Computer use at schools and associations with social-emotional outcomes — A holistic approach. Findings from the longitudinal study of Australian Children

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ARTICLE INFO

ABSTRACT

In drawing upon cultural-historical theory, this paper reports on the use of computers in Australian schools where a holistic analysis was undertaken to explore the possible associations with social-emotional outcomes. By conducting a quantitative analysis framed around a conceptual model that used the concept of perezhivanie, it was possible to examine a sample of 3345 children (8–9 years old) who participated in the Longitudinal Study of Australian Children (wave 5) and to fill a gap in the literature on whether computer use has an influence on three social-emotional outcomes: self-concept, emotional problems and school liking. Findings suggest that Australian children are using computers in school in a very similar way, mainly practicing specific learning skills (e.g. maths and literacy) and rarely engaged in creative activities. In addition, findings reveal that overall computer use does not appear to have a significant impact on children's social-emotional outcomes. One exception, a small significant association between creativity and self-concept was found and further explored. Implications for practice and recommendations for future research are discussed.

1. Introduction

Computer use has been a standard school practice for more than twenty years now. Although the educational scenery is currently undergoing technological transformations with the wide spread use of new digital devices, such as tablets and other mobile tools, our view on how computers are used in schools is still blurred and fragmented suggesting that a more holistic study is needed. Technology is now a constant presence in children's lives. According to the Australian Bureau of Statistics (ABS) (2011; 2012) during 2008–09, nearly three-quarters of households had internet access, up from one in six a decade earlier, and 82.6% of households had access to computers in 2010–11 raised from 67.1% in 2005. Equally, the 'Frequencies Report' of the Longitudinal Study of Australian Children (LSAC) affirms that the vast majority of families (95.52%) have Internet access at home; 31.18% of children aged 8/9 years have Internet access at their own bedroom and the majority of parents have set rules for the time of internet access (82.68%) and type of internet websites their children visit (94.32%).

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Despite the growing role of technology in every aspect of children's lives the number of studies investigating the effect of this use on children's social-emotional development is disproportionate. That is, we know very little about children's emotional engagement with technologies, even though these qualities are evident in everyday life. In this paper emotional engagement has been conceptualised from a cultural-historical perspective as encompasses both the personal characteristics and the environmental conditions that an individual child experiences (Vygotsky, 1994). To support our research we draw upon the concept of perezhivanie for examining children's emotional engagement with digital devices. The concept of perezhivanie is discussed further below. Data about child engagement with digital devices and the scores of three social-emotional measures (self-concept, emotional problems, school liking) utilised in the LSAC are drawn upon. Specifically, we used data from the most recent release of the LSAC (wave five; 2014) because it had a specific focus on technology.

The goal of this paper is to examine the nature of children's engagement with technology from a cultural-historical perspective and to determine through a more holistic analysis, if children's use of digital devices is associated with their social-emotional development. The review of the literature will first provide a brief analysis of the study's theoretical framework. The next part of the literature review will critically report on studies around the use of technology and children's social-emotional development and attitudes towards school to identify existing gaps and limitations and assist in setting the parameters of the present study. The last part of the review will elaborate on the research gap and the aims of the present study.

2. Literature review

2.1. Cultural-historical theory

Perezhivanie is a Russian term that is difficult to translate into English but has been shown to be a powerful concept for studying emotions (Vadeboncoeur & Collie, 2013). Perezhivanie has been conceptualized as both a phenomenon and as a concept (see Veresov, 2014). The former captures the idea of emotionally experiencing a situation (e.g. Ferholt, 2010; 2015; Vasilyuk, 1984), whilst the latter focuses on perezhivanie as a unit of consciousness (e.g. Davis, 2015), as the unity of emotions and cognition (e.g. Vadeboncoeur & Collie, 2013), and as a unit of analysis (e.g. Bozhovich, 2009). These dimensions of perezhivanie charactise in research the indivisible unit of personal characteristics and situational characteristics, thus constituting a holistic perspective for research. Particularly relevant to this study is the unit of analysis, which represents the essence of the child (personal characteristics), the environment (situational characteristics), and how the child is relating to their environment (perezhivanie). This holistic view is captured in this concept (Vygotsky, 1994) and has been increasingly drawn upon in research where emotions are studied (e.g. Roth, 2008).

Vygotsky (1994) argued that in research the analysis should always be from the point of view of the child's perezhivanie, because all the personal characteristics are present when determining the attitude to a given situation, such as when a child is using a digital device to support their learning or engagement in creative activities in the classroom. The unit is both outside the child as the concrete environment and also at the same time is how the child is experiencing that particular situation based on the child's own personal characteristics. This concept supports researchers by drawing their attention to how children emotionally experience and relate to technology.

Vygotsky (1994) argued that in one situation some constitutional characteristics of a child play a primary role, but in another situation there will be a different set of constitutional characteristics evident. For instance, in the situation of using computers for computational work a particular emotional quality or attitude to the situation may be evident, which could be different if children were engaged in creative and imaginative activities with the support of digital devices. That is, a different set of personal constitutional characteristics might be foregrounded. Personal constitutional characteristics are mobilized by the situation. These personal constitutional characteristics are laid down and crystalized within a given emotionally charged situation. But this does not represent the aggregate of constitutional characteristics, but rather different events will elicit different perezhivanie. As such, it becomes important to find the constitutional characteristics that have played a decisive role in determining the child's relationship to the given situation. It is argued by Vygotsky (1994) that each situation is always represented by a particular perezhivanie, and this perezhivanie is the unit of environmental characteristics and personal features.

Vygotsky argued that in the study of the child the main task of the researcher is to find the particular prism through which the environment is refracted. That is, to find the prism which best represents the refracted relationship between the child and the environment in a given situation. The method for this kind of study is to determine the unit of perezhivanie. The unit is the product of the analysis. The unit does not lose any of the characteristics of the whole (personal and environment). In our study, we were interested to determine the relationship between computer use and social-emotional outcomes. The concept of perezhivanie supported the goals of the research by giving the researchers a conceptual framework for making sense of the LSAC survey data in a holistic way, thus having the potential to add to the body of literature on the use of ICT, as is discussed in the following section. That is, based on a specific dataset (LSAC, wave 5) we sought to examine the personal characteristics of self-concept, emotional problems, school liking and the situational characteristics of computer use (environment) in order to determine if there were any links with social-emotional development.