

Proposed Model for Incorporating Pedagogy with Internship Programs

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Abstract

The paper investigates the provision of using automated assessment system for measuring work integrated learning during internship programs. To envisage the current practice, data was obtained by mailing questionnaires to Manager Operations (n1=25) and university interns (n2=25) via LinkedIn. Pearson product-moment correlation $r(50) = +.987$, $p < .01$ indicated high positive correlation between the self-report measures of n1 and n2. The interpretation of the data demonstrated the generic nature of the current practice of internship programs and identified the potential benefits for implementing a pedagogical model of automated formative assessment program at work places as well. The proposed model is designed for transference of measurable periodical assessment from the work places to the universities for ensuring a productive work integrated learning experience for the interns. The paper also examined the limitations in the implementation of the proposed model and the recommendations for utilizing automation to facilitate standardization of assessment process at work places.

Key Words: Formative Assessment, Work Integrated Learning, Pedagogical Model, Automated Assessment

1. Introduction

Internships play a crucial role in university students' career development by offering experiential learning opportunities (Shoenfelt, Stone, & Kottke, 2013). Compared with academic performance experiential learning has unique dynamics due to its specific affiliation with 'hands on' jobs (Gentry, 1990). Universities in Pakistan have introduced several internship programs at different levels in recent years, and simultaneously successful applications have been implemented and assessed in the domain of education (Akram & Malik, 2012; Shaheen, 2008; Noor, 2009). Various studies (Kolb, 1984; Chapman, McPhee, & Proudman, 1995) also demonstrate that interns acquire a more enriching learning experience at work places compared with academic environment.

On the contrary, some studies demonstrate that due to the absence of any rigorous practice of timely assessment, internships do not necessarily reflect the actual merits of the experiential learning experience and with regards to the potential benefits may not be effectively applicable to all interns (Beard, 2007; Thomas, Waugh, & Smith, 2009). Zamra, Ellahi, and Masood (2012) also argue that "An internship can only be a true learning experience if constructive feedback is provided to the interneers. Supervisors should take time to evaluate both a student's positive accomplishments and weaknesses. If an intern was unable to meet their learning objectives, suggestions for improvement should be given" (p. 7). One probable reason of this gap is due to the varying practice of assessment at the University and workplaces: It is an established fact that the notion of evaluating an intern's performance is different from the regular pattern of student assessment in universities.

1.2 Background

The practice of assessing the experiential learning experience has evolved in several aspects: from portfolios (Challis, Mather, Howe, & Field, 1996) to distant surveys (Richardson, Kaider, Henschke, & Jackling, 2009) and online questionnaires (McIlveen, Brooks, Lichtenberg, Smith, Torjul, & Tyler, 2009) to employers' perspective on the competencies of the interns (Zegward, & Coll, 2003; Masum & Lodhi, 2015). The nature of assessment is further diversified at the completion of internship when interns are treated as students once they rejoin universities to complete their degree programs.

Irrespective of the adherence to broader objectives of different programs offered at university, the primary nature of student-evaluation in educational settings is largely dependent on midterm and final written assessments. In view of the fact that universities rely mostly on content approach in comparison to process approach at work places: the students' performance at universities is mostly linked to end of the term examinations. It is certainly in a sharp contrast to skill based performance of the interns. Parallel to traditional methods, the practice of automated assessment systems has also

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become common in educational settings since 1950s, resulting in immense assistance for the teachers in grading their students' assignments which can be split into several sections (Enström, Kreitz, Niemelä, Söderman, & Kann, 2011 & Amelung, Forbrig, & Rösner, 2008). The automated assessment systems are equipped with automatic applications to examine the answers using computer tools that implement a preprogrammed algorithm. Furthermore, the automated the assessments yield reliable results and have also been used at work places as well sparsely along with other methods of intern assessment (Salisbury, 2010). Despite all measures the implication of the gap between academic and work place assessment exist that eventually proves to be ambiguous for students and educators (Pearson, Pearson, & Shim, 2005).

