CRITICAL SUCCESS FACTORS, INSTRUCTORS' CHARACTERISITCS AND ACCOUNTING INFORMATION SYSTEM COURSE CONTENT

NASEEM YUOSIF HANNA LALLO

DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
August 2012

CRITICAL SUCCESS FACTORS, INSTRUCTORS' CHARACTERISITCS AND ACCOUNTING INFORMATION SYSTEM COURSE CONTENT

By

NASEEM YUOSIF HANNA LALLO

Thesis Submitted to the
Othman Yeop Abdullah Graduate Schoolof Business,
Universiti Utara Malaysia,
in Fulfillment of the Requirement for the Degree ofDoctor of Philosophy

OTHMAN YEOP ABDULLAH GRADUATE SCHOOL OF BUSINESS
Universiti Utara Malaysia

PERAKUAN KERJA TESIS / DISERTASI
(Certification of thesis / dissertation)

Kami, yang bertandatangan, memperakukan bahawa
(We, the undersigned, certify that)

NASEEM YOUSIF HANNA

calon untuk Ijazah **DOCTOR OF PHILOSOPHY (ACCOUNTING)**
(candidate for the degree of)

telah mengemukakan tesis / disertasi yang bertajuk:
(has presented his/her thesis / dissertation of the following title):

CRITICAL SUCCESS FACTORS, INSTRUCTORS' CHARACTERISTICS AND ACCOUNTING INFORMATION SYSTEM COURSE CONTENT

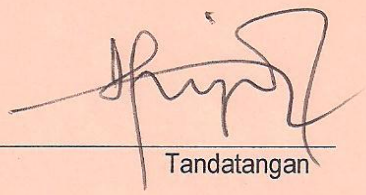
seperti yang tercatat di muka surat tajuk dan kulit tesis / disertasi.
(as it appears on the title page and front cover of the thesis / dissertation).

Bahawa tesis/disertasi tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan, sebagaimana yang ditunjukkan oleh calon dalam ujian lisan yang diadakan pada :
12 April 2012.
That the said thesis/dissertation is acceptable in form and content and displays a satisfactory knowledge of the field of study as demonstrated by the candidate through an oral examination held on:
12 April 2012.

Pengerusi Viva *(Chairman for Viva)*	:	**Prof. Dr. Mohd Zaini Abd Karim**	Tandatangan *(Signature)*	
Pemeriksa Luar *(External Examiner)*	:	**Prof. Dr. Nor'Azam Mastuki**	Tandatangan *(Signature)*	
Pemeriksa *Dalam (Internal Examiner)*	:	**Dr. Zaimah Zainol Ariffin**	Tandatangan *(Signature)*	

Tarikh: **12 April 2012**
(Date)

Nama Pelajar *(Name of Student)*	:	**Naseem Yousif Hanna**
Tajuk Tesis *(Title of the Thesis)*	:	**Critical Success Factors, Instructors' Characteristics and Accounting Information System Course Content**
Program Pengajian *(Programme of Study)*	:	**Doctor Of Philosophy (Accounting)**
Nama Penyelia/Penyelia-penyelia *(Name of Supervisor/Supervisors)*	:	**Dr. Mohamad Hisyam Selamat**



Tandatangan

PERMISSION TO USE

In presenting this thesis in fulfillment of the requirements for a Post Graduate degree from the Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for copying this thesis in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor or in his absence, by the Dean of Othman Yeop Abdullah Graduate School of Business where I did my thesis. It is understood that any copying or publication or use of this thesis or parts of it for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the UUM in any scholarly use which may be made of any material in my thesis.

