



The return of behaviourist epistemology: A review of learning outcomes studies



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ABSTRACT

Learning outcomes as a concept has encountered a revival since the beginning of the Bologna process in 1999. The concept itself has a longer history with its roots in the behaviourist tradition of the 1960s. The goal of this review is to study how the historical roots of learning outcomes are noted in current research articles since the launch of the Bologna process and whether the concept of learning outcomes is used critically or uncritically. The review of 90 articles shows that the behaviourist tradition is still evident in the 21st century research with 29% of the articles directly and 11% indirectly referring uncritically to the respective publications or to the behaviourist epistemology. Only a minority of the articles, i.e. 8%, was found to be critical towards the behaviourist meaning of learning outcomes.

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1. Introduction

Senior educators, in particular those who started their career in the 1970s, have experienced a déjà vu when reading policy documents from higher education since the beginning of the Bologna process in 1999. The concept of *learning outcome* in terms of exactly defined end-behaviour has reappeared in educational discussions concerning the quality of higher education (e.g. Adam, 2004, 2008). For example, in chapter 1.3 of its 2009 report, the European Association for Quality Assurance in Higher Education (ENQA) set as a standard for higher education in Europe that “students should be assessed using published criteria, regulations and procedures which are applied consistently. (...) student assessment procedures are expected to be designed to measure the achievement of the intended learning outcomes and other programme objectives.” (p. 17). Since then, many national quality assurance and accreditation systems have adopted the ENQA guidelines into their own national system or directly refer to them (Eurydice, 2007). Most of the authors of these quality assurance documents are administrators or university teachers of different disciplines who lack deeper expertise in educational science or educational psychology.

The idea of defining and measuring learning outcomes has a long history in educational and psychological research. Most of the measures focusing on detailed definitions of learning outcomes (in terms of specific verbs describing targeted behaviours) were developed within the behaviourist tradition, which explicitly focused on learning as external reactions and can be directly observed in changes of the behaviour of the organism (Mager, 1961). The seminal work of Bloom, Engelhart, Furst, Hill, and Krathwohl (1956), “Taxonomy of educational objectives”, became a standard for defining objectives of primary

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and secondary education throughout the world in 1960s and 1970s. It has now become a standard for describing learning outcomes of 21st century university teaching in many administrative documents, such as in the Bologna process documents (e.g. Kennedy, 2008a) and is expressed in the practical guide for writing learning outcomes as follows: “When writing learning outcomes it is helpful to make use of Bloom’s taxonomy of educational objectives. This classification or categorisation of levels of thinking behaviour provides a ready-made structure and list of verbs to assist in writing learning outcomes.” (Kennedy, 2006).

Since the cognitive turn, which already began in the early 1950s, but became strong in the 1970s, the behaviourist perspective has been heavily criticised. The main argument of cognitive theories was that complex conceptual learning in humans can only be understood if internal cognitive processing is deliberately analysed. Studies on human problem solving (Newell & Simon, 1972) and the development of higher cognitive processes highlighted the power of knowledge (Bereiter & Scardamalia, 1998; Feigenbaum, 1989) and resulted in new approaches which took into consideration deep learning (Ohlsson, 2011), reflective and metacognitive processes (Flavell, 1979; Weinert & Kluwe, 1987; Wright, 1992), and the growth of human expertise (Ericsson, Charness, Feltovich, & Hoffman, 2006). This new development did not mean that phenomena described by behaviourists would not exist (Steiner, 1988), but it was doubted whether these reinforced behavioural sequences would be appropriate for explaining all learning phenomena (Lehtinen, 2012). Specifically, complex conceptual, long-enduring learning processes were deemed to be inappropriately dealt with by behaviourist models. The enormous development of scientific knowledge about the nature of conceptual learning and expertise development in recent decades, highlights the importance of an analysis on whether the learning outcome definitions which are based on behaviourist models of behaviour modification are suitable for defining aims of higher education (Boshuizen, Bromme, & Gruber, 2004).

There is no reason as such to oppose the renaissance of clearly expressed aims. Well-defined objectives in terms of learning outcomes can be useful for students and help those who are responsible for developing and evaluating study programmes. There is a danger, however, that if the theoretical background of the “learning outcome” concept is not considered or not known, the use of learning outcomes can lead to unintended consequences. Such could be, for example, a decision to use certain verbs in course descriptions which leads to narrower learning results than was intended.

This article discusses the concept of the learning outcome and reviews the use of it in recent research articles. The time span selected for the analysis starts from the beginning of the Bologna process in 1999 that is especially interesting from the European perspective. The goal of this review is to study how the concept has been used i.e. is the concept used in the sense of referring to the behaviourist tradition, and are the historical roots of the concept discussed, or is the concept used uncritically?

1.1. Reinvention of learning outcomes

Learning outcome as a concept has emerged in European educational policy documents since the Bologna Declaration 1999 as an attractive tool to increase transparency of higher education programmes. The concept has been taken into use without much discussion about its earlier use in the behaviourist era. Since the very beginning of the consolidation of the European Higher Education Area (EHEA), questions concerning comparable degrees and quality assurance with comparable criteria and methodologies have been targets of the intergovernmental co-operation (European Ministers in charge of Higher Education, 1999). When EHEA was officially launched in 2010, common standards for education had been settled and member countries of the area had committed to the common goals, with quality assurance being one of the most important. Defining, describing and assessing learning outcomes had soon become one of the main focusses of European higher education institutions in quality assurance. As Adam (2008) puts it: “The humble learning outcome has moved from being a peripheral tool to a central device to achieve radical educational reform of European higher education.” (p. 5).

Along with the EU, the European higher education institutions have played a prominent role in the process of constructing the EHEA. A university driven project, Tuning Educational Structures in Europe, was started in 2000 to implement the Bologna process goals and to ensure the independence and autonomy of universities. Learning outcomes and competences approaches were seen as tools to imply changes in teaching, learning and assessment methods (González & Wagenaar, 2008). Many national projects were also implemented to support the goals of European co-operation (focus on the structure of higher education in Europe: Eurydice, 2007).

Soon after the Bologna Declaration in 1999, a guideline was published that defined learning outcomes as “statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of a process of learning” (CQFW, NICATS, NUCCAT, & SEEC, 2001, p. 3). Accordingly, the Tuning project defines learning outcomes as “statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of a learning programme” (González & Wagenaar, 2008, p. 9). Learning outcomes have also been viewed as an expression of the quality of the expected understanding, skills and abilities of learners after an instructional period, e.g. a case, lesson, module or study programme (European Community, 2004, 2009; Froment, Kohler, Purser, & Wilson, 2006).

The revival of the concept of learning outcomes has not only been a European process, but many other countries have also focused on the nature of outcomes in learning. As in Europe, these are closely connected with the quality assurance goals, such as the Learning Outcomes Assessment (LOA) movement led by the National Institute for Learning Outcomes Assessment (NILOA) in the USA (Kuh et al., 2015) and the Australian Government led Tertiary Education Quality and Standards Agency (TEQSA; Hay, 2012). According to Bennett and Brady (2012), “the roots of the LOA movement, as opposed to engaged learning

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