

EMBEDDING INFORMATION SYSTEMS ENVIRONMENT MODULES IN INFORMATION SYSTEM CURRICULUM

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ABSTRACT. Information System is an important computing discipline, but its curriculum is very diverse due to its multi-disciplinary nature. As a result, different academic institutions have given different flavor to their curriculum. In this paper, we discuss implications of embedding Information Systems Environment component in an Information System curriculum. We discuss the results of a survey and highlight that there is a need to increase the motivation of computing students to undergo IS environment courses so that they can perform better in such courses. The discussion from this paper will help academicians in chalking out strategies to improve the performance of students in Information System Environment modules.

Keywords: Business, Information System, Curriculum Design, Information System Environment

1. Introduction.

As the computing artifacts have transformed modern day work and social life, this has also resulted in evolution of computing as a scientific discipline [1]. Association of Computing Machinery (ACM), the leading computing professional body, categorizes computing into five sub disciplines which are Computer Engineering, Computer Science, Information Systems, Information Technology and Software Engineering [2]. Information System is attributed as a field looking at the application of computing artifacts in the business environments. However, information system discipline is the one which has huge diversity in the nomenclature mainly arising due to its multidisciplinary nature [cf. 3, 4, 5, 6]. Information system has gained enormous popularity of late because of “school” evolution in United States [7], but it is quite varied in different geographical regions [8, 9, 10, 11]. As a result, curriculum design for information system degree programs is quite challenging and varied and there have been many guidelines on designing curriculum for an information system program [12, 13, 14, 15].

Keeping in view the applied nature of discipline, information system academic programs have always included some IS environment modules. However, the understanding of business environment is varied among different stakeholders due to the interdisciplinary background of stakeholders [16]. Information System Environment is an area where technology is applied in organizational settings by Information System professionals. Majority of the IS programs have mainly focused on general business environment; however, recently environments like health, nursing, geo-science have also emerged. In this paper, we look at the implications of embedding information system environment modules in information systems curricula.

2. Stakeholders Interests.

If we analyze the stakeholders in information system curriculum, then we can identify three key stakeholders i.e. organization offering academic program, professional bodies of IS discipline and students. In this section we analyze the interests of these three stakeholders in embedding IS environment in an IS curriculum.

2.1 Organizational View:

Each academic institution is interested in building their own identity to position itself in the academic discourses at local/regional/global level. In case of multi-disciplinary academic programs such as information systems, each parent institution intends to give its own flavor to the program. Thus, the focus on the distribution of courses in the curriculum depends on the department who has designed this program. An IS program managed by a business department normally has more focus on business whereas a program hosted by a computing department has more focus on technology. This aspect has also been accepted by the ACM, while giving its recommended IS curriculum, ACM has recommended only seven courses as core, and kept it to the organizations to define the nomenclature as per their own strengths [14].

2.2 Professional Bodies View: Different professional and accreditation bodies have set their own recommendations and benchmarks to embed information system environment modules in an IS degree program. Association of Computing Machinery (ACM) and Association of Information Systems (AIS) being the leading professional bodies in the field have jointly proposed detailed guidelines about the inclusion of Information System Environment modules. These proposed guidelines have chalked out that a typical information system program offered at a North American Business School have 8 (24 Credit Hours) such courses. However, information systems programs offered in a North American non-Business School environment is typically having 5 courses (15 credit hours). It is further highlighted that a typical European Business School's Information Systems program typically includes 10 courses (30 Credit hours) focusing on Information System environment [14].

Similarly, Accreditation Body for Engineering and Technology (ABET) is a leading accreditation body, and as per its criteria an information system degree program should have minimum 15 credit hours cohesive content highlighting a specific information system environment [17].