Request for permission to copy or to make other use of materials in this thesis in whole or in part should be addressed to:

Dean of Othman Yeop Abdullah Graduate School of Business
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman

ABSTRACT

Although an Accounting Information System (AIS) course is important to equip accounting students with adequate knowledge and skills, little research has investigated factors that should be considered in developing such course content. This scenario is obvious in Iraq, particularly because the education system deteriorated severely due to the civil war of the last several decades. To look for critical success factors, this study identified employers' needs, professional bodies, learning environment, and International Federation of Accounting Committee (IFAC) recommendations as factors that might influence AIS course content. This study considered instructors' characteristics as a moderating variable that could enhance the relationship between IFAC recommendations and AIS course content. The objectives of the study were the following: (1) to identify the critical success factors influencing AIS course content at Iraqi Higher Education Institutions (HEI), and (2) to investigate the moderating effect of instructors' characteristics on the relationship between IFAC recommendation and AIS course content. To achieve these objectives, 260 questionnaires were sent to accounting lecturers at different Iraqi HEIs of these instruments, 165 were returned, yielding a response rate of about 63.5%, but only 134 were usable. Multiple regression analysis was used to test the relationships between (and among) AIS course content and employers' needs, professional bodies, learning environment, and IFAC recommendations. The findings showed that personal traits, professional bodies, participatory learning and teaching methods and general information and communication technologies (ICT) knowledge had no significant influence on AIS course content whereas other dimensions such as core knowledge and Information Technology (IT) competency had significant influence. Hierarchical multiple regression was applied to investigate the moderating influence. The results show that IT competency and general ICT knowledge were not significant whereas IT control knowledge and general IT knowledge were significant.

Keywords: Accounting Education, Accounting Information System, Course Content, Curriculum Development.

ABSTRAK

Walaupun kursus Sistem Maklumat Perakaunan (SMP) penting bagi melengkapkan pelajar perakaunan dengan pengetahuan dan kemahiran yang mencukupi, tetapi hanya terdapat beberapa penyelidikan yang menyiasat faktor yang perlu dipertimbangkan dalam membangunkan isi kandungan kursus tersebut. Senario sebegini begitu ketara di Iraq, di mana sistem pendidikan telah musnah akibat perang saudara yang berlaku dalam beberapa dekad yang lalu. Bagi mengkaji faktor-faktor kejayaan kritikal tersebut, kajian ini mengenalpasti keperluan majikan, badan profesional, persekitaran pembelajaran dan cadangan Jawatankuasa Persekutuan Perakuanan Antarabangsa (JPPA) sebagai faktor yang boleh mempengaruhi pembangunan kandungan kursus SMP. Kajian ini mengambilkira ciri-ciri tenaga pengajar sebagai pembolehubah penyederhana yang boleh meningkatkan perhubungan di antara cadangan-cadangan JPPA dan kandungan kursus SMP. Objektif kajian ini adalah seperti berikut: (1) untuk mengenalpasti faktor-faktor kejayaan kritikal yang mempengaruhi kandungan kursus SMP di Institusi Pengajian Tinggi (IPT) di Iraq; dan (2) untuk mengkaji kesan penyederhanaan ciri-ciri tenaga pengajar ke atas perhubungan di antara cadangan-cadangan JPPA dan kandungan kursus SMP. Bagi mencapai objektif ini, 260 borang soalselidik telah dihantar kepada pensyarah perakaunan di IPT yang berbeza di Iraq, 165 soalselidik telah dipulangkan, memberikan kadar respon sebanyak 63.46%, tetapi hanya 134 soalselidik yang boleh digunakan. Analisis regresi berganda telah digunakan untuk mengkaji perhubungan di antara (dan di kalangan) kandungan kursus SMP dan keperluan majikan, badan profesional, persekitaran pembelajaran dan cadangan-cadangan JPPA. Dapatan kajian menunjukkan bahawa sifat-sifat peribadi, badan profesional, pembelajaran penyertaan dan kaedah pengajaran dan pengetahuan am Teknologi Maklumat dan Komunikasi (TMK) tidak mempunyai pengaruh yang signifikan terhadap kandungan kursus SMP manakala dimensi yang lain seperti pengetahuan teras dan kemahiran Teknologi Maklumat (TM) mempunyai pengaruh yang signifikan. Regresi berganda hirarki telah digunakan bagi menyiasat pengaruh penyederhanaan. Dapatan kajian menunjukkan bahawa kemahiran TM dan pengetahuan am TMK adalah tidak signifikan, manakala pengetahuan kawalan TM dan pengetahuan am TM adalah signifikan.

