

An Initial Study on Understanding the Effect of Questions Structure on Students' Exam Performance

S. Wijesinghe¹, K.P.C. Irosha, Thilini Rupasinghe

Department of Applied Computing, Faculty of Computing and Technology, University of Kelaniya, Sri Lanka.

The main challenge in evaluating students' performance is creating effective assessments which appraises students' learning rather than their memory power and the practice. According to education theories, creative and carefully designed assessments can clearly evaluate the degree of learning in students. "Scaffolding" which refers to the degree to which a question guides the student through the problem-solving process is a widely used method in aiding students' learning and conceptual understanding and assessing students' performance in Science and Technology education. The objective of the current study was to understand the impact of exam question structure on the performance of first year undergraduates specifically focusing on understanding the effect of scaffolded questions. In the current Sri Lankan science education context, there is only a limited number of research studies that are available which provides an insight into the relationship between students' performance and question features. Current study which was designed to address this issue was conducted as a part of the Chemistry for Technology course at the Faculty of Computing and Technology, University of Kelaniya, Sri Lanka. In this study, two different structures of the same questions were given to students as a part of an in class quiz. First one was a direct question and the second version (scaffolded question) included the same question in a step by step manner and in the latter version, students had to answer several steps to solve the problem. Marks obtained for the two versions were averaged and compared to investigate whether there is any significance of the structure of the questions towards the performance of students. Average mark for the scaffolded question was 82(± 20) and the direct question was 71(± 35). According to the results, it was clear that the students meet a considerable difficulty in the understanding the direct questions and the scaffolding of questions results in an increase of the performance of students. According to preliminary data, it can be concluded that scaffolding of questions preferentially assist students performance at examinations and surface features such as the structure of the question can play a key role in students' performance at the examinations. Further studies are currently being conducted to understand whether there is any specific correlation between the improvement in performance as a consequence of scaffolding with the gender, school district and students' English literacy.

Keywords: Assessment; Higher Education; Learning Process; Scaffolding

¹ Corresponding author: S. Wijesinghe: Tel.: +94-71-112-8504
E-mail address: chamalika89@gmail.com