In view of the diversity of assessment methods at work places the paper attempts to streamline academic and experiential learning by implementing an automated assessment system which reflects a pedagogical framework by incorporating work place competencies thereby offering continual monitoring of interns' performance through automated assessment system. Although the concept of automated assessment is primarily embedded in instructional products and educational testing and a pedagogical model in work environment is unique. Furthermore, collaborated efforts between educators and industry with regards to the pedagogical model of automated assessment may not only provide formative feedback (Nicol, & Macfarlane-Dick, 2006) about interns' performance on periodical basis but also assist in forming the effectiveness of internship programs. Moreover, the quantifiable score may be beneficial in the placement of students in their future careers.

Thus the overall purpose of the paper is a) to develop a pedagogical model of automated assessment for work places to monitor interns' performance; b) to incorporating work place skills with academic skills c) to provide periodic feedback of interns' performance to educational institutions.

2. Methodology

The layout of the paper is developed along the following steps: Firstly, the paper reviews the current practice of internship by gathering data from manager operations and interns. Secondly, the paper identifies the gap between education and industry with particular reference to the diverse angles of content versus process and assessment versus performance. Thirdly, a pedagogical model of automated assessment is designed to evaluate interns' performance at work places periodic and continual feedback to interns, work and university supervisors. Lastly, the implications of using the pedagogical model are discussed.

The participants (N=50: Manager Operations: n1=25; Interns: n2= 25) of the study were drawn from Tele-communication sector; banking Sector; Financial Services and Consultancy agencies. Self-report measures of all the participants were obtained via LinkedIn. The respondents were briefly informed about the nature of the research in a covering letter and were assured of confidentiality. The questionnaire administered to n1 and n2 had 10 similar forced choice items for evaluating the correlation between the Manager Operations and interns' choices. The respondents had to choose between option A and B. Table 1 highlights the 3 critical items of the questionnaire.

Table 1: Illustrating Sample Items of the Questionnaire

Items	A	B
1. Feedback of performance to universities:	At the end of internship	Periodical
2. Completion of Internship is marked by:	A letter/ certificate	Detail skills learnt
3. Performance of interns is assessed by:	Descriptive comments	Scaling of Skills

Additionally, Manager Operations were also asked in Section-B of their questionnaire to organize employability skills of the interns in terms of preference. For example: Communication skills; Critical thinking; Language skills; Acquaintance with technology; Leadership qualities; Motivation; Self-regulation; Reflective Skills; Problem solving Skills; and Crisis Management Skills (Masum, & Lodhi, 2015). The section was designed to elicit Operation Managers' preference of specific skill-development in interns. However, Section-B was not administered to the interns.

3. Findings

For the statistical analysis of Section-A was conducted by employing Pearson product-moment correlation. The result yielded high positive correlation $r(50) = +.987$, $p = <.01$ (2 tailed) between Manager Operations and Interns on the forced choice questions.

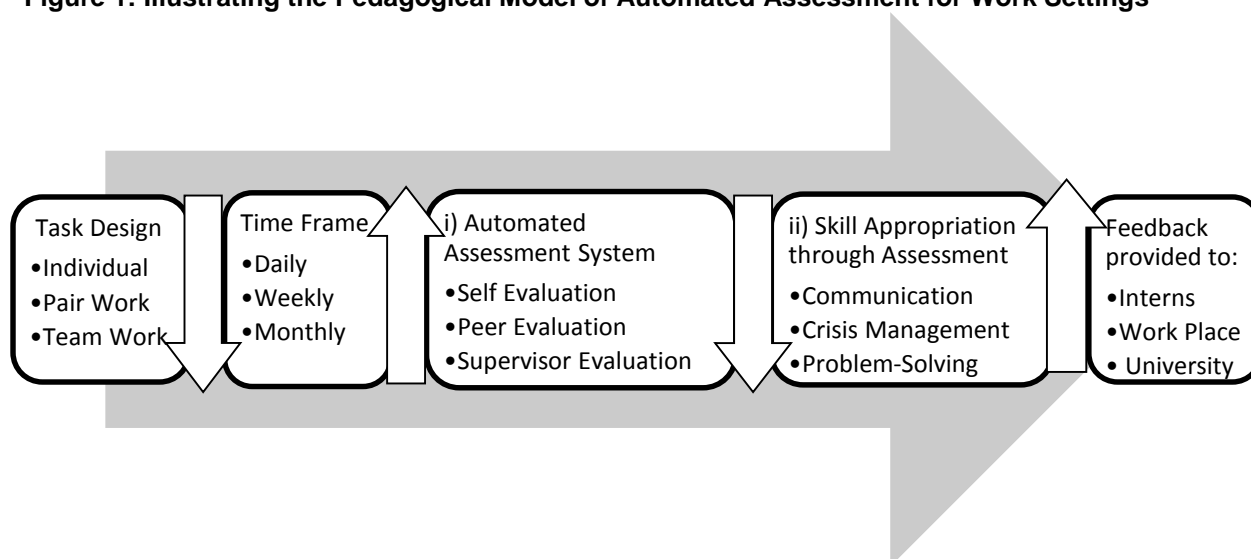
For Section-B, interestingly, all Manager Operations (MOs) agreed on distinct skills varying according to the nature of services offered by the work places. The overall preference for skills in work environment is mentioned in table 2.

