


## Chapter 4

# Creating Virtual Learning Experiences Based on Engaging Interactions and Collaborative Work in Graduate Programs: A Cognitive Analysis

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### ABSTRACT

*The purpose of this chapter is to present a cognitive analysis of virtual leaning experiences based on engaging interactions and collaborative work to enhance business skills in graduate programs. The experiences include virtual learning scenarios, autonomous learning, virtual learning technologies, and collaborative work that enable the learners to enhance business skills required for the modern world. Ten virtual learning environments are sampled to analyze cognitive processes for the learners to enhance four main business skills: leadership, entrepreneurship, sustainability, and problem solving. Based on the analysis, the authors discuss the opportunities for improvement and recommend the implementation of activities in which learners investigate and respond to an authentic, engaging, and complex problem or challenge through collaborative work. This initiative provides more possibilities for learner interactivity and cognitive processes development and fosters the implementation of engaging virtual learning environments for learners skills to solve real-life situations.*

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## INTRODUCTION

The purpose of this paper is to present a cognitive analysis of virtual learning experiences based on engaging interactions and collaborative work to enhance business skills in graduate programs. The experiences include virtual learning scenarios, autonomous learning, virtual learning technologies, and collaborative work that enable the learners to enhance business skills required for the modern world. Ten virtual learning environments are sampled to analyze cognitive processes for the learners to enhance four main business skills: leadership, entrepreneurship, sustainability, and problem solving. A literature review was carried out on current e-learning trends and factors which facilitate learning to consider the main cognitive processes in such virtual learning experiences. Besides this, the engagement theory and an autonomous learning framework were considered to support the interactions between the learner and the content, the tutors and the peers taking place along the process. Based on the analysis, the authors discuss the opportunities for improvement, and recommend the implementation of activities in which learners investigate and respond to an authentic, engaging, and complex problem or challenge through collaborative work. This initiative provides more possibilities for learners' interactivity and cognitive processes development and fosters the implementation of engaging virtual learning environments to develop learners' skills to solve real life situations.

Engaging learners in virtual learning environment scenarios to enhance professional competences and skills is one of the challenges educational programs have to face particularly when engagement, learning, and solutions to real life situations must be a guarantee of an effective educational process. Providing learners with engaging learning experiences lead the authors to consider the kind of learning activities, the learning interactions between the learner and the content, the tutors and the peers taking place along the process, and the cognitive process involved in such learning activities.

A cognitive analysis of the virtual learning experiences was carried out to determine the effectiveness of the collaborative work and engaging interactivities implemented in virtual learning scenarios for graduate courses which aim is to enhance four main business skills: leadership, entrepreneurship, sustainability, and problem solving. This initiative tries to respond to the demands for virtual learning experiences that effectively and efficiently lead learners to develop those business skills under an autonomous learning framework and collaborative work based on an engagement approach. Ten virtual learning scenarios were sampled to analyze cognitive processes containing collaborative work, autonomous-based learning activities, interaction itineraries, and digital material and resources which satisfy the learners' needs for solving problems in real context. As a matter of fact, opportunities for interactions between the learner and the content, the tutors and the peers mediated by resources and technological applications, foster learners' cognitive processes to contribute to the education of innovative citizens.

This chapter is developed in 4 sections. In the first section, some referential information about the *Perspectives on e-learning* will be presented to explore the current educational trends as the context to understand the diversity of technologies which can be used to create virtual learning experiences; factors and strategies for creating engaging learning experiences and the concepts of autonomous learning and collaborative work. The second section, *Virtual engaging learning scenario* will describe the design, the content, the collaborative work, the learning activities and the technological tools used to provide a diversity of interactions between the learner and the content, the tutors and the peers. The most common components found in the learning management systems of the sampled courses are detailed in order to illustrate how a virtual learning scenario provides learners with technological tools to achieve learning goals. The business skills considered to provide the learners with are also presented. In the *Cognitive*

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