

Blending of Strategic Management with ICT Curriculum and its Impact on the Performance of University Graduates

***Mohammed R A Siam^a, Wael Sha. Basri^b**, ^aschool of Business Management Sbm University Utara Malaysia Uum, ^bNorthern Border University Arar - Kingdom Of Saudi Arabia,

***Corresponding Author Email:** [*r.a.siam@uum.edu.my](mailto:r.a.siam@uum.edu.my),
wael.bassri@nbu.edu.my

In the education sector, the application of Information and Communication Technology (ICT) has become an integral part of the learning process of university students. The governments and other industrial and corporate stakeholders globally have invested millions of dollars to integrate ICT in the education system during the last two decades. Universities that have fully adopted ICT curricula have recorded immense advancement in the application of ICT in improving learning methods, teaching, research and development. Recently the ICT curriculum has evolved and has blended Strategic Management as one of its components. With the growing automation and computerization, it is imperative that all business functions are aligned. This alignment necessitates the study of a module on strategic management by graduates pursuing the ICT curriculum. Moreover, a study of the strategic management component would help the graduates to understand the role of ICT in the strategic processes of business projects in a new economy. This study attempts to rationalize the blending of strategic management with ICT curriculum. The study adopted a qualitative research framework; data was collected through a questionnaire and in-depth interviews, where a sample size of 80 respondents for questionnaire and 8 informants for in depth interview was used. The respondents and informants mainly comprised of university graduates and Faculty members. Findings revealed why and how universities' management, government and other relevant stakeholders are embracing ICT and how the blending of strategic management in the ICT curriculum has enhanced the Performance of University graduates.

Key words: *blending, ICT, curriculum, performance, strategic component.*

Introduction

Information and communication technology (ICT) has become an important source of innovation and improvement of efficiency for many sectors across the globe. In the education sector, the application of ICT has become a critical part of the learning process for university students in the classroom setting and outside the classroom. The government and other stakeholders in the education sector such as university management and researchers have been investing millions of dollars to adopt ICT in the education system in the last two decades (Lawrence, 2015). Most universities that have fully adopted ICT have recorded immense advancement in the application of ICT in improving learning methods, teaching, research and development. With the changing times and introduction of strategic emulations of innovative business practices and automation in the business sector in almost all verticals, it is imperative for university graduates to study the strategic management component along with the study of ICT and its application.

Several universities now have blended this component in the ICT curriculum. This has resulted in a greater enhancement of the performance and achievement of university graduates. However, it is not clear how ICT applications blended with strategic management impacted the performance and achievement of university graduates. In this regard, this study investigated the adoption of ICT in Universities with a blended curriculum and its impact on the university graduates' academic performance. This study has evaluated the extent to which universities have accepted the blended approach and what measures have been adopted for its success.

Literature Review

Numerous research studies have been undertaken to investigate the relationship between ICT and student performance, although these studies have not been able to establish precisely the impact of ICT on the performance of the student. This research faced several core challenges such as the difficulty in determining the performance of students, measuring their performance in terms of grades, assessing the role of curriculum in their success and so on. The common approach used by many researchers about the curriculum and measuring the achievement is in terms of grades achieved (Fu, 2013). Ali et al. (2016) and Rose et al. (2015) have criticized the findings of such studies, blaming them for being too narrow. An alternative approach that considers the influence of ICT on students' attitude, competency and skills in addition of curriculum is preferred. This approach has been campaigned as an extensive approach that would yield more accurate results compared to the current narrow

approach. The extensive approach demands a more comprehensive and complex strategy to focus on and observe the labor market.

Moreover, it is also important to prepare a review of such prior studies that investigates the change that was brought about by the blending of strategic management with the ICT curriculum and its impacts on the performance of university students. Though there were various studies conducted to investigate the relationship between ICT and strategic management, only a few studies have focused on the blended approach adopted in a curriculum. For instance, as a result, all the relevant parties involved in higher education have put tremendous effort in to ensure adoption of ICT in their university education systems. According to a report published by the United Nations Educational, Scientific and Cultural Organization (UNESCO) institute of statistics (2013), governments and university managements globally have invested heavily in adopting technology in their education systems. Overall, numerous attempts both theoretical and empirical have been made in a bid to evaluate the impact of ICT adoption in the education system (Castillo-Merino & Serradell-López, 2014; Farivar, 2017).