Kata kunci: Pendidikan Perakaunan, Sistem Maklumat Perakaunan, Kandungan Kursus, Pembangunan Kurikulum.

ACKNOWLEDGEMENTS

I give glory to **GOD** for making it possible for me to undertake a course in PhD Accounting. In addition, I am indeed indebted to several individuals and organizations for their immense contributions to the successful completion of this programme. First and foremost, my sincere appreciate goes my supervisor,Dr. Mohamad Hisyam Selamatfor this guidance, encouragement and cooperation throughout my programme. I also express my gratitude to the entire members of staff of College of Business and management of Universiti Utara Malaysia (UUM) for this opportunity. I am grateful to all the lecturers who made contributions and comments on my proposal especially Prof. Dr. Noor Azizi Ismail and Dr.Zaimah Zainol Ariffin.

I thank the management and staff Othman Yeop Abdullah Graduate School of Business in Universiti Utara Malaysia for their support during the fieldwork of this study. I also thank the management of and staff of the college of Administration and economic in Salahadin University in Erbil. I am indeed grateful to my fiancée Miss Linda Behnam Yousif for her supporting and encouraging me during three years. In addition, my thanks to my friends especially Mr. Ammar, Mr. Jarjees, Abuobaydah, Mustaffa, Daleer, Ibraheem, Zaid, Ayman and all other friends who help me. Finally, I appreciate my family my father, my mother, my brothers and sisters for what they provided to me.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

AAA	The American Accounting Association
AACSB	American Association College School of Business
AECC	Accounting Education Change Commission
AICPA	The American Institute of Certified Public Accountants
AIS	Accounting Information System
ANCTM	American National Council of Teachers of Mathematics
COFE	Committee of Financial Experts
CPA	Certified Public Accounting
FASB	Financial Accounting Standards Board
HEIs	Higher Education Institutions
IAAA	Iraqi Accountants and Auditors Association
IAMB	International Advisory and Monitoring Board
IFAC	International Federation of Accounting Committee
IPTVE	International Project on Technical and Vocational Education
IS	Information System
IT	Information Technology
MHESR	Ministry of Higher Education and Scientific Research
MSEB	Mathematical Sciences Education Board
SPSS	Statistical Package for Social Science
TTF	Task-Technology Fit Theory
UN	United Nation
UNESCO	United Nation Educational, Scientific, and Cultural Organization
UNEVCO	United Nations Educational Scientific and Cultural Organization international Project on Technical and Vocational Education

CHAPTER ONE

INTRODUCTION

1.1Research Background

The main goal of any University is to ensure that competent graduates are produced. In order to fulfill this goal, the courses used to impart knowledge to the students must be effective, current and relevant. Therefore, the transformation process from input through output to change fresh students into experts in their own areas, must be effective. Educational institutions must always endeavor to review and upgrade curriculum so that courses offered are relevant and current. Accounting Information System (AIS) courses are not the exception. In this respect, a global reform in teaching and learning curriculum being undertaken in all areas to face and cope with the daunting 21st century global challenges and technological developments. (Garfield, Dresden, & Boyle, 2003).

In defining AIS, there is a need to define what is meant by a system itself. A system can be defined as a set of two or more interrelated components that interact to achieve a specific goal (Hall, 2008; Hall, 2004). In line with this, AIS can be defined as a set of two or more interrelated components that interact with each other to generate and exploit accounting information in an effective and efficient manner (Gelinas & Dull, 2009; Dull, & Gelinas, 2008; Romney & Steinbart, 2003). Romney and Steinbart (2009) identified people, processes, organization and IT as such inter-related components. The advent of IT enables AIS to generate timely, relevant, reliable, accurate and speedy accounting

information (Pathak, 2004). Considine, Parkes, Olesen, Speer, and Lee (2010) defined AIS as application of technology to the capturing, verifying, storing, and reporting of the data relating to an organization's activities. This definition shows a new element which is technology. They argued that technology has become a key factor in completing the accounting activities.

