

Developing a Web Application for Managing a Construction Case Study Database

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Real world experience is a valuable addition to a construction management (CM) degree. Universities and colleges offering degrees in CM are always looking for ways to integrate real world experience into their curricula. As a part of these efforts, authors of this study have been collecting a number of real world problems and solutions from construction industry professionals referred to in this publication as “case studies”. Displaying these case studies in a way to benefit instructors and students has become a challenge as the number of these cases continues to increase along with the complexity of the information within. This study aims to present a methodology to develop a collaborative, online database that organizes real world case studies with a user interface. This interface would allow researchers to update the database as well as provide easy access for CM instructors and students to view, sort and utilize this data. Authors conducted a previous study in order to develop a general process for the creation of multiple case studies based upon the results of a survey that was distributed to a number of companies in the northeastern region of the United States. As the authors continue to collect case studies there are currently a total of 59 survey responses that have been analyzed to serve as the initial database. This analysis included reviewing each case study in order to identify associated: (1) American Council for Construction Education (ACCE) learning outcome(s), (2) common keywords, (3) contract/project value, (4) project duration, (5) project location, and (6) project delivery method. Based on the above criteria, a physical database is created using Structured Query Language (SQL) with the backend communications achieved using server-side scripting language known as PHP. The final step of this study includes the use of HyperText Markup Language (HTML), Cascading Style Sheets (CSS), and JavaScript in order to develop a user interface for instructors, students, and future researchers. Preliminary results show that the development of the online database is feasible. Currently, an early version of the database is in development to include the case studies and their associated analyses. These cases are searchable by each of the six (6) aforementioned criteria in addition to any applicable courses within the CM program at Roger Williams University. It is expected that by the end of this study, a fully functional online database will be completed and ready for continued use for CM researchers and the education of CM students. This research provides opportunities to advance the learning outcomes of CM students at higher education institutions by providing access to real world problems and their solutions. For example, using the web application introduced in this study will allow instructors to search for case studies that apply to a specific learning outcome, a keyword, or any of the six (6) criteria, which in return may improve instruction with easy access to real world examples. Future research will include exploring improved user interfaces, increasing the number of criteria and the case studies used in the database, and extend it to other related fields such as engineering and architecture.