Chapter 11
Measuring Student Learning Responsibly:
A Learning Analytics Perspective with Web 2.0

Kam Hou Vat
University of Macau, Macau

ABSTRACT

This chapter investigates an ethical mechanism of organizational measurement for student learning that is based on the learning analytics gathered from various learning-related activities over an extended period of time. In the context of today's Web 2.0, such learning analytics are often collected from an electronic learning environment, such as a Web-based course management system (CMS), providing various tools of interest in scaffolding student learning: blogs, wikis, online forums, RSS, and many other innovative resources to facilitate learning online. This mechanism, intended to be ethically sound, could be considered as an instance of an accountability system typically installed in institutions of higher education and/or secondary schools, serving to gather evidence of student learning in a virtual learning environment involving electronic presence from both teachers and students in the context of learning development. It is understood that today's university as a higher education institution (HEI) must put in place such an accountability system to measure student college experience, as her sustained commitment to continuous improvement in the quality of student learning; yet, without the context of data analysis, the transformation of any existing accountability infrastructure in support of assessment for student learning could hardly be innovated effectively, especially regarding the productivity and coordination of its staff, both academic and administrative. The question is how innovatively a HEI could establish such an accountability system to measure and assess student learning responsibly by collecting, analyzing, and interpreting student learning analytics designed into their various learning activities.

INTRODUCTION

For most of the past two decades, various institutions of higher education, locally and abroad, have been continuously engaged in assessment activities in the field of student learning. They have been collecting data from literally thousands of students to measure what they have learned, in the form of various questionnaires, standardized tests, personal interviews, focus groups, case studies, and other qualitative and quantitative approaches. In the States, Shavelson (2010) confessed his earlier doubt on a collegiate version of NAEP (National Assessment of Educational Progress), referred to as the Nation's Report Card, tracking students' pre-collegiate achievement nationally and state by state, had, by some happy chance, turned into a nation-wide effort in assessment of higher learning, so much exemplified by today's version of Collegiate Learning Assessment (CLA), arguably the most innovative and ethically promising assessment of college learning so far. The core issue here is accountability, meaning the collection, provision, and interpretation of information on higher-education quality sought by educators and policy makers who have responsibility for assuring the public and stakeholders (students, parents, businesses, and government) that have put their trust and investment into our higher education institutions.

The goal of this chapter is to explore with education policy makers in the academy, in government, and in the public, options for crafting learning assessment and accountability systems that meet the ethical needs for higher learning and teaching improvement and external accountability, including disciplinary and general education programs. In particular, the chapter puts into perspective the ethical implications of learning analytics, gathered as important evidence in accountability measures to support the design of essential learning experience in the respective course, program, and institutional settings. In the context of today's Web 2.0 technologies, such learning analytics are often collected from our electronic learning (e-learning) environment, such as in the form of an LMS (learning management system, e.g., Sakai OAE) or CMS (course management system, e.g., MOODLE). The question is how innovatively a HEI (higher education institution) could establish an ethically proper accountability system to measure and assess student learning responsibly by collecting, analyzing, and interpreting student learning analytics designed into their various learning activities.

Thereby, this chapter sets out to investigate from the perspective of a learning enterprise, an ethically appropriate context of organizational innovation and involvement to support mining learning analytics from various student activities, as an important HEI mechanism of accountability to build shared responsibilities for holistic student development – academic learning certainly included. What is entailed in this process of using learning analytics as accountability indicators/measures to assess for student development is our quest for an ethically suitable accountability framework in support of continuous quality improvement (CQI) in our curriculum and co-curriculum reform, as a response to many of the ethical challenges in organizational development in higher education – an essential contribution in Macau's socio-economic development, locally and globally alike, to produce talents in the immediate future.

BACKGROUND

The Centre for Teaching and Learning Enhancement (CTLE), as a newly established academic support unit under the Rector's Office at the author's affiliated university, is charged with a mission to enhance the quality of teaching, learning, undergraduate research, and assessment through developing specific programs in faculty development and student engagement, so that the University's goals in elite undergraduate

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