In this respect, there is a need to study Iraqi accounting curriculum in the HEIs and to determine the factors that can produce qualified accountants (Al-Jalily & Taha, 2010, Taha, 2007). This is to ensure that Iraq can compete with other developed and developing countries by producing accounting graduates with required AIS skills and knowledge.

In the Iraqi context, the long war period has led to the poor state of IT awareness and development of accounting curriculum (Al-Sakaa, Al-Hamadany, & Al-Taay, 2007). The review and updating of AIS course content in Iraq lag behind compared to other countries, even amongst developing countries, as a consequence of the war.

Considering course content issues from a global perspective, for every professional course like AIS, there is a need for the graduates to be equipped with applied skills and knowledge as required by the employers for better opportunity in the job market (Lee & Fang, 2008). To achieve this, it is important to develop good course content. The educational course content is an important issue in the educational area and many researchers have identified the development in education as one of the many steps that help to develop a country (Grossman, Onkol, & Sands, 2007). Developing a good course

is one thing, but creating a good delivery channel for its successful implementation is another important aspect that needs to be considered in depth. It has been revealed that some well-intended educational reforms fail in its implementation due to the inability of the learners to go along with the changes due to the way they had been trained (S-ims-ek & Yildirim, 2001; Dundar & Lewisb, 1999). In turn, to assist the Iraqi government to produce well-rounded accountants, a framework that is able to transform well-intended educational reforms into practice is crucially needed. This is what the current research intends to contribute to.

An international conference on higher education in Iraq was organized in Erbil by the Iraqi Higher Education Organizing Committee to describe and define major issues in Iraqi higher education, where curriculum was one of these issues (Iraq Higher Educational Organizing Committee, 2007). It was concluded that the Iraqi Universities and institutes were significantly neglected from the world educational plan in terms of educational curricula, resources, teaching methods and modern technology for two decades. This scenario demands a detailed review of the curriculum in order to meet global educational challenges including the AIS course (Iraq Higher Educational Organizing Committee, 2007). It is argued that this research's conceptual framework can indicate to the Iraqi government the elements that need to be integrated in order to enhance the quality of AIS course content in the HEIs in Iraq. The question now is what needs to be done?

From the aforementioned discussion, it can be seen that the problem in course content development is a global issue due to the new innovations brought about by technological

development in virtually all disciplines. The only thing that differentiates Iraqi's case is the post-wars and economic sanctions era. Thus, it is very evident that there is a critical need for understanding AIS course content in Iraqi HEIs. This, in turn, creates a need for determining the elements that can be considered to improve AIS course content in Iraqi HEIs. This research intends to contribute to the literature by proposing a conceptual framework that consists of elements that are relevant for enhancing the quality of AIS course content in Iraqi HEIs.

Narrowing down to the Iraqi HEIs, in 2009, a governmental document issued by the Iraqi Ministry of Higher Education and Scientific Research (MHESR)[1] showed that all courses in college of Administration and Economics, in which AIS is one of these courses, are under review, with regards to enhancing the curriculum in the HEIs (MHESR, 2009). This shows that the present study is currently needed in Iraqi HEIs to give a guideline on how to achieve a good AIS course content in Iraqi HEIs, by following previous conceptual models. Another governmental document issued by the MHESR allowed the lecturers in the HEIs to make a limited change in the current course content (MHESR, 2010)[2]. Al-Jaboree (2012),Al-Janabi and Urban, (2011)Al-Jalily and Taha (2010), Harb (2008), Al-Sakaa et al. (2007) and Mohammad (2007) highlighted that most of the courses in Iraqi HEIs have not been updated since 1970, and the current course contents lack the university courses properties, like self-education and cooperative education. This is supported by a report conducted by the United Nations Educational, Scientific, and Cultural Organization (UNESCO); this report mentioned that the current courses in most

[1] Please refer to Appendix E-3
[2] Appendix E-4

HEIs and disciplines are outdated, if not obsolete, and require reform (UNESCO, 2005). Although it is clear that there is a problem of outdated course content problem in the Iraqi HEIs, the attempts to find out the factors that should be considered in any course content is still unknown.

