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Interdisciplinary App Development Project:
A Case Study Across Three Departments

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ABSTRACT

The benefits of teams in organizations are well known. Professionals in many fields, including Information Systems, work with others in teams. Often, these team members have varied backgrounds. To provide educational experiences that prepare students for their careers, interdisciplinary work is becoming increasingly popular. This case describes an interdisciplinary application development project that brought together students from Computer Information Systems, Computer Science, and Electronic Media. This was the first project of this scope, bringing together students from three different Colleges on campus, to be attempted at the University. Development of the project, execution of the plan, and the experiences encountered by the students are provided. Issues were encountered during the semester-long project, leading to recommendations for educators interested in offering similar projects.

KEYWORDS

Case Study, Interdisciplinary, Project Management, Software Development, User Experience

INTRODUCTION

Many information system design situations today include users, designers, and developers who, with their own unique group and individual perspectives, need to interact so that they can come to a working understanding of how the information system being developed (Sonnenwald, 1995). Teamwork is an inevitable aspect of organizational operations, allowing them to accomplish the work that can make them thrive and maintain success (Chen, Sager, Corbitt, & Gardiner, 2008). The ability to be a team player is one of the top characteristics that employers desire in a prospective employee (Ashraf, 2004), especially since teamwork quality is significantly related to project success (Hoegl & Gemuenden, 2001). Additionally, employers seek employees who can analyze, evaluate, and find solutions to problems-higher level thinking that comes from active and cooperative learning (Hernandez, 2002).

College graduates must gain teamwork skills to increase their chances of success in the workplace. Since the relatively-safe environment of the classroom is preferable for learning initial teamwork skills, many educators have incorporated team-based work for students to accomplish learning objectives (Kruck & Teer, 2009). Though the classroom cannot accurately depict the corporate environment, many educators strive to provide a learning experience that matches as many aspects of the workplace as possible. Numerous researchers have shown that the learning-by-doing approach of

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group projects results in active learning and far greater comprehension and retention of information, higher levels of student motivation and achievement, development of critical reasoning skills, improved communications skills, and stronger interpersonal and social skills than is found with traditional lecture-style teaching methods (Ashraf, 2004; Hansen, 2006; Williams, Beard, & Rymer, 1991).

Multidisciplinary teams are believed to be useful in developing innovative and optimal solutions to many types of business problems (Mohrman, Cohen, & Morhman, 1995). Team members may come from multiple different functional areas and have a wide variety of backgrounds. However, teams in a classroom are normally comprised of like-minded students, as they are all taking the same class, likely have the same major, and are similar in age and experience. Though the homogeneity of members in a class team can still provide the opportunity to gain functional teamwork skills, this does not match with practice. To address this concern, students should learn how to function on interdisciplinary teams, similar to what they will experience after school. The purpose of this paper is to describe an interdisciplinary group systems development project designed by three faculty members to help students learn how to function in an interdisciplinary team. Interdisciplinary team, as the term is utilized in this paper, refers to combining students with differing undergraduate majors, from three different courses, and stretching across three different Colleges at the University.

As part of the interdisciplinary systems development project described in this paper, undergraduate students in the Computer Information Systems (CIS) from the College of Business, Computer Science (CS) from the College of Basic and Applied Sciences, and Electronic Media (EM) from the College of Media and Entertainment majors were required to collaborate as project team members. This paper should be beneficial to educators interested in initiating such wide-spanning project teams. This section is followed by a brief review of related literature. Next, a description of the interdisciplinary group development project and how it was formed is provided. Following this, a description of the team formation and the students leads into the presentation of the semester-long project. A discussion of the project from both the educator and student point-of-view wraps up the project, and lastly, lessons learned and advice for educators are offered.

INTERDISCIPLINARY PROJECT

Motivation

It is well known that teams within organizations can have substantial positive impacts on productivity and other benefits (Hamilton, Nickerson, & Owan, 2003). For example, in the steel industry, productivity is higher at firms that use teams, especially where the product and production process are more complicated (Boning, Ichniowski, & Shaw, 2001). Often, these productivity gains are greater when the team members are diverse in skill (Mas & Moretti, 2006). Even when there is no financial reward for working on a dull task, worker productivity rises when workers work in the same room as others (Falk & Ichino, 2006).

The benefits of teams can also be seen in the educational environment. Teachers have found that teamwork amongst students can increase learning (Jensen, Moore, & Hatch, 2002). Students are exposed to the work practice of other disciplines and made to better understand their own role and value in team based collaboration (Adamczyk & Twidale, 2007). It follows that teamwork amongst students with different backgrounds can further increase the learning potential. Part of this learning revolves around the usage of appropriate collaboration technology. Educators in the field of technology need to help their students acquire the skills needed to work in teams (Kruck & Teer, 2009), including providing exposure to appropriate technological tools. Given the norms of virtual teams in the workplace that the students will be joining shortly, students will benefit from interdisciplinary team projects that impose a separation in time and space, and benefit from the latest technology.

The Information Systems (IS) discipline is a natural fit for interdisciplinary projects. The IS field came into existence in the 1960s, forming from the nexus of computer science, management and