

## Chapter 85

# Academics' Perceptions of Using Technology with Face-to-Face Teaching

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### ABSTRACT

*Many academics are using technology in their teaching, and universities are strongly involved in the provision of support to help academics make the most effective use of the technology. How academics perceive technology for teaching partly filters their response to the provided support. It is therefore useful to explore academics' perceptions of the use of technology in teaching. The study (N=53) reported on in this chapter provides insights into academic perceptions of teaching with technology by addressing the questions: (1) Which teaching tools (both face-to-face teaching and digital) are most popular? (2) For what purpose are the tools being used? (3) Do academics intend to extend their current use of technology with face-to-face teaching for the purposes of implementing learning strategies? and (4) Which feasibility conditions do academics perceive to be important to the realization of their intended use of technology? The results of the study show that, for the academics in the study, face-to-face teaching is perceived as the preferred tool, especially for learning purposes such as helping students to understand concepts. The use of technology by the academics was limited to the simpler digital tools, and these were used mostly for non-learning-related purposes such as communication. However, the academics expressed the intent to increase their use of technology for improving learning in the future, and perceived feasibility conditions such as professional and technical support, teaching facilities, and especially time to be important to the realization of their intentions.*

### INTRODUCTION

For most academics, technology is a feature of their university teaching activities. The use of technology for teaching is strongly encouraged in universities, at an institution-wide level, for

social, pedagogical and economic reasons, and thus many universities are placing significant strategic emphasis on the provision of support to assist academics to make more effective use of technology in their teaching.

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Given that it is partly through the filter of their perceptions that academics will view, and subsequently respond to, the provided support, the present chapter seeks to shed some light on academics' perceptions of using technology in their teaching. The study (N=53) reported on in this chapter is a subset of a broader study, which aims to better understand academics' use of technology with face-to-face teaching. For the purposes of the present chapter, the focus question is "how do academics perceive the use of technology with face-to-face teaching strategies?." Pertinent to the focus question, the following more specific questions are addressed in the chapter: (1) which teaching tools (both face-to-face teaching and digital) are most popular? ', (2) 'For what purpose are the tools being used?', (3) 'Do academics intend to extend their current use of technology with face-to-face teaching for the purposes of implementing learning strategies?', and finally, (4) 'Which feasibility conditions do academics perceive to be important to the realization of their intended use of technology?'

Before describing the study and reporting on results, it is important to contextualize the study firstly, by explaining what is meant by the term 'technology' as used in the study, and then giving a brief historical perspective to highlight developments in technology, and identify underlying pedagogical mindsets.

## **BACKGROUND**

The term 'technology' as used in the context of this chapter refers to the suite of digital technologies, both existing and emerging. The suite of technology includes laptop and desktop computers, smart mobile digital devices (phones, tablets, pens), Internet based services such as social networking tools, learning management systems, video streaming tools such as lecture capture and video conferencing, digital classroom software and so on.

The use of digital technologies for teaching has its roots in computer-based training. Computer-based training was made possible by mainframe computers in the 1960's and 70's. As the 1970's approached there arose a need to provide education to an increasing number of students. This led to the development of the PLATO (Programmed Logic for Automated Teaching Operations) system, one of the earliest uses of digital technology for learning (Bersin, 2004). PLATO enabled access to more than 3500 hours of training materials across over 100 subject areas, and it remained in operation for more than forty years (Smith & Sherwood, 1976). Terminals were located within educational institutions. The interface used a character-based system and the only input mechanism was the keyboard. The presentation of content was limited to line drawings, graphs and color photographs, displayed on a small 22cm screen. The system's limited support for media and interaction meant that learning experiences with the PLATO system were restricted to drill and practice approaches.

The mainframe systems of the 1970's severely confined access locations because the systems were expensive and complex, and were only available for installation within larger organizations. It was the emergence of the personal computer in the 1980's that placed access to computer based learning within the reach of the general population, in their own homes, and made it possible for more educational institutions to acquire the technology. With increasing technical sophistication of the personal computer the ability to produce highly interactive and media rich computer based content became a reality in the early 1990's. It became possible to present content on a digital platform that supported the integrated use of various media (audio, video, still images, animation, text), and the capacity to support sophisticated user interactions. This mode of presenting content became known as 'interactive multimedia'. The advent of the CD-ROM, with its cheap and high storage capacity, enabled the distribution of interactive multimedia content to a wide audience.

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