The recent methodologies of investigating the adoption of ICT in higher education have only focused on some aspects related to performance in education. Indicators have been used to establish how various inputs such as infrastructure and availability of resources relates to impact. Nevertheless, successful studies must take into account the institutional culture and implementation process at the initial level as well as the advanced level (Castillo-Merino & Serradell-López, 2014). Studies in the area of Information Technology are located in the space between Business Administration and Technology Management, with emphasis on creating a vision that unites businesses and technology. On one hand, this allows us to understand when Strategic Management becomes aligned with the new ICTs and, on the other hand, apply Strategic Management to the functions of ICT. In the first case, one can better understand the new forms of corporate management held in the new ICTs.

Ellis and Loveless (2013) study indicates that higher education's pedagogical approach cannot be isolated from academic achievement and equally from the teaching process and innovation. The study affirms that the potential role of information and communication technology in higher education cannot be overlooked. Chan Bernal and Camacho's (2013) study made a similar observation where the researchers noted that the critical function of ICT is in democratizing university education and meeting new and dynamic demands of graduate students. In a similar study, Sari and Mahmutoglu (2013) found that the change in teaching methodology for universities required a paradigm that would adopt student-centered approaches. The methodologies should aim at making the student an active element in the learning process, rather than passive and receive adequate and effective guidance from the tutorial team. Iniesta-Bonillo et al.'s (2013) research found that the use of information and



communication technology is significant in placing students in an active position and in enhancing the effectiveness and efficiency of tutorial support.

The advanced level, being national and international, has recorded remarkable progress evidenced by establishment of policies and regulations that support the integration of ICT in the education system (Attuquayefio & Addo, (2014). The university administrators and lecturers are looking for the most appropriate approaches to harness application of ICT in improving their teaching method and improving the students' performance. Nonetheless, the achievement of these efforts should be demonstrated by the results fuelled by the ICT impacts but are not easily identifiable. Numerous and significant initiatives that evaluate and track the efficiency of applying ICT and its impacts on education exist. For instance, the second information technology in educational study (SITES), a study supported by the International Association for the Evaluation of Education Achievement (IEA) assists in evaluating and describing how ICT is applied across 26 countries globally (Voogt et al., 2013).

The studies seek to ascertain how school administrations, teachers and ICT team use computers through a sample method. Although the study does not focus on the impact of ICT on the achievement of students, the study approaches the topic from the perception of teachers on the impact of ICT on students' performance (Croteau et al., 2015; Feleke, 2018). Similarly, Cruz-Jesus et al. (2016) analyzed several studies relating the impact that ICT has on educational institutions in Europe. The study findings indicated that there is limited and incomparable evidence. The studies considered were not able to provide substantive findings that indicated that ICT had positive impacts. Further, each study used a unique methodology and approach making the comparison of the results between the studied countries more complicated.

There are other several research conducted to assess the impacts of ICT in the education. (Abdullahi, 2013; Kreijnset al., 2013; Sabi et al., 2016; Sánchez, Cortijo, & Javed, 2014). Solar, Sabattin, and Parada (2013) argued that adoption of ICT enhances the quality of learning and improves the quality of education results. In support of the same idea, Gallego, Gutiérrez, and Lee (2014) argued that a country's success in improving the quality of education must be preceded by implementation of ICT policies and regulations that are effective and vigorous. Babaheidari and Svensson (2014) in a different study however concluded that the impact of ICT on learning outcome is not clear. Lin, Huang, and Chen (2014) pointed out that there are no solid effects demonstrated from the application of ICT in education. The mixed results from previous studies confirms the absence of well-developed and reliable theoretical studies and inadequate empirical evidence that support the benefits that results from ICT implementation. While Wastiau et al. (2013) indicated that application of ICT in education achievement has positive effects, Venkatesh, Croteau, and Rabah (2014)

found out that there were no actual effects of ICT in education when the research considered the socioeconomic background of students and characteristics of the school.

