

## Chapter 9

# Using Feedback on Formative Assessment to Support Student Learning and Improve the Curriculum for Material in a Civil Engineering Module

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### **ABSTRACT**

*This chapter reports on the potential of using formative feedback on assessment to support student learning and improve the curriculum for material in a civil engineering module. Under this study, when the students were given the feedback of their assessment on a piece of coursework, they were asked to repeat the coursework taking on board all the comments and feedback provided by the lecturer in exchange for a better mark. The overall result from the quantitative data suggests that students overwhelmingly took the corrections on board and submitted a more improved laboratory report in order to have an improved mark. The students enjoyed the praise, progress, and critique comments on their feedback sheet. Their understanding of the module grew, and their motivation and performance increased. Generalized comments like referencing and citations unified the entire curriculum.*

### **INTRODUCTION**

Getting assessment right is something that is most likely to have real positive impact on students overall learning experience. A piece of assessment may providing feedback showing where the student went wrong and right in order to help the student learn more, this type of assessment method is called formative assessment (Sadler, 1998). A central argument is that, in higher education, formative assessment and feedback should be used to empower students as self-regulated learners. The concept of self-regulation refers to the degree to which students can regulate aspects of their thinking, motivation and behaviour

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during learning (Pintrich and Zusho, 2002). On the other hand, the piece of assessment may express a judgement on the student's achievement with reference to the module and coursework descriptor, this type of assessment method is called summative assessment. Overall, most assessment criteria involve an element of both (Ghiat u et al., 2011). The lecturer make comments (feedback) on what is right and wrong in the students coursework and students are then required to translated the feedback into action and make subsequent improvements (Gielen et al., 2010).

On the other hand, there is considerable research evidence to show that effective feedback leads to learning gains (Gibbs & Simpson, 2004). Previous work by Hattie (1987) provides convincing evidence of the value of feedback in promoting learning, yet, there are reported cases that feedback messages are invariably complex and difficult to interpret (Crooks, 1988), the main issue is the understanding of the feedback and how to revise the work based on the comments, in some case, asking the student to do something they do not know how to do. The most critical function of feedback, however, is to provide guidelines to the learner along the way of accomplishing a defined goal, allowing them to better be able to self-regulate their own learning (Narciss & Huth, 2004). To ensure that the student take action on their feedback, lecturers in the higher education institutions are expected to develop feedback practices that support self-regulation (Gibbs & Simpson 2004). In fact, Butler and Winne (1995) reported that feedback is an inherent catalyst for all self-regulated activities, which aids to improve learning by informing students of their current achievements and guiding them on how to effectively accomplish the outlined learning objectives. Although formative feedback is personal, some students may feel bombarded by too much written information and they will probably ignore the feedback. There is agreement that feedback needs to be timely (Bloxham & Boyd, 2008) and most fundamentally, accessible (Gibbs & Simpson, 2004). In addition, for feedback on assessment to be most useful, it needs to be able to 'feed-forward'. That is, it should allow learners to apply, regardless of its limited extent and nature, what they have learnt to future work (Hounsell, 2007).

Much has been written about the principles of good assessment and feedback practice (Nicol and Macfarlane-Dick, 2006); however, the planned sequence of the students' learning experiences called the curriculum is a whole subject that is attracting more attention and it a matter of recent publications (Ornstein & Hunkins, 2004; Schiro, 2008). Many countries are changing educational practices towards outcome-based curricula, in which professionally relevant outcomes define the qualifications of educational programmes without prescribing any specific learning pathway or resources (Psifidou, 2009). Research work by Dowden (2007) reported on systematically integrated curricula organized around real-life problems and issues rather than discipline-based content. Curriculum should be worthwhile and meaningful to students (Stenhouse 1980; Prideaux, 2007).

Literature review of previous studied revealed that there is little or no reported study that addressed feedback, assessment and curriculum for material in civil engineers module, however, there are several reported cases for other disciplines. This paper intend to adapted ideas or practices from other disciplines to Civil Engineering, exploring student perceptions of the helpfulness (or the degree to which they were positively disposed to) the feedback provided for them and how it can used to improve the curriculum for material in civil engineers module. This chapter is divided into five sections; the first section is introduction while section two reports on the methodology of the research. The remaining sections follow the traditional sequence of results, discussion and conclusion.

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