

Chapter 5

Contribution of EMIS Platforms to Education Management and Recent Applications

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ABSTRACT

The purpose of this study is to investigate the effect of educational management information systems (EMIS), which has a great importance in educational organizations. By the development of information technologies, EMIS became very popular in educational management issues. EMIS systems allow students, teachers, administrators, parents, and other stakeholders to analyze, synthesize, and disseminate educational data. This chapter focuses on data process, analysis, synthesis, and design process of educational management information systems. EMIS systems help educators to handle information management. This chapter, in depth, argues data storage, accuracy, planning, scalability, and transparency issues of EMIS systems. The focus is on how using EMIS systems helps educational administrators and decision makers as well as educational systems and economy.

INTRODUCTION

The purpose of the study is to investigate the effectiveness of the educational management information systems (EMIS) in education contexts. In this regard, the study focused on the benefits and limitations of educational management information systems (EMIS) to find out how using such a system is perceived by all stakeholders including students, teachers, parents, and administrators. Prior research clearly shows that using EMIS systems lead to different expectations; that is, there are different aspects regarding using

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such educational information systems (Wohlstetter, & Odden, 1992; Voigts, 1999; Reigeluth, Watson, & Watson, 2008). For example, collection, processing, storage, accuracy, analyze and dissemination of educational data are important factors that must be taken into account to establish such education management information systems. Moreover, technical aspects of the systems including database structure entities, and software interface are also technical sides for such EMIS systems. Some studies argue that educational management information systems must be established on an automation by which all stakeholders work together smoothly (Bhila, 2018; Bright & Asare, 2019). From this perspective, Polat and Arabacı (2013) indicate that teachers and administrators' perception of such systems make a common consensus on efficiency, effectiveness and adequacy. Similarly, Özkan (2009) focused on the principals' opinion on the contribution of information systems in education contexts. Findings clearly showed that principals seemed enthusiastic to use e-school systems for educational purposes. On the other hand, Ersoy (2010) find out that administrators (especially principals and vice principals) still have some doubts about reliability of the EMIS systems. The research indicates that especially teachers do not use the EMIS systems efficiently and adequately. Prior research clearly concluded that studies regarding the effectiveness of EMIS systems are in conflict with each other. Therefore, this study further investigates how stakeholders perceive the efficiency and effectiveness of the EMIS systems in educational context.

BACKGROUND

Radical and dramatic changes in computer and information technologies (ICT) effected the working style in planning and management issues. By using relevant computer technology support, the management and planning processes in all sectors embraced the need for speed, precision and decision-making and record keeping. This trend raised a new approach called "management information system" (MIS). Although MIS systems are not new, information technology helped to develop a new MIS approach by integrating internet and web resources. New MIS approach made dramatic changes in all sectors including financial institutions, transportation, health sectors, and finally education (O'Brien & Marakas, 2006). MIS systems allowed managers to control, quantify, and disseminate an organization's expanse of data. (Petrides, & Guiney, 2002). The use of MIS systems firstly appeared in business environment. For example, finance and accounting begun to use MIS systems for computer based computations. Then, MIS systems seemed to change in human resources and manufacturing with the help of information technology. In such systems, database management and information management work together to handle the large quantitative data. The pressure coming from need for speed, efficiency and accuracy pushed organizations to make rapid decision and obtain fast and reliable information (Bhila, & Maseru, 2018). Thus, MIS systems increased the use of computer technology needed to manage information, and interpret data for decision-making. Transaction processing systems (payroll systems, order processing systems, stock control systems etc.), decision support systems and experts systems are some examples of MIS. It is also important to indicate that MIS systems include Education Management Information Systems (EMIS) and Student Information Systems (SIS) systems.

Education Management Information Systems (EMIS), with help of dissemination of computerization in educational environments, become a necessity and core of today's educational management. As a simple definition, we can define the EMIS systems as a support for the planning and managing of the educational activities by using computer and information systems. Villanueva (2003) defined an EMIS as "organized group of information and documentation services that collects, stores processes analyzes

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