

Chapter 7

Rationalising Technological Temporality: Assessing Teachers' Changing Perceptions of Technology in Formal Educational Settings

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ABSTRACT

Literature on the implementation of digital technologies in formal educational settings reveals that schools 'do' respond to technology induced change yet not as fast as desired. In context, a dynamic autopoietic scenario is exemplified through the recursive dialogues taking place between implemented ICT related policies in education and teachers' actions to the adopted digital technologies. The chapter therefore proposes and describes an analytical lens which, based on outcomes of the author's personally conducted research, is directed towards recognising teachers' response to these structural modifications. Subsequently, to substantiate the model in this grey area of technology accommodation and adaptation in formal educational contexts, a strategy-in-practice approach is employed. By grounding information systems research into self-performed practice, case studies and discussions on the validity of the proposed analytical framework are made.

INTRODUCTION

The predictions on technology adoption and integration in diverse settings are a burning reminder that true guesses are rare. Less accurate ones are more common and, in the aftermath, the disappointment that inevitably follows tends to be more pronounced. Drawing from the history of technology, Jandrić (Cuban & Jandrić, 2015) remarks how attempts made more than half a century ago to associate technology with education have been futile. Establishing faithful projections based on the then existing technology was

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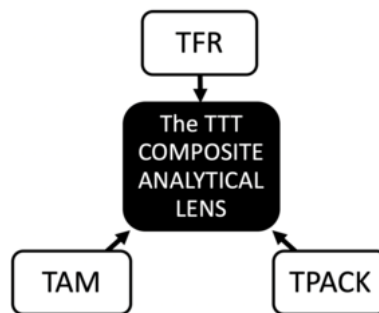
no match to our contemporary reality. However, within the exerted limitations of the then available technology, such biased leaps of faith did not happen in vain. Looking beyond on what failed to materialize, such predictions proved fit in expressing the aspirations that the wishful thinkers themselves perceived on the use of technology in formal educational contexts (Ibid., 2015).

Thus, by taking into perspective the strong and rapid diffusion of ICT in formal educational contexts this article presents a composite analytical model built around Technological Frames of Reference (TFR), the Technology Acceptance Model (TAM) and TPACK (Technological Pedagogical Content Knowledge). In context this theoretical framework is directed to explain teachers' changing technological frames in formal educational contexts and across time by bringing into focus perceptual and interpretational processes that educators must draw upon to accommodate themselves within changing digitally mediated scenarios.

Accordingly the write-up is structured into three parts where:

- a. The main focus and motivations underlying this write-up are presented and inherently supported by indicative questions that will guide the rest of the paper.
- b. Representations of the theoretical components that constitute the analytical framework namely: Structuration (Giddens, 2004), TFR (Orlikowski and Gash, 1994), TAM (Davis, 1989) and TPACK (Koehler, & Mishra 2008) are provided.
- c. As portrayed below, the merger of these seemingly distinct theoretical components endorse the design of a composite analytical lens designated as the TTT Framework. Exemplified by the outcomes of three author led studies, it is envisaged that this model can be employed to interpret modifications of perceived technology use in formal educational settings, across time and as a sustainable autopoietic system.

Figure 1. The TTT (TFR, TAM, TPACK) model for interpreting teachers' changing perceptions to technology use with time



MAIN FOCUS OF THE CHAPTER

Arguments in this chapter converge on discerning teachers' adaptations to ICT or digital technologies within formal educational contexts with time. The main focus underlying this writeup has been the introduction of an analytical model coined above as the TTT framework. The framework is directed to

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