Cognitive and Social Factors Influencing Students' Response and Utilization of Facilitator Feedback in a Problem Based Learning Context

Aloysius Gonzaga Mubuuke[a,*], Alwyn J.N. Louw[b], Susan Van Schalkwyk[b]

[a]*School of Medicine, Makerere University, P.O. Box 7072, Kampala, Uganda*
[b]*Centre for Health Professions Education, Stellenbosch University, South Africa*

Received 29 April 2016; received in revised form 22 September 2016; accepted 22 September 2016

Abstract

Purpose: Feedback within a problem-based learning tutorial can only influence learning if it is efficiently utilized. The purpose of this study was to explore perceived factors that influence student utilization of facilitator feedback within a problem-based learning tutorial.

Methods: It was an exploratory qualitative study that was conducted at an African Health Sciences University that has been using problem based learning for over a decade. The study involved third year students from across five health sciences disciplines that included: medicine, radiography, dentistry, nursing and pharmacy. Purposive sampling was the technique used to select the participants. These students had been previously exposed to problem based learning tutorials since their first year. Data was collected using both individual interviews and focus-group discussions. In total, twenty-five individual interviews and five focus group discussions were conducted.

Results: Both cognitive and social factors were discovered to influence students' use of feedback in a tutorial, and these have a reciprocal relationship, reinforcing each other to influence student learning. Key cognitive influencing factors included: overloaded feedback, unspecific and unfocused feedback, perceived limited knowledge of the tutor, differing feedback across tutorial groups and de-linking feedback from learning outcomes. The major social influencing factors included: language of feedback and communication, facilitator interpersonal skills, degree of participation of the facilitator, gender stereotyping and individualization of feedback.

Conclusion: Both cognitive and socio-contextual factors have the potential in influencing ways in which students receive and utilize facilitator feedback in PBL tutorials. Therefore, tutorial facilitators need to be cognizant of these factors when framing their feedback messages.

© 2016 King Saud bin AbdulAziz University for Health Sciences. Production and Hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Keywords: Cognitive; Social; Problem-based learning; Feedback

*Corresponding author.
E-mail address:* gmubuuke@gmail.com (A.G. Mubuuke).
Peer review under responsibility of AMEEMR: the Association for Medical Education in the Eastern Mediterranean Region

1. Introduction

1.1. Problem-based learning

Problem-based learning (PBL) in health professions education has been in application for long. First introduced in the 1960s at McMaster Medical School in Canada,[1] PBL has today been adopted across several institutions and many medical curricular are now based on PBL. PBL has also been introduced in many disciplines other than the health professions such as social work, science, engineering, business, management etc.,[2] and is widely advocated for particularly in science education.[3,4] PBL has been positioned as a transformative instructional strategy in reported literature, and one key component of PBL that is vital for its success is the provision of feedback to learners.[5] Unfortunately, literature on feedback within the specific environs of a PBL group setting in medical education is still murky, which necessitated this study.

The key reasons cited for the wide adoption of PBL include: training professionals with competencies such as critical thinking, problem solving, reflection, collaborative, self-directed as well as life-long learning.[6,7] PBL is a learning strategy where students in a small social group (i.e. the tutorial group) solve problems and reflect upon their learning processes collaboratively as a group.[8] PBL involves designing a learning task for the students which acts as the stimulant for learning. Such a learning task (i.e. the problem) could be a written narrative, clinical case scenario, medical image etc.

The learning task is addressed by the students in a real naturalistic context.[7] When solving the problem (i.e. learning task), students work in small groups called tutorial groups guided by facilitators. The facilitators do not teach, but rather just guide the students towards discovering new knowledge on their own.[9] Within the tutorial group, students brainstorm the problem and identify what they need to learn from the problem.[10] The group members then share information and propose various solutions. Unlike in traditional teacher-centered approaches where the teacher is the focal point of knowledge, in PBL, the emphasis is to promote learner-centeredness.

Therefore, the primary feature of PBL is contextualized learning through a problem solved by students within a tutorial group without formal lectures or prior preparatory study.[11] In PBL, the role of the teacher (who in the tutorial is also called a facilitator) is to guide students and promote sharing, interaction and exchange of ideas towards construction of new knowledge.[1,5] Such learning, in a problem solving social group like the tutorial group is aimed at enhancing activation of prior knowledge, elaboration of such knowledge and discovering new knowledge to build on prior knowledge.[12,13]

1.2. Linking feedback and the PBL tutorial

Within a PBL group, facilitator feedback to the students is very vital. Following the early origins and subsequent adoption in education, the concept of feedback in teaching and learning has been extensively studied with most literature emphasizing that if delivered effectively, feedback can be a powerful driver of student learning.[14–20] Feedback delivered in a PBL tutorial is aimed at facilitating and improving the learning process, not simply giving students summative marks. This type of feedback is called *formative feedback*. Formative feedback therefore refers to information or responses provided by facilitators to learners aimed at identifying students' learning strengths, learning gaps and providing opportunities for students to address those gaps.[21–23]

It has been reported that feedback responses from lecturers to students have in most situations been pointing out weaknesses on learning tasks accomplished.[23] The major assumption being that the weaknesses pointed out by lecturers can easily be transformed into action points by students in order to learn better. Provision of both strengths and weaknesses on student performance in a balanced manner has been reported as major factor considered by students when utilizing feedback received.[23] For feedback to promote effective learning, lecturers need to provide both strengths and weaknesses about students' learning tasks.[23] This allows students to critically reflect upon their achievements, while at the same time identifying gaps that need improvement.

Some students may be motivated by positive comments, others by negative comments while others could be motivated by both.[24] The onus lies on the feedback source (the facilitator) to find a balance between both positive and negative comments that will drive learning towards the desired direction. Carless[21] advises that, students should be given autonomy to actively construct their own understanding and meaning of feedback received in a balanced way. Barnett and Coate[25] alluded to this when they reported that feedback is aimed at; nurturing good learner behavior, informing students of their strengths and weaknesses, and expanding their learning prospects.