A few scholars have investigated the topic at a national level used a qualitative approach to determine the efficiency and effectiveness on the student's performance accruing from ICT. Manchuria and Pelser (2014) investigated the education efficiency in Africa, while Wastiau et al. (2013) conducted similar research in Europe. The available literature presents a mixed result regarding the relationship between the use of ICT and the performance of university students. Previous studies on this topic have indicated a gap that this research seeks to fill.

Need for strategic management in ICT

There have been several innovations in modern business enterprises that employ the internet and a satellite linked communication network. These enterprises comprise business organizations as well as educational institutions which employ ICT strategies to provide technological, commercial, financial and organizational support system. These strategies are implemented cross functionally in the organization and are followed through all its verticals requiring an alignment of ICT with the business goals and objectives. Hence a need is felt to blend ICT and business strategies together for the purpose of innovations as well as integration of the organizational activities. A few information companies that employ complex processes of work also show a paradigm shift leading to new forms and ways of working. A study of the strategic management component along with Information Technology focuses on developing the concepts and skills to educate people to provide answers and solutions to such virtual issues that would result in a competitive advantage for the company. Academics believe that varsity graduates pursuing ICT curriculum need adequate training in the strategic processes of business projects to face the challenges of the new economy.

Blending of ICT with Strategic Management

A blended approach in studying ICT curriculum combined with strategic management components provides opportunities to the graduates to think strategically and execute business planning in the deployment of ICT strategies. The main objective of studying such a blended curriculum is also to provide professionals with the business skills needed to succeed in an increasingly competitive world and to teach them how to use the vast quantity of information that is continuously generated from different work processes in the most efficient ways possible, in order to enhance the company's ICT strategies and make them beneficial for the company.

Research aim and objectives

In order to contribute to the strategic policies and plans of an organization, the university graduates must adopt a strategic management course embedded in the ICT program. Prior studies lack this aspect and hence the identified research gap that this study addresses. Based on the identified research gap and problem statement, this paper therefore attempts to investigate the following research objectives:

- a) To investigate ways and means in which universities have adopted ICT in their administration, curriculum and teaching functions;
- b) To determine the relationship between ICT adoption and the performance of university graduates;
- c) To identify the need and significance of blending strategic management component in the ICT curriculum;
- d) To assess the impact made by the blending of the strategic management component in universities on the performance of university graduates.

Significance of the study

The findings of this research will contribute to the domain of ICT adoption in universities and help readers understand how university management, government and other relevant stakeholders are embracing ICT. The research would also shed light on the relationship between the use of ICT and education output in the form of performance of the graduates. In addition, the research also showed how the blending of the strategic management component with the ICT curriculum made an impact on the educational performance of the university graduates.

The results obtained from the proposed study would benefit the government agencies and the university academic department, particularly in the field of curriculum development and framing policies for higher education. The research would also facilitate decision making for students wishing to enrol for a course and help them decide upon a course that best suits their requirements. Lastly, the research would also act as a jump start for other researchers who may want to conduct further research on this topic in the future.

Research design

This study has used a qualitative dominant mixed method approach to understand the impact of the blending of strategic management with ICT curriculum on university graduates. The mixed method is useful in collecting detailed data that can be relied upon. Creswell (2013) defines the mixed method approach as a type of research wherein the researcher combines two components: quantitative and qualitative in order to verify a judgment. Teddlie and

Tashakkori (2008) find that a researcher often uses the mixed method approach when he has to begin with the quantitative approach at one level of the study and move to the qualitative approach in another as a sequence. Thus both quantitative and qualitative methods of research “complement” each other in order to execute a complete study of the given variables and hypotheses (Tesch, 1990; Teddlie and Tashakkori, 2008). In addition, the method reduces the cost of collecting and analyzing the data with a significant margin. Further, the researcher is also able to interact directly with the respondents enabling them to evaluate the credibility of the information collected from them. The method, however, has its shortcomings which include consuming a lot of time in collecting the necessary data and carrying out the analysis (Venkatesh, Brown, & Bala, 2013).

Data collection instruments such as questionnaire and in depth interviewing method were used to collect data and determine the extent to which this impact had affected the performance of the university graduates. There was the same questionnaire for both the groups of respondents in order to get a fair understanding of the difference in the impact made by the blending of strategic management with the ICT curriculum. Using qualitative method the research also studied secondary data such as company documentation, university syllabi and empirical studies. The quantitative method enabled the collection of quantifiable data through a questionnaire which collated student aggregates and average score in their academic tests for two categories of students, one category who studied only the ICT curriculum and the other category who was taught with the blended approach.

