Teaching and educational notes

Addressing business needs: A creative module for teaching data macros in an accounting information systems course

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ABSTRACT

Although database technology has advanced considerably, Accounting Information Systems (AIS) courses in business schools generally include only the basic aspects of databases, such as creating tables, queries, forms, reports and relationships between tables. One advanced topic that can be covered to enrich such courses is "triggered events." Triggered events are useful in implementing accounting processes, such as data validation, control and exception reporting in databases. To date, teaching triggered events required enterprise-level database systems, thereby making it difficult to replicate in an introductory class. However, data macro features introduced in the 2010 version of Microsoft Access can now be used to teach such concepts in an easy-to-use interface. The proposed module in data macros helps students gain the ability to implement validity control and exception-reporting in databases. In addition, the module helps accounting students realize the importance of databases in meeting certain accounting needs. The effectiveness of the proposed module was assessed by an exercise and a survey.

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1. Introduction

Advances in information technologies (IT) have changed how accounting information is recorded, processed, and reported (Nieschwietz, Pany, & Zhang, 2002). The ever-increasing role of IT in the field of accounting makes it imperative for IT to be a fundamental part of accounting education (Borthick, 1996; Zhou, Djatej, & Chen, 2011). One of the pedagogical challenges, as identified by the Pathways Commission, is the "[d]ifficulty incorporating innovation and cutting-edge developments, especially technology…" (The Pathways Commission, 2012, p. 38). Database and IT controls have been identified as essential skills (Callaghan, Peacock, & Savage, 2001). Conversely, a deficiency in database skills among accounting students is a cause for concern (Stoner, 2009). Strategic effort is needed to reduce the widening gap between skills provided by accounting education and those needed in the ever-evolving IT-based business environment (Chandra, Cheh, & Kim, 2006). Although some attention has been paid to enhancing students' understanding of the role of database systems in accounting and to integrating the modeling/operational aspects of such systems into the classroom (Pillsbury & Wang, 2002), instructors must continuously adopt proven, contemporary trends to keep Accounting Information Systems (AIS) curricula current (Fordham, 2005).

1.1. Role of databases in AIS courses

Because databases are used in many applications in the workplace, a basic level of competency in databases is expected among business students (Baugh, 2004). Simkin (2005) stresses the need to teach a broader set of concepts in database management that includes normalization, REA (resources, events, agents), query construction, output design concerns, and macro programming.

Possessing such skills becomes all the more beneficial for accounting students because they are used in implementing accounting concepts such as auditing, control, and validation. Doost (2002) notes that teaching material related to AIS/database courses has not kept pace with the introduction of new technological concepts, while Harrast, Strong, and Bromley (2010) observe that database skills among accounting students is low compared to other IT skills such as using spreadsheets, email, and word processing. The authors attribute this disparity to the complex nature of databases compared to other tools.

Educational cases in the past have attempted to present the role of databases in addressing management issues. Borthick, Jones, and Kim (2001) covered monitoring activities for compliance using queries based on data from an automobile manufacturer and its dealers. Bradford, Samuels, and Wood (2008) highlighted the use of the Microsoft Access database in combining data from disparate sources to address management problems in a car dealership. Along similar lines, this paper utilizes a new feature of MS Access 2010 called "data macros" to teach accounting concepts such as exception reporting, validity control, and automation. The illustrations of data macros given in this paper can be used as supplemental material in AIS/database-related classes for accounting students. The use of data macros-based exercises helps students understand the dynamic nature of databases and gain awareness for how some accounting concepts (e.g., auditing, control, error-checking) work in modern databases.

The teaching module is designed to help students achieve the following learning objectives:

1. Use event-driven data macros to validate data entry.
2. Use event-driven data macros to manipulate actions based on events in tables.
3. Use event-driven data macros to populate tables and send emails based on events in tables.
4. Independently design and implement event-driven macros to address business scenarios in different contexts.

2. Microsoft Access data macros

Educators have been creating innovative methods to help students learn database concepts and design (e.g., Cvetanovic, Radivojevic, Blagojevic, & Bojovic, 2011; Murray & Guimaraes, 2008;