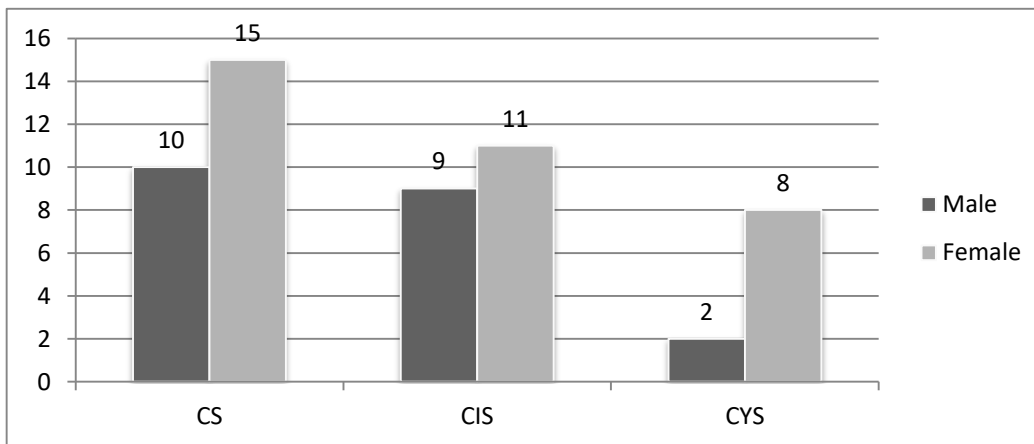


Figure 1: Intended Specialization

2.3 Students View: Students are a major stakeholder in a quality educational setup [18]. They may have issues to understand the multi-disciplinary nature of IS field. There is a myth that IS students of computing departments often feel IS environment courses redundant, whereas students of Business department's IS program have same opinion about technology courses. To understand students' view, we conducted a survey with a class of students who was enrolled to take a Business course at a Saudi Arabian University's computing college. There was a total of 56 students among them 21 were male and 35 females. This business course was in foundation year and students have not yet selected their major. As a result, the first question was about their intended choice. The college offered three undergraduate programs namely, Computer Science (CS), Computer Information Systems (CIS) and Cyber Security and Digital Forensics (CYS). As figure 1 suggest that Cyber Security and Digital Forensic program is less popular among students. This is the newest program of the college and this could be the reason for low score.

Secondly, we asked to understand their motivation for registering this course. As figure 2, suggests 57% students are not motivated that how this course can help them in their computing career and studying this course only because it is compulsory to complete the degree.

