Nov 9th, 12:00 AM

How to Organize Course Evaluation Components to Optimize Learning Outcome: An Application of Pedagogical Theories

MdSanuwar Rashid
Auburn University, mzr0034@auburn.edu

Jong Geun Lee
Auburn University, jzl0118@auburn.edu

How to Organize Course Evaluation Components to Optimize Learning Outcome: An Application of Pedagogical Theories

Md Sanuwar Rashid, Jong Geun Lee, Auburn University, USA

Keywords: Student-centered learning, principle of learning

Course evaluation component

A college- or university-level course should have several components to optimize learning outcome. Evaluation components are organized to cater the course-specific need of students. A theory-based course that is taught in traditional classroom environment should have different components in comparison to a course that is practical-based. To optimize the learning outcome of a theory-based course, components should be comprised of a specific set of activities including a set of quizzes, and exams focusing on individual performance; final projects, and case studies focusing on students' ability to work in group; and course-relevant workshop assessing students' analytical skills. In case study, while a group takes the role of presenter, another group should be assigned as rejoinder to provide critical review of the presenter group. The objective of this paper is to explain how these components can help assessing and optimizing learning outcome of theory-based courses of the post-secondary level.

Assessing learning outcome

Recent literature identifies three methods of implementation and application of the student centered learning (SCL) approach. These methods are:

Team learning. A cooperative learning system that enables students to interact with course-mates, sharing their ideas, and gaining competence (Felder et al., 1996). A course may contain two different group works- case study, and final project to enhance team learning.

Problem-based learning. Helps students improving their problem solving strategies and disciplinary knowledge bases and skills, thus supporting in becoming more adaptable in solving problems outside of classroom (Trowler et al., 2005). In a course, apart from the written exams and quizzes, workshops, and final project may fulfill the need of problem-based learning.

Student self-regulated learning. Systematically motivates students to follow up their progress by themselves and to take their own steps to enhance their learning (Van Eekelen et al., 2005). In a course, performance in quizzes will help students to understand their weak points and enable them to predict their success in main exams.

Recent advances in memory research suggest four principles of memory improvement that should also be taken care of in developing the evaluation components.

Process material retrieval. Those students who are instructed to learn the material in order to teach it to other students will acquire knowledge more efficiently than those students who merely read with the intention of learning (Schwartz, Son, Kornell & Finn, 2011). Case study (rejoinder role) will lead students to develop a critical understanding on the assigned case, so that they can interpret and counter the arguments of presenter group.

Practice retrieval. It is the process of learning through recalling information from memory, i.e. learning by taking tests (Schwartz et al., 2011). In a course, several online quizzes should be assigned to help them practicing retrieval continuously.

Use distributed practice. Also known as spacing effect, distributed practice in learning can substantially increase the amount of material students remember (Bloom & Shuell, 1981). Semester-long assignments including online quizzes, workshop, case-study (presenter) may engage students in piecemeal-based practices, thus distributing their loads more evenly.

Use metamemory. The judgement of learning that determines the utilization of metamemory. (Nelson & Leonesio, 1988). Pervious research found overconfidence as an obstacle in judgement. An overconfident student may stop studying prematurely and may receive a bad grade. Frequent online quizzes and in-class discussions will enable students to predict their judgement of learning and to reduce their overconfidence.

The evaluation components may be different from what is proposed; however, components should be diversified enough to assess learning outcome (see Table 1).

Table 1 *Evaluation of Learning Outcomes*

		Main exams	Online quizzes	workshops	Final project	Case study (presenter)	Case study (rejoinder)
Student centered learning	Team based learning			X	X	X	X
	Problem based learning	X	X	X			
	Self-regulated learning		X				
Four principle of learning	Process material actively						X
	Practice retrieval		X				
	Use distributed practice		X	X		X	
	Use metamemory	X	X	X	X	X	X

References

Bloom, K. C., & Shuell, T. J. (1981). Effects of massed and distributed practice on the learning and retention of second-language vocabulary. *The Journal of Educational Research*, *74*(4), 245-248.

Felder, R. M., & Brent, R. (1996). Navigating the bumpy road to student-centered instruction. *College Teaching*, *44*(2), 43-47.

Nelson, T. O., & Leonesio, R. J. (1988). Allocation of self-paced study time and the "labor-in-vain" effect." *Journal of Experimental Psychology: Learning, Memory, & Cognition, 14*, 676 - 686.

Schwartz, B. L., Son, L. K., Kornell, N., & Finn, B. (2011). Four principles of memory improvement: A guide to improving learning efficiency. *IJCPS-International Journal of Creativity and Problem Solving*, *21*(1), 7-15.

Trowler, P., & Bamber, R. (2005). Compulsory higher education teacher training: Joined-up policies, institutional architectures and enhancement cultures. *International Journal for Academic Development*, *10*(2), 79-93.

Van Eekelen, I. M., Boshuizen, H. P. A., & Vermunt, J. D. (2005). Self-regulation in higher education teacher learning. *Higher Education*, *50*(3), 447-471.