

Chapter 5

Digital Collaboration in Educational and Research Institutions

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ABSTRACT

This chapter explores the role of digital technologies in promoting interaction and collaboration at educational and research institutions. It describes some forms of digital collaboration, and explores how educational and research institutions employ digital technologies to reach learners inside and outside the institutional boundaries. The chapter investigates a number of digital collaboration tools and their characteristics, and highlights some aspects of employing these tools to support interaction among students, teachers, researchers, and different learning communities with a special focus on science. Some cases of integrating digital technologies in the educational process and in research are also given. At the end of the chapter, insights are discussed, and a summary is presented.

DIGITAL TECHNOLOGY FOR TEACHING AND LEARNING

Fast growing advances and the expansion of digital technology tools and applications have increased the opportunity of investing in these technologies in research and education. Personal computers and handheld devices are becoming more affordable and more connected; educational applications are becoming more popular, more social and user friendly; these unique properties have transformed the use of digital technologies from communication tools only into interactive, collaborative, and learning tools.

Today, there is a growing trend to utilize interactive digital technologies to expand interaction and collaboration inside and outside educational institutions. Interactive digital technologies play a main role in emphasizing collaboration between teachers and students and in motivating students to use and extend their experiences. Digital technology has made learning available all the time, enhanced students' engagement in learning, and extended their learning experiences to reach beyond the educational session.

Digital tools have been adopted for education, communication and collaboration by many educational institutions including schools, universities, colleges, training centers, academies, and institutes, and by many cultural and research institutions such as museums, galleries, libraries, research centers, and informal learning environments. The educational process includes different types of interaction: student–instructor, student–student, and student–content (Moore, 1989). In research, collaboration can take place between researchers from either a same-setting context (e.g., academic institutions) or from different-setting contexts (e.g., between academic–government or academic–private industry) (Stages of Collaboration, 2005). Many digital collaboration tools have been developed to promote and facilitate interaction between these communities and to manage other aspects of the educational process, including collaboration between the educational staff, employees, and researchers where they can easily share ideas and resources, and interact across geographical locations.

The unique characteristics of digital technologies have encouraged many educational and research institutions to invest in digital collaboration tools, while many researchers aim to investigate which digital technologies are the most educationally effective in different contexts. The mentioned cases in the following sections do not specify at which level of education the tool can be applied. Digital technologies have changed the way people learn and communicate; they have connected learners at different educational levels enabling interaction with other learners, educators, and scholars in different locations and learning environments. Learning is becoming more accessible; teachers and students at multiple educational institutions can easily connect.

CHARACTERISTICS OF SOCIAL MEDIA

One of the main features of the development of digital technologies is the expansion of social media; its main characteristics are sharing, participation, interaction, and collaboration. Rapid advancements in social media tools are changing the way we communicate and interact with each other. Support and organization interaction and the facilitation of various collaboration tasks utilize these advancements.

Social media include web-based internet sites that facilitate social interaction in many ways, including social networking; social bookmarking; microblogging; video, image, and audio sharing; virtual words; and much more. (Joosten, 2012)

In order to achieve effective student engagement in education, it is essential to facilitate the way they interact, collaborate, and share knowledge and experiences. Social media help to engage students in the learning process by virtually connecting communities of students, teachers, and researchers. Furthermore, new social media tools are continually being developed and utilized for educational purposes. The properties of social media allow for collaboration and active participation in generating and sharing knowledge among peers and research groups (Battrawi & Muhtaseb, 2013).

This advancement in social media tools has increased the demand of the world's educational systems for new information and communication technologies to support the educational process by making information accessible anywhere and at anytime. It has also encouraged scientists and researchers to explore and utilize new online interaction tools to share information with people in their networks.

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