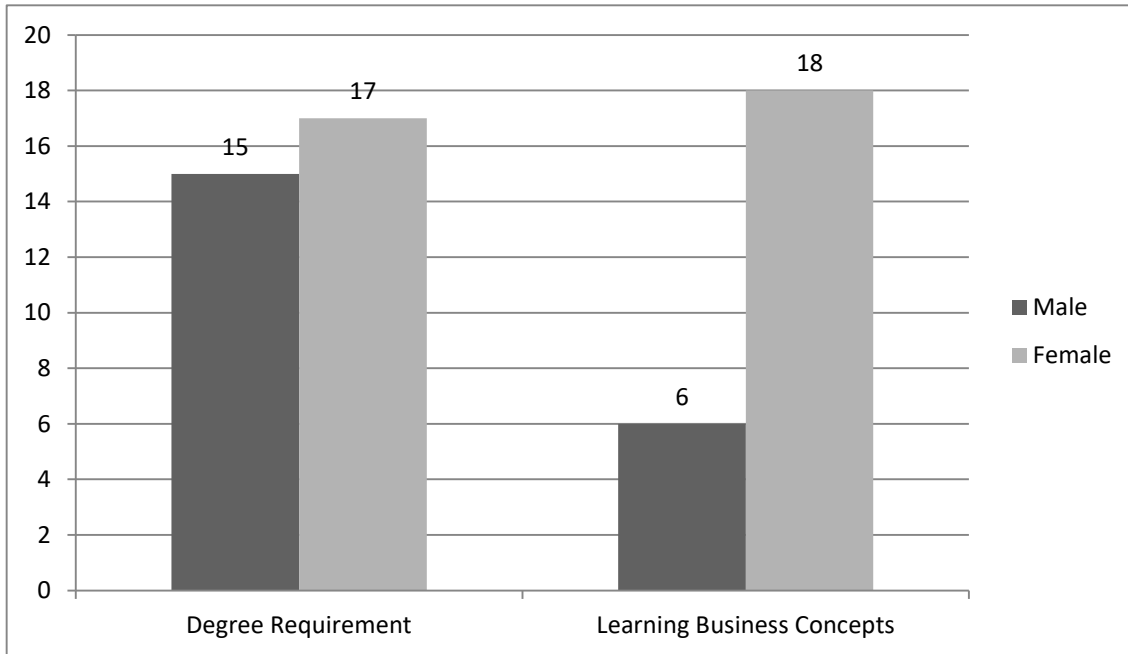


Figure 2: Motivation to Study Business Course

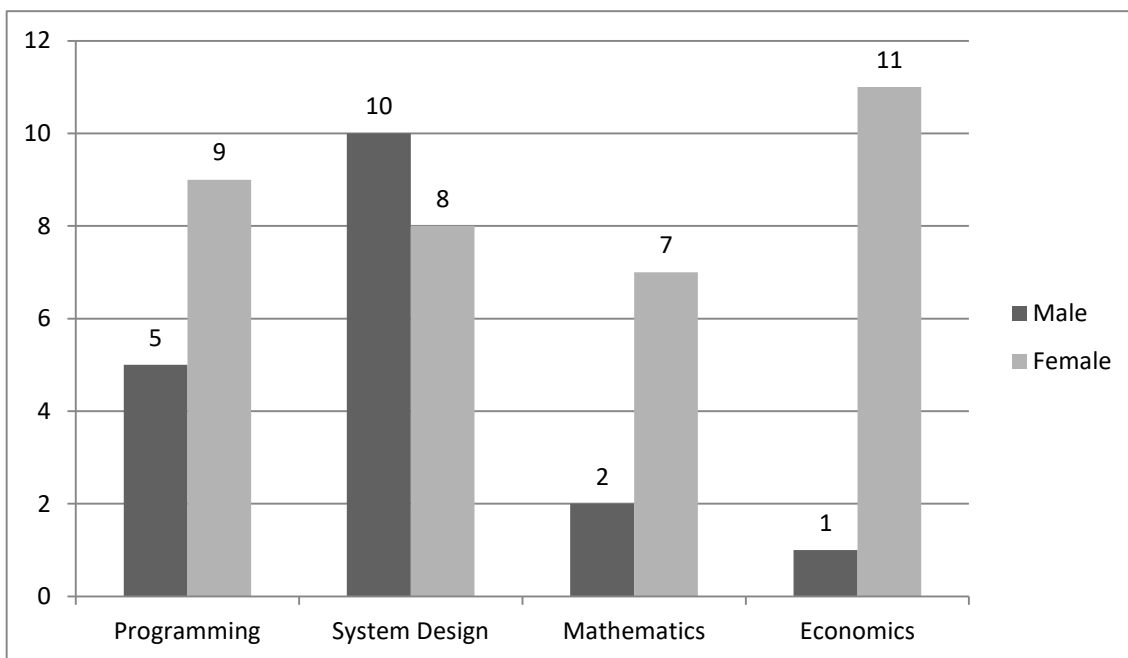


Figure 3: Potential Replacement of Business Course

To further understand the students' perception, we asked that if you have a choice to remove this course from your curriculum then the replacement courses should be from which specialized area. Most students opted that they should have a course from system design area. In case of male students this course was a clear choice, but the female students' opinion was divided, as shown in figure 3.

Around 43% of students have the expectation that business course will help in improving their

project management skills whereas 36% respondents believe that this course will help in increasing their understanding of organizational processes, as shown in figure 4.