Several factors have been studied in relation to AIS course content. The importance of employers' needs in developing any course has been revealed by a number of authors (Dillon & Kruck, 2008; Lee & Fang, 2008; Lee et al., 2002). The authors argued that employers' expectations should be taken as a key component in achieving a good course content. Al-Sakaa et al. (2007) mentioned that AIS course content in Iraqi HEIs is outdated and therefore needs a change so that it can offer the prospective accounting graduates the required skills and knowledge to achieve the employers' requirement.

It has been argued by many scholars in the accounting field that the influence of professional bodies cannot be neglected in the process of developing any accounting related course (Saville, 2007; Carr & Mathews, 2004; Johns, 2002). In developed countries, professional bodies have effective role in developing accounting education (Johns, 2002).

Norris (2004) defined the learning environment as a context in which knowledge gained from one course will be practiced by the learners. The author highlighted that the learning environment is an important factor in any course content and this is supported by Jarnagin (2006), Taylor (2004) and Theuri and Gunn (1998). Details of the justification for the inclusion of the variables are discussed in chapter two.

The implementation of IT-based AIS in the organizations influences the accounting curriculums (O'Donovan, 1996). In this case, accounting curriculum does not only aim to instill accounting theoretical knowledge and skills but also the expertise to understand and operationalize IT-based AIS (Womble, 1994). This development is evident from the new standards imposed by several professional bodies, such as the International Federation of Accountants Committee (IFAC) (Chayeb & Best, 2005). In addition, several researchers (i.e. Dillon & Kruck, 2008; Core, 2006; Mounce, Maudin, & Braun, 2004; Thueri & Gunn, 1998; Lee, Trauth & Forwell, 1995) have identified the need to make AIS course content more IT driven, which led them to suggest further researches in various countries on AIS course content review and improvement. This creates the interest of this study.

Ismail and Salim (2005) declared that integrating IT knowledge in educational process requires the readiness and willingness of the instructors who are going to facilitate the transfer of such knowledge. This is termed as instructors' characteristics. Similarly, other researchers stated that instructors' characteristics are important in achieving success in the integration of IT in the course content (Boonmak, 2010; Carl, 2005; Chayeb & Best, 2005; Groomer & Murthy, 1996). This variable, however, has never been investigated by the previous studies.

Over all, Al-Jaboree (2012) and Ramadan (2011) mentioned that there are many important factors (such as politic situation, economy, culture and educational system), which have an important role in developing any educational course. The authors have that

declared that in Iraqi HEIs context, although these factors are important in the developing educational courses, it is difficult to study these types of factors; because of the unsustainable situations of politic and economy. In addition, the conflict between the Iraqi communities generates complexities in the Iraqi social fabric,which lead to create continuous changes in the educational environment with respect to these factors (politic situation, economy, culture, and educational system). Therefore, currently, it is difficult to make an investigation about these kinds of factors.

Being exposed with internationally accepted AIS knowledge and skills will enable Iraqi future accountants to compete globally so that they can be accepted to work with international audit firms or multinational companies, either in Iraq or abroad. Thus, AIS course in particular, and accounting curriculum in general, need an overhaul in Iraqi HEIs. This is the aim of this study, that is, to propose to Iraqi government, policy makers and academicians, a reliable AIS course content model that will be able to instill current AIS knowledge and skills among Iraqi accounting students.

From the aforementioned discussion, it is clear that there is a need to conduct this study, because of: (1) the research that conducted in the AIS educational issues are very few, (2) the Iraqi graduate from accounting department are unqualified because the low level of knowledge and skills in AIS; and (3) there is no clear guideline in how developing the course content.

