

## Chapter 29

# Cybermedia Use, Multitasking, and Academic Distractibility

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### ABSTRACT

*Cyber-media use creates opportunities to engage in immediate, multiple, concurrent activities. Research has demonstrated that cyber-media users commonly take advantage of these opportunities to multitask by performing two or more simultaneous discrete activities. This pattern of cyber-media use may create demands on users' attentional resources that result in difficulty with tasks that require focused attention. This review will examine connections among cyber-media use, multitasking and related academic distractibility, attention, and performance. Research on cyber-media distractibility is considered within the historical and intellectual context of related research in media psychology and on divided attention. Results generally suggest that multitasking leads to the division of attention, greater distractibility and poorer task performance across a variety of domains. However, the possibility of enhanced performance in some domains (e.g., visual attention) and for some information processing styles (e.g., tasks emphasizing breadth rather than depth and focus) cannot be discounted.*

### INTRODUCTION

Cyber-media use may be defined as the utilization of electronic devices that provide access to information and/or communication delivered through the internet and cyberspace such as computers, personal digital assistants and cellphones or

other portable cyber-devices. The use of cyber-media may create demands on users' attentional resources that result in difficulty with tasks that require focused attention, such as traditional school-related tasks. For example, it is common for cyber-media users to multitask; i.e., to perform two or more simultaneous activities or tasks. Such

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multitasking may lead to the division of attention and poorer task performance. Some parents and educators have expressed concern that over time, multitasking and divided attention may contribute to a cognitive style characterized by difficulty performing tasks that require focused attention and persistence (e.g., academic tasks). Others argue that cyber-media users may adapt and become “master multitaskers” capable of switching their focus with little effort to meet the demands of the rapid-fire media world in which they live. The goal of this review is to explore these competing ideas by considering the history of related research in media psychology and on divided attention, and to examine what is known about cyber-media use, multitasking and related academic distractibility, attention and performance.

## **OVERVIEW**

There are two lines of research that have led to the current investigations of cyber-media use, multitasking and academic distractibility. The first is the history of research in media psychology on the effects of all types of media on inattention, distractibility and impulsivity. The second is the history of research in cognitive psychology on divided attention and the underlying principles that determine how effectively human beings can multitask.

### **Media Psychology: Pre- and Non-Cyber Media and Distractibility**

To understand and contextualize our current knowledge relating to cyber-distractibility, it is useful to briefly overview relevant past research in media psychology. Examinations of connections among electronic media use, cognition and factors associated with distractibility and learning (e.g., impulsivity, focus, persistence) have a history dating to the 1970’s. In general, researchers have been interested in examining whether the form,

amount, pacing and content of electronic media use influences the way we attend to and process information. This research has demonstrated relationships both positive and negative among these variables, although in some cases interpretations of the directionality of effects remain somewhat controversial.

There has been considerable disagreement as to whether or not the formal features of television, which typically include fast pacing, rapid scene changes, commercial interruptions, etc., interfere with attention and lead to a cognitive style characterized by an inability to focus and sustain attention. Some media scholars hypothesized that the rapid pacing and action of television programming (e.g., its “busyness”) might reduce reflective thinking of children (Singer, 1980; Singer & Singer, 1983) and lead to a style with less task persistence (Wright & Huston, 1983).

In longitudinal studies across childhood and adolescence, Christakis and others (e.g., Christakis, Zimmerman, DiGiuseppe, & McCarty, 2004; Johnson, Cohen, Kasen, & Brook, 2007; Landhuis, Poulton, Welch, & Hancox, 2007; Zimmerman & Christakis, 2007) have found that the amount of television viewing by young children, particularly the viewing of non-educational programming, predicts later attentional problems. Zimmerman and Christakis (2007) proposed that the rapid pace and change characteristic of most modern television programming may lead to continuous rapid orienting responses in viewers that may negatively influence sustained attention. They hypothesized that long-term exposure beginning in childhood may influence neural development and reduce viewers’ attention spans.

It should be noted however that others have proposed that much of viewing involves strategic attention. For example, Daniel Anderson and his associates (e.g., Anderson & Levin, 1976; Anderson, Choi, & Lorch, 1987; Burns & Anderson, 1993; Lorch, Anderson, & Levin, 1979) argued that sustained looking at television is associated with cognitive engagement, and that children learn

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