

Analysis of Information Technology in Business Education

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Abstract

State of Information Technology curriculum in the business institutions of Pakistan is distressing and indicates some gap between educational and industrial environments. The cause of such a gap is the shift of business organizations towards the e-business whereas e-learning has not yet been adopted by large number of business institutions. Information Technology in business education plays a major role in preparing a competent, business-literate, and skilled work-force.

This paper addresses the gap between what is taught and what we practice in industry. This paper presents the evaluation of the curriculum of the business education in business institutions of Pakistan and tries to find the answer of whether or not the universities / institutions of the country are training the business graduates according to the needs of local and international market and industry? Answer of whether or not the business graduates are capable of delivering the required information technology skills in their working business enterprises has also been addressed in this paper by evaluating the performance of business graduates working in industry. This paper also recommends the steps one can take to reduce the gap between theory and practice and respond to the emerging trends of business technology and expectation of the clients of the world of business from the business graduates of our institutions.

Keywords: *Information Technology curriculum, e-business, business institutions, business technology*

1. Introduction

Information Technology is a fast-changing field. Although it is important that students are comfortable and competent using today's latest software tools, in the long run, it is more important that they have the ability to learn and discriminatingly use new technologies as they become available. Identifying the appropriate role of IT in the industry's core curriculum requires a dynamic, long-term plan with feedback and an ongoing evaluation process. There is a need for knowledge of new technology tools for both students and faculty of business institutions.

Many business schools, in response to pressures from key stakeholders like future employers, are recognizing the need to change the business curricula to better prepare their students with a new bundle of skills including technical skills.

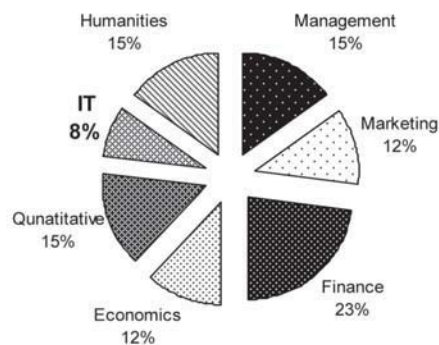
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Business curriculum is a broad combination of various subject areas that provides students with meaningful instruction for and about business. Instruction in Business Education encompasses business skills and techniques, an understanding of basic economics, and business attitudes essential to participate in the multinational marketplace as productive workers and consumers. Courses from following subject areas have been incorporated in the business curriculum.

- English / Communication Skills
- Business Core Courses
- Social Sciences
- Support Courses
- Information Technology
- Business Electives

If we take momentary glance at the business curriculum of Pakistani business institutions, the core subject areas have following numbers of courses from the representative subject areas.

Figure 1: Percentage of Information Technology courses in Business Curriculum



Source: Curriculum of Business Administration Developed By Higher Education Commission in 2005

Only 8% participation of Information Technology courses in Pakistani business institutions is alarming and creating a gap between educational and industrial environments, as business organizations are shifting towards e-business (electronic business). The gap between what we teach and what we do is widening. But there are steps we can take to narrow the gap and respond to where business technology is going and what the world expects from our technology graduates without compromising the essence of computer and information science education. The relevance is a desirable goal and that steps should be taken to shrink the widening gap between theory and practice. First, we need to better understand the breadth of the relevance problem. Next we need to better understand the bridges from "theory" to "practice." Some are suggested

here. The underlying issues are philosophical: what are the roles and responsibilities of early 21st century technology educators?

So Information Technology curriculum in business administration education needs to be up-to-date according to the needs of industry and international standards. Business schools should assess Information Technology curriculum issues in business administration education and also identify a number of IT (information technology) skills that students and faculty would like to learn for their own professional development.

2. Literature Review

The major purpose of the study was to examine the curriculum of Information Technology in business administration education. The researcher made an extensive study for the literature on the problem under study. Literature was excellent on the topic but there was a lack of research studies on the topic in Pakistan.

Namani, (2009), state that information technology had a huge impact in all parts of life and the international economy is presently undergoing primary renovation. Information technology has factual impact in most of industries and in all aspects of economy, while businesses and enterprises continue to undergo considerable changes. Usage of these technologies is transforming the rules of business, resulting in structural change of enterprises. Modern businesses are not possible without help of information technology, which is having a major impact on the operations of Small and Medium Sized Enterprises (SME) and it is maintained to be important for the survival and growth of economies in general (Namani, Mihane Berisha 2009).