1.2 Problem Statement

The Security Council and the United Nations (UN) imposed hard economic sanctions on Iraq because of the conflict between Iraq and Kuwait in 1990. Therefore, Iraq suffered from many difficulties in all sectors of life such as economic, education in general, infrastructural development and others (Garfieldet al., 2003;UN, 2000; The Government of the Republic of Iraq, 1999; UN, 1990**)**. Such effect is more significant in the educational sectors since it is impossible to get access to modern scientific resources (IT-related) which can support the 21st century curriculum development and teaching in general (Sakaa et al., 2007; Garfield et al., 2003). One of the aspects of accounting education that suffered a lot is AIS. This is because the embargo denied the right of Iraq to keep abreast with global IT changes (Al-Jaboree, 2012; Al-Jalily & Taha, 2010; Al-Sakaa *et al*., 2007; Taha, 2007). As a result, Iraqi AIS course content is outdated compared to that of other developing countries. Thus, there is a need to enhance the AIS course content in Iraqi HEIs through determine the factors that influence on this course contentcritically. This serves as one of the major motivations for the current study. This has reduced the competency level of Iraqi accounting graduates (Ramadan, 2011; Al-Ekachee & Al-Zubaidi, 2006).

Al-Busisi and Al-Khafaji (2009) uncovered that the outdated course content causes several problems in Iraq such as: (1) the graduates cannot keep up with technological development; (2) weak opportunities to get the benefits from training programs that are available in the governmental agencies; and (3) slow reaction of the private sector in determining its needs from graduates because of the lack of confidence in the graduates'

knowledge and skills. Since the AIS course is considered as essential in the undergraduate accounting programs (Badua, Sharifi & Watkins, 2011; Magay & Kitindi, 2008; Theuri & Gunn, 1998; Wn, 1983), there is, therefore, an urgent need to develop Iraqi AIS course content so that it can be on par with the international standards which take into its account the rapid changes in job requirements. Moreover, Ramadan (2012) uncovered that the course content contributors in solving societal problems and improving the graduate competence. The author declared that in Iraq, the whole course content is still outdated and there are modest attempts to improve the course content.

Theuri and Gunn (1998) revealed that the job requirements of accounting graduates in terms of skills and knowledge keeps on changing from time to time. Mgaya and Kitindi (2009) also support this viewpoint. This necessitates the need to come out with a conceptual model of AIS course content that will be able to accommodate such changes whenever the need arises. Al-Busisi and Al-Khafaji (2009) argued that in Iraq, the outdated course content decreased graduates' knowledge and isolated the HEIs from the real labor market.

Regarding the learning environment, Al-Busisi and Al-Khafaji (2009) revealed that because the courses content in the Iraqi HEIs are outdated, the educational system in Iraq suffered many problems, as follows: (1) weakness of knowledge level of the academic staff; (2) the education system being excluded from the methods that stimulate creative thinking and enhancement of the collaborative learning methods; and (3) failure to achieve the goals of the educational system. Therefore, it is necessary to investigate the

extent to which the technological state of the learning environment has an effect on AIS course content.

The advent of IT has changed the way an organization runs its daily activities (Meer & Adams, 1996; Elliott, 1992). These commendable characteristics of IT can be incorporated in AIS course content in order to make it more relevant to industrial needs. The accountants or future accountants, however, need to be well versed with systems and technology. Previous researchers have identified the need to propose a unique AIS course content model that can support IT needs of accounting graduates (Harrison, 1994; Bromson, Kaidonis, & Poh, 1994; Collier, Kaye, Spaul, & Williams, 1990; Armitage & Boritz, 1986). Trivializing this results in the accounting curriculum, fails to produce IT-enabled AIS accountants adequately and ultimately reduces their competitiveness. If this scenario is tackled properly, there is a chance that international audit firms will be recruited for accounting jobs in Iraq.

Ismail (2009) and Chayeb and Best (2005) revealed that there are only few researches that investigated AIS course content design and development to meet the international Standards. This creates a serious gap in the curriculum research area. They also acknowledged the variation in the AIS course across different countries. Such variation could be the result of the differences in the technological environment. Therefore, the contributions of this study will be of great significance. This research aims to explore the effect of IT knowledge on AIS course content using Iraqi technological environment.

