Communication Overload in Online Communities in Higher Education:
A Case Study

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ABSTRACT

This paper presents part of a research project on the use of information technology by students and teachers to communicate with each other in online community contexts of higher education institutions. The part of this project which investigated whether the number of messages exchanged and the effort required to process them are a source of communication overload is the focus of the paper. The research was conducted at a Portuguese university, was supported by an analysis model, and data were collected through an online questionnaire. Descriptive statistics and inference tests were used to analyse a validated data sample of n = 570 students and n = 172 teachers. The results show that students and teachers generally perceive communication overload when using communication technologies to communicate with each other. This perception is particularly relevant when using email, and inference tests show that it is higher for teachers than for students.

KEYWORDS

Communication, Higher Education, Online Community, Overload, Technology

1 INTRODUCTION

Online communities have emerged from technology-based forums and are rooted in environments where individuals and organizations with common interests exchange information and knowledge (Autio, Esmt, & Frederiksen, 2013). As the Internet and mobile technology have become increasingly ubiquitous, the development and emergence of online communities has grown significantly and is now supported by a wide range of web products and services (Malinen, 2015).

The advantages of online communities are numerous in terms of collaborative work, knowledge transfer and information ubiquity (Fisher, 2019), but their success depends heavily on their members' participation (Faraj, Jarvenpaa & Majchrzak, 2011). This raises several challenges, including strategies to keep the participants motivated in the community (Malinen, 2015). The information and communication overload may be an issue in online communities (Pirkkalainen & Salo, 2016; Zhang, 2018) and may jeopardize their sustainable interaction (Ouardi *et al.*, 2016; Ramadan & Abosag, 2017).

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Currently, higher education institutions may be seen as online communities (Kent, Rechavi, & Rafaeli, 2019; Witzig, Spencer, & Myers, 2017) because of the digital transformation they are facing (Santos, Batista, & Marques, 2019b). Thus, information and communication overload can also be seen in this context. For example, students often feel more overloaded in courses that use e-learning environments compared to traditional classroom courses that do not use such online communities (Kushnir, 2009). In the same vein, Chen, Pedersen and Murphy (2011) describe that students are more overloaded in virtual learning environment courses than in traditional classroom courses. In online education, overload is a significant factor in interactions between teachers and students.

However, information and communication overload is not an issue that has been researched substantially with regard to its effects or strategies for dealing with the information produced and shared through participation in this type of online community (Kearns, Frey, Tomer, & Alman, 2014).

This paper presents part of the results of a more comprehensive research project that analysed how students and teachers from higher education institutions use communication technologies (CT) to communicate (Santos, Batista, & Marques, 2019a, 2019b). On this paper, the results on the perception of the communication overload that students and teachers perceive through CT are described and discussed, subject to the following:

- Research question: do students and teachers perceive communication overload when they use CT to communicate with each other?

Figure 1 presents the research model, indicating the main stages of the research and the approach followed. A literature review was carried out (section 2) and the methodology to be applied was defined (section 3). Following the methodology, data were collected, and the results were produced (section 4) which were the subject of analysis and discussion, supporting the answer to the research question (section 5). Finally, the conclusions of this investigation and some future research directions are described in section 6.

2 LITERATURE REVIEW

The concept of Communication Overload is often associated with the concept of Information Overload, being practically inseparable since the communication process presupposes the transmission of information. A bibliometric analysis has shown that information overload and communication overload problems are nowadays interrelated (Batista & Marques, 2017).

In addition, opportunities in the digital age have created solutions to some information overload problems, but at the same time, they have created new challenges. Many of these challenges arose with the development of CT that allowed the dissemination and exchange of large amounts of information, now so intense and so present in the lives of individuals, organizations, and societies, that they represent a new problem: communication overload (Batista & Marques, 2017).

There are several definitions of these concepts. One of the most used and cited definition of Information Overload is known by an inverted u-curve, which establishes a cause-effect relationship between the amount of information available and the ability of individuals to make decisions (Eppler & Mengis, 2004). Thus, the more information available, the greater the decision-making capacity will be until this trend is reversed. This occurs when the amount of information is excessive, making it difficult to process efficiently and therefore contributing negatively to decision making. At this point, information overload occurs (Eppler, 2015; Eppler & Mengis, 2004). This approach corroborates previous definitions, namely by Meyer (1998) and Jacoby (1984), who state that information overload can occur when the volume of information exceeds the limit of human processing capacity and, as a result of this overload, dysfunctional effects such as stress and confusion can occur. In addition,

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