Kaplan (2007), in an ongoing effort to adapt to technological change, almost all business schools have integrated personal computers into their programs. Many schools will require you to have your own laptop. The extent to which you will be expected to use a computer will vary from program to program, but you should make an effort to have at least a minimum comfort level with word processing, spreadsheets, and databases before starting school. You may want to check with the schools you are interested in to find out the hardware and software specifications (Kaplan and Robert 2007). Hoffman, Blake, McKeon, Leone, and Schorr (2005) point out that applications such as word processing, e-mail, and the Internet are natural to most students and, hence, require less emphasis. When beginning to formulate a long-term goal of change to the business curriculum, a more narrowed computer literacy focus was obtained by examining the previously referenced employer survey asking which of the office skills were most needed by them. It was found that the largest gap between computer skill expectations and confidence and practice of our business graduates was in the use of spreadsheets to solve business problems. As your own institution evaluates your business students and the needs of your local employers, you may choose to focus on a different computer competency than spreadsheets (Hoffman et al. 2005)

Noll and Wilkins (2002) maintain that the need for information systems (IS) workers is growing, but the identification of the specific skills required for the variety of IS positions

is not as clear. Information technology (IT) managers are challenged to find competent workers for their open positions. Computer security, data growth, data management, and the expansion of network technology also pose increasingly sophisticated challenges for IT managers. These challenges are enhanced by the constant change in information systems (Noll and Wilkins, 2002).

According to Byrd and Turner (2001) within IS the major debate about technical versus managerial and business skills started during the late 1960s and early 1970s. During this mainframe era, the IT organization was a reactive, cost-control enabler, not an initiator of strategic efforts. As personal computers and local area networks were introduced during the 1980s, the IT organization had to adapt to a more business-responsive environment, characterized by shorter software development cycle times and the need to satisfy user clients (Byrd and Turner, 2001).

According to Hamilton, D., McFarland, D. and Mirchandani, D. (2000) many business schools, in response to pressures from key stakeholders like future employers, are recognizing a need to change the business curricula to better prepare their students with a new bundle of skills including technical skills. A study conducted by Hamilton, found that there were more than 20 different approaches being used by business schools to achieve cross-functional integration of specific competencies in the curriculum. These approaches could be grouped into two major categories: experiential learning and classroom learning (Hamilton et al, 2000).

Lee et al. (1995) found out that among the highest rated skills of IS professionals in the future are: ability to learn about business functions, ability to interpret business problems and develop appropriate technical solutions, ability to understand the business environment, and knowledge of business functions (these four skills were among the seven most needed skills).

Ross and Ruhleder (1993) suggest the IS curricula should concentrate on developing technical and business skills, working in a collaborative setting, instilling a sensitivity to social and organizational impacts and to inculcate the ability to self-learn in a rapidly changing technological environment.

Trauth and Farwell (1993) identified a gap between IS/IT industry expectations and academic preparation. Continuous curriculum redesign and course updates are necessary to provide students with the essential skills needed upon graduation. Therefore, educational institutions must be willing to review their own curricula and investigate how to update their curricula to produce technically competent students with the skills necessary to succeed in the business world (Trauth and Farwell 1993). According to Hartman (1983) it is important that business students' computer skills improve as they move through their college education and that the skills they learn are what employers need them to have. The issue of who is responsible for ensuring literacy is decades old and even more important today.

3. Research Methodology

Multi dimensional sampling design is used for the primary study. The reason for using multidimensional research design is that author has to analyze information technology curriculum in business education, which involves deep study of curriculum of information technology in business education, on the one hand, and on the other, it was also necessary to analyze the requirements of the industry from business graduates related to their information technology skills.

There are multiple phases or dimensions of my Sample design:

- Phase I (Sample from Universities/Institutions)
- Phase II (Sample from Industry / Market)

Phase I (Sample from Universities/Institutions)

The data related to the information technology curriculum in the business education were gathered from the Higher Education Commission (HEC) recognized universities and institutions of higher education. As phase I of the research deals with the curriculum analysis of all the Pakistani business institutes/universities, so all the recognized universities/institutions of higher education will be the target population for my research. The sampling frame usually is a list of population members used to obtain a sample. That's why the list of HEC recognized universities/institutions will be the sampling frame for the 1st phase of the research.

The selected sampling procedure is Stratified Random Sampling. Each unit in the population is identified and each unit has a known, non-zero chance of being in the sample. I have collected the sample from all over Pakistan and for this I have divided the sample collection into groups or strata, so that the participation of universities from all over the country could be ensured. The author has selected 10 universities through stratified random sampling by dividing the population of Pakistani universities and institution in six stratum including Punjab, Sindh, Balochistan, NWFP, Federal Capital Islamabad and Azad Jammu and Kashmir (AJK).

Phase II (Sample from Industry / Market)

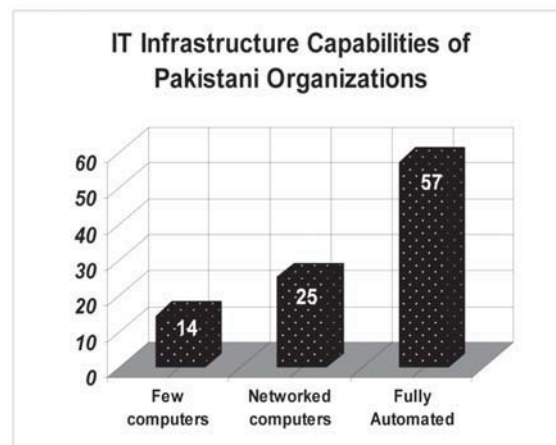
It is very necessary to know the standards and requirements of the real business environment in which the graduates of our universities and institutions will go for their jobs. As phase II of my research deals with the application of Information technology in the organizations of Pakistan so all the public enterprises will be the target population for this phase of my research. The selected sampling procedure for this phase is quota sampling.