Table 2: Illustrating the statistical analysis questionnaire (Section-A) administered to MOs

	Preferred Skills	Mean	SD
1.	Communication Skills	5.7600	3,44335
2.	Critical Thinking	6.0400	3.32265
3.	Language Skills	5.9600	3.45786
4.	Acquaintance with Technology	3.3200	2.89713
5.	Leadership Qualities	4.0400	2.598972
6.	Motivation	5.2000	2.79881
7.	Self-Regulation	5.1600	2.05508
8.	Reflective Skills	5.2000	1.82574
9.	Problem Solving Skills	6.4400	1.89473
10.	Crisis Management Skills	7.5600	1.91659

The findings of the earlier part of the study prompted the framework for the pedagogical model by utilizing the preferred skills by the MOs and incorporating them to design a pedagogical model of automated assessment for the work place. The initial step involved identifying process-dependent skills in work settings and establishing a link between the content-based learning in universities. Some assessment tasks which have been effectively marked automatically in educational setting are: Simple Calculation; Calculated Multi-choice; Description; Essay Matching; Embedded Answers; Multiple Choice; Short-Answer; Numerical; True/False; Third-party question types; Surveys and questionnaires; Multiple choice questions and online Self-evaluation and peer-evaluation. These assessment tasks have been incorporated with preferred competencies of the work place, a pedagogical model is developed (see figure 1).

Figure 1: Illustrating the Pedagogical Model of Automated Assessment for Work Settings



4. Discussion

The paper demonstrated the significance of automated assessment in achieving validity, reliability and continual monitoring of interns in WIL context. The paper also highlighted the prevalent gap between experiential learning and academic learning with regards to the practice of assessment process by obtaining data from manager operations and interns. The findings emphasized the absence of coordination between educational institutions and work places; the valuable academic learning at universities and the enriching experiential learning acquired at work places may not be effectively incorporated by the students and thus learning remains an isolated context dependent phenomenon. The paper has also endeavored to develop a model of automated assessment to improve collaboration between the industry and education for yielding maximum profit from experiential learning through periodic automated assessment.

The proposed model emphasized on the distinct dynamics of the two settings and proposed that automated assessment offers speedy, convenient and continual feedback on interns' performance. It can be streamlined into academic grading for obtaining a degree; eventually providing a more concrete picture of experiential experience. Additionally, the model also indicated a number of specific competencies (for example transference skill) preferred by work-supervisors which are essential for success in the job market; educational settings can also inculcate these skills in students which is also pertinent to create harmony between the two enterprises. Another practical concern addressed in the paper is related to formative or summative assessment; the paper demonstrated the need for formative assessment of interns which can also be communicated to their universities.

Moreover, the paper deduced that the periodical assessment is more favorable for constant monitoring and improvisation of the acquired by the interns. In addition to instructional and practical considerations, automated assessment can offer reliability and consistency by eliminating the element of subjectivity witnessed in the feedback provided by the supervisors at the work places. The bias may be avoided by introducing automated assessment system. The study also demonstrated that the pedagogical model not only helps to bridge the gap between education and industry but also highlights the cultivation of mutually agreed upon skills at both places.

Recommendations are made for future research by adapting academic assessment in line with the parameters of work goals to facilitating the process of transition between the two domains. Jamil et al. (2012) demonstrated that the internship programs provide valuable experiential learning opportunities and a way forward. However, more research on the prospect of automated formative assessment in diverse work place settings can provide more insightful information in future. Additionally, the implications for furthering the prospect of automated assessment projects and academic schemes into the corporate world need to be fully evaluated for success.

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