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Real-time color codes for assessing learning process

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Abstract

Effective assessment is an important way for improving the learning process. There are existing guidelines for assessing the learning process, but they lack holistic digital knowledge society considerations. In this paper the authors propose a method for real-time evaluation of students' learning process and, consequently, for quality evaluation of teaching materials both in the classroom and in the distance learning environment. The main idea of the proposed Color code method (CCM) is to use color codes during the learning process: green for "job done", yellow for "being done" and red for "have a problem". Codes help the teacher to understand the learning progress and react faster.

1. Introduction

As the increasing volume of learning content becomes freely available, it is predictable that learners will focus on learning entities for support with their learning, rather than for the delivery of content. This puts a greater focus on teaching skills and less on subject expertise. Quality teaching is defined as: "teaching methods that successfully help learners develop the knowledge and skills they will require in a digital age" (Bates, 2015). Quality teaching is inseparably related to assessment, which is a way to provide both students and teachers with information needed to improve themselves and the study course quality. Garrison (2011) states that "every learning course should provide means by which both students and teachers can assess their learning and the expected outcomes". Assessment should

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be considered as one of the components that supports an effective and comprehensive learning, and assessment methods need to be adapted to meet the needs of a digital age (Bates, 2015). Assessment and evaluation are strongly linked to obtaining feedback – students from a teacher as well as a teacher from students. The present paper mainly focuses on providing feedback to teachers.

The issues to be addressed are *how* and *when* to collect feedback. Pappas (2015) advises not to wait until the end of the course: "upon completion learners are tired and eager to be done. In addition, you certainly can't expect them to remember every single part of the course that needs improvement after they have covered a large number of modules and different subjects. Prefer asking for comments or questions on specific checkpoints throughout the course, when the content is still fresh in your audience's minds!" The researcher meant e-learning courses in particular, but his recommendations can definitely be applied to the classroom environment as well.

Blended learning in general and fully online learning in particular require a range of skills that most instructors are unlikely to possess. Regular and on-going instructor/teacher presence, especially when students study partly or wholly online, is essential for student success. This ensures effective communication between teacher/instructor and students. One of the best guarantees of quality in teaching and learning fit for a digital age is systematic evaluation leading to continuous improvement (Bates, 2015).

In this paper, the term "assessment" is used to describe a quantitative method for evaluating ongoing real-time learning process and quality of learning items. In the research by Garrison (2011) the term "assessment" is used to refer to its role in determining students' learning processes and outcomes, and the term "evaluation" is used to refer to the act of comparing a unit, course, or program against some set of performance or outcome criteria. Here the term "assessment" is used as a combination of assessment and evaluation.

Assessment also plays a critical function by providing external benchmarks that can be internalized. Since knowledge is both externally and internally defined, assessment provides an integrating mechanism whereby external measures of learning accomplishments are matched with a personal understanding of the learning process (metacognition). Such metacognitive awareness enhances learner responsibility and control and better equips students for continuous learning. Learners are also motivated by assessment techniques. Effective instructors use assessment techniques strategically to motivate learners to engage successfully in productive learning activities. Successful learners most often rely on assessment deadlines and activities both to pace and direct their learning efforts. Students should have some input into assessment if they are to be encouraged to be self-directed and have metacognitive awareness (Garrison, 2011). It is very important to be able to gather data for qualitative course assessment. This paper addresses the quality assessment of study courses – both classroom and online courses.

One of the main criticisms of online courses is they are of poor quality (Allen, 2015). Therefore, online educators can and should deal with quality issues in their courses, and they can do it by assessing their courses holistically. A holistic approach encompasses elements such as students' perspectives, results over a period of time, artefacts created during learning, and the instructor's course experience (Allen, 2015).

Since students are unique, there are an infinite number of issues that may impede student learning during e-learning courses. To overcome these impediments, a variety of student support services must be available in conjunction with qualitative e-learning courses. These resources need to focus on the content (remedial activities for some and enrichment for other students), on technical issues (especially if the technology used for delivery support is novel, sophisticated, or complex), and on personal issues (various types of counselling support). It is only through rigorous and systematic evaluation efforts that we will be able to develop our understanding of the many complex e-learning issues (Garrison, 2011).

There are some online tools available for receiving feedback in e-learning. The authors will briefly introduce some of them: Litmos Athor's review (Litmosauthor, 2016) that offers a possibility for making collaborative reviews; Review my learning (Reviewmylearning, 2016) that is made for feedback in e-learning as comments that are visible to other users; Trivantis (Trivantis, 2016) that provides a possibility to post comments that are sent to the course developer, who can react and change the course, while the user can afterwards evaluate the teacher's reaction as "ok"' or "not ok". However, these tools do not provide a possibility for continuous monitoring of the learning process and rely on student engagement to define and report the problems identified. These kinds of tools predictably add to cognitive load because they demand to jump from a particular learning item to another window/environment and then come back.

It is equally important not to forget about conventional classroom education if talking about assessment. This can be explained by the fact that teacher and student's self-assessment and obtaining quality feedback from teachers and students are still quite new approaches: while there has been a move over the past decade to conceptualize "learning"