4. Analysis

4.1 IT Infrastructure Capabilities of Pakistani Organizations

The first question of primary survey is about the categorization of the organization's information technology infrastructure capabilities by dividing the capabilities into four categories including no computers, few standalone computers used for word processing, few networked computers used only for email and maybe MIS, and fully networked environment with applications on central server. Almost all the Pakistani organizations have computers for recording of data but their penetration into the organization's information system varies. 14% Pakistani business enterprises have few standalone computers used for word processing, 25% organizations have few networked computers used only for email and maybe MIS and 57% organizations have fully networked environment with applications on central server. To summarize, we can say that Pakistani business organizations have a sophisticated information technology infrastructure.

Figure 2: IT Infrastructure Capabilities of Pakistani Organizations



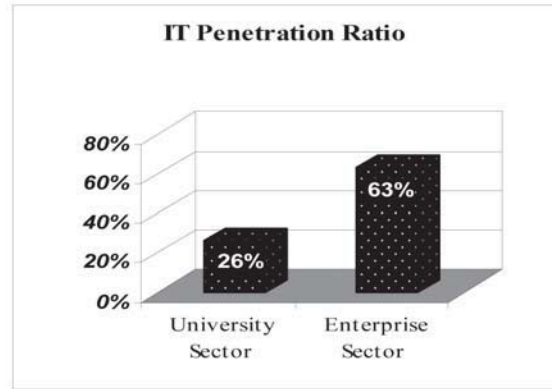
Source: Computed

4.2 Information Technology Penetration Ratio

Let's compare the Information Technology penetration ratio of university and enterprise sectors in Pakistan. Information Technology penetration of university sector is 26%, while information technology penetration ratio of enterprise sector is around 63%. This trend shows that enterprise sector of Pakistan is much more technologically equipped as compare to university sector of Pakistan. Our business students have less opportunity for accessing the information technology products and services at their teaching institutions and when they go to various business organizations for jobs they find more technological advanced environment. The difference between the Information Technology penetration ratio could be translated into the 37% ($63 - 26 = 37$) gap between the

information technology penetration in the university sector and enterprise sector in Pakistan.

Figure 3: Information Technology Penetration Ratios in Pakistan

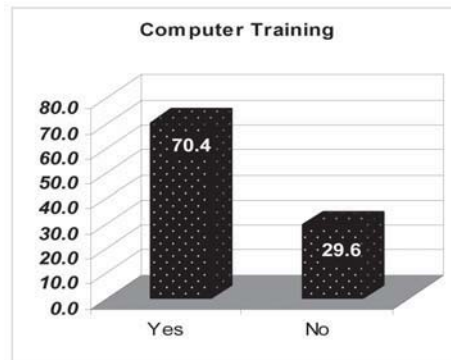


Source: Computed

4.3 Percentage of Employees getting Computer Training

Less information technology ratio of university sector demand the employers to train their employees for the information systems and databases running in their organizations, as universities and institutions does not fulfill the information technology capabilities as per their job requirements. In an enterprise sector survey 70.4% employees stated that their employers had trained them for working on the information system of the organization. While 29.6% employees stated that they did not have any sort of training. Basically, the trend of training in our business graduated working in the enterprise sector shows thin information technology application in business administration curriculum.

Figure 4: Percentage of Employees getting Computer related trainings in Pakistan



Source: Computed

5. Findings

Pakistani business institutions are offering very initial level information technology courses, while the industry practices involves high tech electronic business functions.

Electronic-business is the use of the Internet and other networks and information technologies to support electronic commerce, enterprise communications and collaboration, and Web-enabled business processes both within a networked enterprise, and with its customers and business partners. Changes in the business landscape are affecting employee skill requirements, as well as the tools and techniques used in education, since, business is changing into e-Business.

Business firms are turning to Internet technologies to integrate the flow of information among their internal business functions and their customers and suppliers. Companies are using the World Wide Web and their intranets and extranets as the technology platform for their cross-functional and inter organizational information systems.

6. Conclusion

Participation of Information Technology courses in Pakistani business institutions is alarming and creating a gap between educational and industrial environments, as business organizations are shifting towards the e-business.

Business curriculum is a broad, combination of various subject areas that provides students with meaningful instruction for and about business. Instruction in Business Education encompasses business skills and techniques, an understanding of basic economics, and business attitudes essential to participate in the multinational marketplace as productive workers and consumers. Due to the technological advancements in the twenty first century, information technologies has become the tool for doing business and business curriculum must be able to address this tool in detail, to better prepare the managers of tomorrow.

So information technology curriculum in business administration education needs to be up-to-date according to the needs of industry and international standards. Business schools should assess information technology curriculum issues in business administration education and also identify a number of information technology skills that students and faculty would like to learn for their own professional development.

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