising the experiment was the sustainability of self-assessment techniques at the local school level.
Kyungsook Yeum (2011)

The research presents a model to evaluate any INSET programme in similar EFL settings. First of all, the way different stakeholders set priorities for the particular INSET curriculum need to be examined to see if they share common objectives. Teacher trainees’ needs should be triangulated with the perceptions and understanding of other parties. When their perceived needs are found to be in common, there is a higher possibility for the INSET programme to set up an appropriate curriculum.

J.R.A. Williams and Rachel Bowden (2011)

Their research outlines the background to the first phase of the Ministry of education Malaysia/British Council English Language Teacher Development Programme. It discusses the aims, methods and problems arising from the research for the project baseline assessment. Learning’s from this research are itemized and compared with some current literature. Observations are made concerning the impact on the project of existing assessment systems in primary schools. The programme approaches to teacher appraisal, and current and planned mechanisms for project evaluation are discussed. The paper concludes with a call for the empowerment and participation of stakeholders in assessment processes at all levels.

Abdur Rashid Khan, Hafeez Ullah Amin, Zia Ur Rehman (Feb 2011): Application of Expert System with Fuzzy Logic in Teachers‘ Performance Evaluation

Their research on Regular teachers‘ assessment was suggested to maintain quality in higher education. They have proposed a model of fuzzy expert system to evaluate teachers‘ performance on the basis of various key performance attributes that have been validated previously through subject experts. The fuzzy scale has been designed to map & control the input data values from absolute truth to absolute false. The proposed model was produced significant bases for performance assessment and adequate support in decision making, so the research on the issue can be continued.


This paper deals with fuzzy logic and intelligent decision vectors to handle the quantitative as well as qualitative aspects in measuring the performance of an Educational Institution. Researchers have proposed an unique mathematical model for academic performance synthesis and analysis of an institute. The model was used for crafting decision through fuzzy logic and decision vectors to deliver the suggestions on improvement of academic performance of the institute and to fine tune the model and the decision support mechanism through endurance and more of real time testing. The model was lead to an expert decision support system that measure the permutations and combinations of impact of one parameter on the other and will also help an educational institute to rate its performance in comparison with the expected performance and average performance.

Ms. Niyati Kapoor, Mr. V. Natarajan (Feb 2013): Assessing Scholastic and Non-Scholastic areas of Learning of Primary School 4th and 5th Graders in English, Mathematics and Science
Their research outlines the importance of Scholastic and Non-Scholastic areas in assessing Primary School 4th and 5th Graders. This paper highlights how one can assess the scholastic areas of assessment and non-scholastic areas of assessment (the beyond academic part) of 4th and 5th graders in English, Mathematics, and Science.

**Dr. K. Vijaya, Dr. E. Ravi Kiran (2015): A study on assessment of Non-Scholastic Abilities in Primary School Children**

Their research aims to assess the non-scholastic abilities in primary school children of a co-educational school in Andhra Pradesh. They have taken anthropometric measurements of each student, data relating to students' scholastic performance, family details like income and occupation were also collected from students' records maintained in the school. And from students' review, they have come across the fact that, about 35 (44.8%) of the students showed the highest non-scholastic score of 55-60. Females showed a higher score compared to males which was statistically significant; nutritional status was not seen to have any association with non-scholastic & scholastic abilities of the students. From the review of above literature, it is observed that most of the researchers concentrated on Scholastic aspects and have used traditional approach for assessment and evaluation. To the best of our knowledge, no researcher has contributed towards applying expert system for assessment and evaluation in higher education including Scholastic and Non-Scholastic aspects.

**Summary of Review:**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Researchers</th>
<th>Nature of Assessment</th>
<th>Gap within Research</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Formative</td>
<td>Summative</td>
</tr>
<tr>
<td>1</td>
<td>Shilpa Dev Choudhary, Khanmohi Alamu Babaram, Shikha Kiran Sarma (2015)</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>Phan Van Anh (2011)</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>Anjali Vung, Chi Hou (2011)</td>
<td>X</td>
<td>✓</td>
</tr>
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<td>4</td>
<td>John Hukindu (2011)</td>
<td>X</td>
<td>✓</td>
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<td>5</td>
<td>Kyungsook Youn (2011)</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>6</td>
<td>T.R.A. Williams, Rachel Bovden (2011)</td>
<td>X</td>
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<tr>
<td>7</td>
<td>Abdur Rashid Khan, Navneet Kumar Amin, Zia Ur Rehman (Feb 2013)</td>
<td>X</td>
<td>✓</td>
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<tr>
<td>8</td>
<td>Levi Raj Gupta, Arvind Kumar Dhawan (Jan 2012)</td>
<td>X</td>
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<td>9</td>
<td>Ms. Nitya Kapoor, Mr. V. Naturajan (Feb 2012)</td>
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<td>10</td>
<td>Dr. K. Vijaya, Dr. E. Ravi Kiran (2015)</td>
<td>X</td>
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</table>

Fig 1: Summary Review

**Research Analysis:**

- Most of the researchers have concentrated on Summative Evaluation.
- Most of the researchers have not concentrated on Higher Education for Evaluation.
- Most of the researchers have concentrated on Evaluation of Scholastic aspects only.
No researcher has contributed towards design and development of expert system for assessment and evaluation for Higher Education including Formative and Summative evaluation of both Scholastics and Non-Scholastics aspects.

Conclusion:

Evaluation deals with the collection of evidences regarding changes which occur in the learner's behavior during the teaching learning process. Based on these evidences, interpretation and judgment, the progress of the learner is arrived at and decisions taken. Thus evaluation involves four main sub processes i.e. gathering information, interpretation of information, making judgments and asking decisions. The extent of a students learning needs to be comprehensive. We need a curriculum in which creativity, innovativeness and development of the whole being mark the growth of learners in addition to learning in the cognitive domain. Development of Non-scholastic aspects of the personality such as Life Skills, Attitudes and Values, participation and achievement in Co-Curricular activities as well as Health and Physical Education need to be considered. It is always desirable that while assessing students scholastic aspects and non-scholastic aspects should get together for systematic evaluation.

References:


[19] Dr. K. Vijaya, Dr.E.Ravi Kiran,Md,Mipha. A study on assessment of Non-Scholastic Abilities in Primary School Children. International Journal of scientific research and management (IJSRM) ||Volume||3||Issue||5||Pages|| 2797-2806||2015|| Website: www.ijsrm.in ISSN (e): 2321-3418