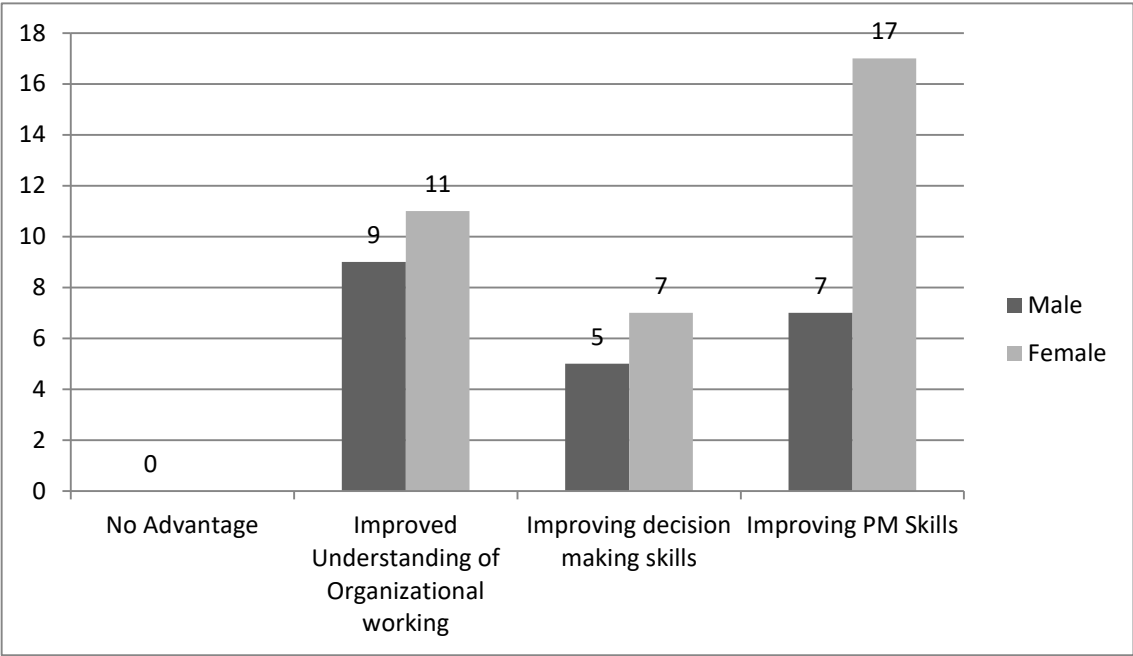


Figure 4: Expectation from Enrolling Business Course

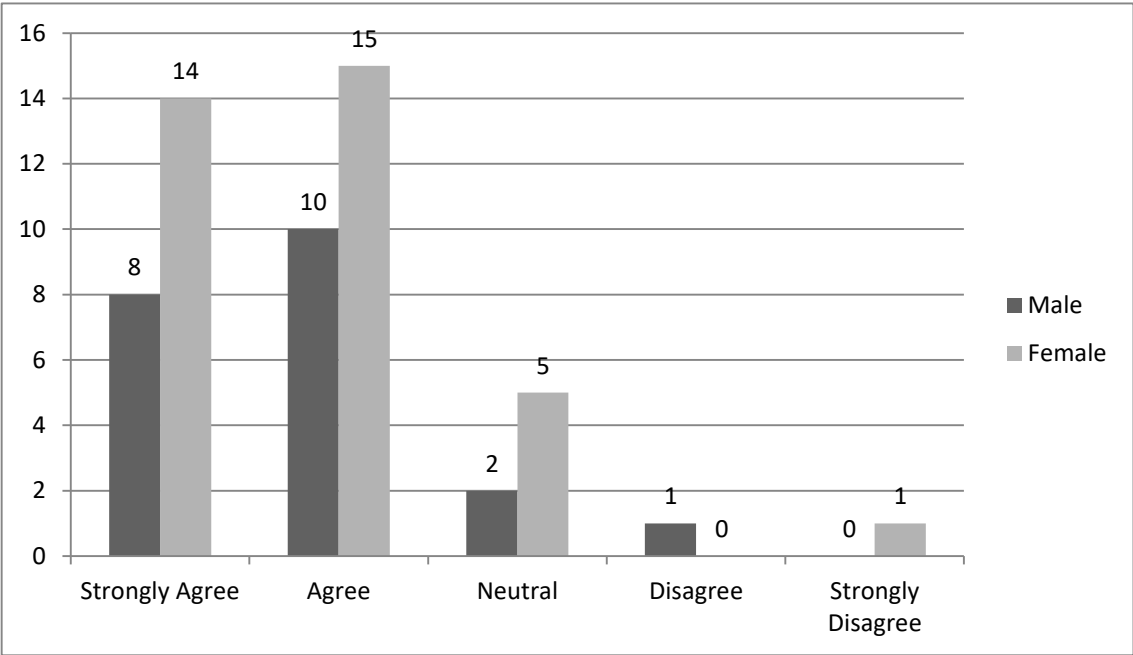


Figure 5: Role of Business Course in Professional Career

Furthermore, almost all the students agreed that the training from this course will help them in their professional career, as shown in figure 5.

In response to the question, that whether they have a sufficient number of business courses in their

curriculum or not, the students were mainly indecisive, as shown in figure 6.

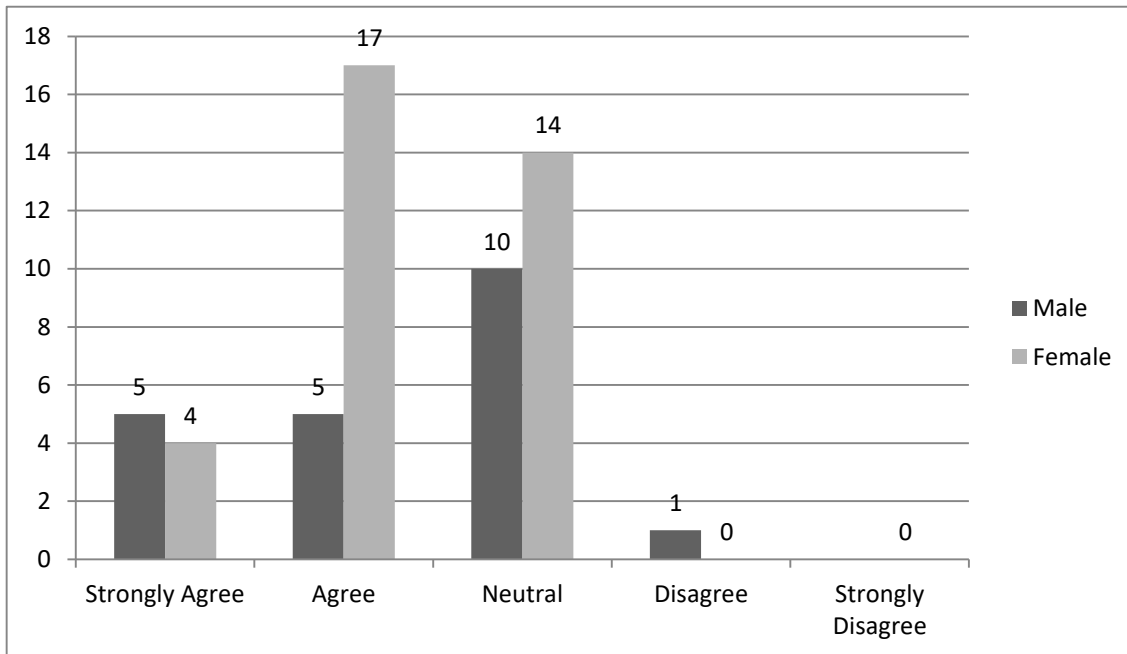


Figure 6: Sufficiency of Business Courses in the Curriculum

3. Conclusion. Information systems environment courses are vital for an Information Systems degree course but computing departments offering Information System programs may ignore them, but it is vital for students to understand the business processes in business environments to improve the organizational processes. Academic institutions should adhere to the guidelines in this context from ACM/AIS and other accreditation organizations such as ABET. The survey result from students also suggest that technology students are unable to understand the importance of IS environment courses, so there is a need that academic institutions should motivate these students by highlighting their role for IS discipline, that will help in improving their performance in such modules.

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