Sampling

A purposive sampling technique was adopted for this study to ensure that the study engaged only those participants who were willing to provide the required data. This study engaged respondents from four universities, two universities that had fully adopted ICT curriculum to prepare graduates for business operations where ICT was a requirement; the other two universities had blended the strategic component with the ICT curriculum. The study encompassed a sample size of 80 respondents (participants), 20 students from each university, for the quantitative study and 8 informants, two faculty members from each university for the qualitative study. The participants were all university graduates who had recently completed their graduation and were using ICT applications and strategies in their work place.

Data Collection

a) Questionnaire

A questionnaire was used to collect the primary data. It was a survey questionnaire that was distributed to the selected respondents in their universities. The instrument contained both

open and closed questions. The credibility of the data was later triangulated with the information collected through the interview. The 5-point Likert scale 1 “strongly disagree” to 5 “strongly agree” was used to evaluate the research objectives framed for this study.

b) Interview

Since it was a qualitative dominant study, the researcher gave special attention to the data collection method, that is, the in depth interview with the faculty members of the universities that were chosen for this study. Where interview was not possible, the researcher used other avenues such as phone calls and Skype video calls. A personal interview was however emphasized to ascertain the credibility of the information as it was first hand and many of the informants had actually participated in the curriculum design and preparing the study plans for both the versions of the ICT curriculum, traditional and the blended.

c) Secondary sources

The secondary data for this study was collected from peer reviewed journals, company websites, textbooks, and articles from trusted and recognized authors. The researcher mostly used this data to compare the findings of this study with the findings of previously done studies. Care was taken in the selection of material and only relevant information from peer-reviewed journals with considerable knowledge was used. Website data and documentation of a few company websites were also used to determine the usefulness of the alignment of strategic element in ICT principles and strategies.

Data analysis

The data collected for the questionnaire was analyzed through Nvivo software and a coding trend was identified to determine categories and themes. The researcher evaluated the open-ended questions in order to establish the trends portrayed by the data collected from respondents. Transcripts of the interview data were prepared to ensure availability of primary data for analysis. After the completion of data analysis, a review of the entire data was made for identifiable errors, inconsistencies and incompleteness. During the editing process of data, all the information was also coded and tabulated in statistical figures and charts.

The researcher gave attention to the factors that facilitated ICT adoption in universities and also the strategic management in the ICT curriculum. These specific factors were responsible to promote ICT adoption as well as the acceptance of strategic management in the ICT curriculum that influenced the performance of the graduates. Subsequently, the researcher conducted an analysis of the frequencies, percentage and other metrics for participants in each pair of universities. The analysis reveals the frequency of specific responses by

participants helping the researcher to understand the distribution of learners' performance across each sample. The analysis also enabled the researcher to trace the performance outcome of student from each university that had adopted only the ICT and the one that had blended the strategic management component in the curriculum.

The researcher then quantified the response obtained from the close-ended questions on the basis of cumulative statistics. Consequently, scores for the test were further tested using fundamental descriptive statistics. Hence, the researcher was able to determine the performance of students from both universities that had adopted only the traditional ICT curriculum and how this was different from the other two universities that had blended strategic management component in the ICT curriculum.

As a result, the researcher was able to measure the extent of university adoption of ICT as well as its blended version and their relative impact on the performance of the graduates. Further, t-tests were also conducted to collect data from students in both categories of universities and samples to compare the average examination scores for each student from each university category. The researcher performed the ANOVA to establish the significant variations in the dependent variables that influenced students' performance in each category of respondents (Haegeman et al., 2013).

Ethical considerations

In order to conduct this research, first, the researcher gained the requisite permission from the Deans of the universities and the government authorities who were a part of the framework. The participants sampling process was purposive implying that participation would be voluntary and any graduate who during the research wished to withdraw their participation could do so without prior explanation to the researcher. The researcher endeavoured to maintain a high level of confidentiality with regard to the information gathered from the respondents to ensure security of the respondents' information during and after the research. The researcher also signed an agreement to use the data collected only for research purposes. Personal identification details were not collected from the respondents.

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