Chapter 1

Metacognition in Higher Education: Successful Learning Strategies and Tactics for Sustainability

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ABSTRACT

Globalization forces Higher Education to adopt metacognition towards successful learning strategies for teacher training, students’ learning and content(s) development. Researchers and practitioners use metacognition to study principles of educational system(s), learning environment(s), open content(s), and all possible processes (e.g. metacognitive, psycho-motoric, didactic, assessment etc.). Existing efforts can be divided into three categories: 1) separate strategy and tactics; 2) a holistic integration of strategy in existing successful practices, and 3) frontier research in university pedagogy. This chapter explores the third way. Within the context of the interest in metacognition and successful learning strategies in higher education, the chapter critically explores the 21st century theory and practice of the academic learning and synthesis responses to the following research questions: What is the correlation between theory and practice in Higher Education? What models are required? The conclusion is provided and future research directions are emphasized.

INTRODUCTION

Human society is at the peak of globalization and the fourth industrial revolution is on the way (Bartissol, 2016; Trudeau, 2016; Xing, 2016 and others). In the summary version of the Global Education Monitoring Report titled “Education for people and planet: Creating sustainable future for all” by UNESCO (2016), it is shown that education will not deliver its full potential to catapult the world forward unless participation rates dramatically improve, learning becomes a lifelong pursuit and education systems fully embrace sustainable development. A sustainable future for all is about human dignity, social inclusion,
and environmental protection. These priorities are included in the fourth Sustainable Development Goal (SDG4) and Education 2030 Framework for Action.

A controversial dispute lingers regarding what the most successful learning strategies are and how to implement them in strategies in existing practice in academia. On the one hand, the educational outcomes are incorporated into content (e.g. courses’ curriculum, instructional objectives). Such conceptualisation is instilled with the “technological unemployment” that perpetuates the status of learning in higher education. The struggle to define objectives within course curriculum is not a simple didactic issue; but involves many more factors. One of these factors is the changing nature of the qualified jobs (as a result of the fourth industrial revolution). Peters (2016, p.1) observes that many more sectors lose jobs rather than create new jobs. Higher Education is not an exception to this reality. “We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity the transformation will be unlike anything humankind has experienced before. We do not yet know how it will unfold, but one thing is clear: the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academia and civil society” (Schwab, 2016). The speed of the technological “breakthroughs” has no precedent in Higher Education: everywhere can be seen digital screens, robotics, platforms, open source textbooks, ebooks and other digital innovations.

BACKGROUND

Researchers report many successful learning strategies involving eLearning, metacognitive, multimedia and others. Usually, they articulate successful learning strategies with global or/and digital opportunities. Whereas in 1990 the successful learning strategies are considered a special way of processing information that enhance comprehension, learning and retention, in 2016 the successful learning strategies rely on metacognitive skills, critical thinking, decision-making and educational sustainability. As noted by Heyes (2016), a good learning strategy is a social strategy focused on the right agents and associative processes that determine the actions of behavior.

Through a meta-analysis of the metadata “successful learning strategies” could be observed that the concept “successful learning strategies” defines a complex metacognitive construct that could be developed using the principles of educational technology. This construct include three features: “successful”, “learning” and “strategies”, where “successful” relies on 1) having the correct or desired result: ending in success or 2) having gotten or achieved wealth, respect, or fame (Merriam-Webster Dictionary, 2016). Therefore, the successful learning strategies could be associated to “sustainability”, especially when refers to a quality of life because sustainability is about keeping people to meet their current needs without compromising the resources available for future generations to meet their future needs, such as, “The sustainability skill set required of contemporary citizens in a complex and changing world” (Tarrant & Thiele, 2016). Do successful learning strategies ensure a successful life? If yes, what is the impact of successful learning strategies on academic learning? What is the role of metacognition?

For decades, professionals in philosophy, pedagogy, psychology, and management have struggled to understand what the most successful learning strategies are. According to Schumaker and Deshler (1992, p. 22), learning strategy is an individual’s approach to a task. It includes how a person thinks and acts when planning, executing and evaluating performance on a task and its outcomes. The wave of research guided by metacognitive theories “outline some common ground between metacognitive and