According to the report from the Swedish National Agency for Higher Education (2003), Iraqi education system cannot meet the global 21st century educational challenges due to the lack of adequate technological facilities that can support IT-driven educational plan. This has affected the development of the educational curriculum in Iraqi HEIs as a whole. Thus, this study aims to explore the factors that influence the AIS course content in Iraq.

Al-Jalily and Taha (2010) and Taha (2007) argued that in spite of the importance of the accounting education in Iraqi HEIs, there are few researches conducted in this field. Aljaboree (2012), Ramadan (2012) and Mohammad (2007) pointed out that the current Iraqi HEIs curriculum is isolated from the problems that the Iraqi society suffered from; this is what makes the relationship to be partially missing between what the students study in the Iraqi universities and what they actually face in their careers. This sheds light on the researchable gaps in Iraq. As such, there is a need to develop courses that are in line with the world educational standards. Therefore, this study aims at providing evidence to bridge the gap in AIS course content in Iraqi HEIs.

Also, the result from pilot test indicates that the current state of AIS course in Iraq is unacceptable as shown in the data of Appendix B-2, more discussion is provide in detail in chapter four. Although, the sample for the pilot study is too small to generalize this finding, notwithstanding, it is an indication that there is a problem with the current AIS course in Iraqi HEIs.

Based on the above-mentioned discussion, it is clear that there is a critical need to re-examine and modify AIS course content in Iraqi accounting curriculum. It is difficult to

achieve good AIS course content if the factors that determine are not well identified. Thus, this research intends to propose the factors that influence the Iraqi AIS course content, which in turn can help HEIs to improve the AIS course content. The urgent need to embark on a major overhaul of the AIS course content, has motivated this research and it is hoped that the findings will help Iraqi HEIs to streamline the curriculum so that the goal of producing graduates who are both accounting knowledge and IT savvy can be achieved.

1.3 Research Questions

To guide the researcher when undertaking this research, the following questions are proposed:

- What are the critical success factors that influence the Iraqi AIS course content?
- Is the influence of IFAC recommendation on AIS course content moderated by instructors' characteristics?

1.4 Research Objectives

As mentioned above, the aim of this research is to determine the factors that influence AIS course content in Iraqi HEIs. To achieve this aim, the following specific objectives are set up as a benchmark:

- To identify the critical success factors that influence AIS course content in the Iraqi HEIs.

- To investigate the moderating effect of instructors' characteristics on the relationship between IFAC recommendation and AIS course content.

1.5 Significance of Study

Mohammad (2007) revealed that course content of any curriculum, including AIS, originates from its role in the development of society. Therefore, it is important, at this stage, to focus on course content as a step for the advancement of the Iraqi society so that Iraq's development can be on par with the developed societies. The author declared that the course content in Iraqi HEIs has remained the same from about three decades ago. Currently, course content is one of the priorities of the MHESR in Iraq (Al-Jaboree, 2012; Ramadan, 2012; Al-Jalily & Taha, 2010; Al-Busisi & Al-Khafaji, 2009; Al-Ekeche & Al-Zubaidi, 2006). Therefore, this study can help the MHESR to come out with a model to 're-invent' the AIS course content, based on the factors that need to be considered in AIS course content for the Iraqi HEIs.

Chayeb and Best (2005) revealed that only few research have been conducted on AIS course content to meet the international standards. This is supported by Callaghan, Peacock and Savage (2000). In their study, Hutchinson, White and Daigle (2004) uncovered that from 1992 to 2003, only eight articles, representing about eight percent (from 99 articles that discussed different topic in AIS area) in about the AIS educational issues, were published in two journals mostly dedicated to AIS researches, namely, International Journal of Accounting Information Systems (IJAIS) and Advances in Accounting Information Systems (AiAIS). In the same direction, Ismail (2009) reviewing articles published in IJAIS from 2004 to June 2009, found that only two articles

representing four percent (from the 52 articles that discussed different topics in AIS area) were related to AIS educational issues. Furthermore, the researcher in this study also looked into the IJAIS articles and found that until the last issue of the IJAIS in 2012, there has been no research published related to the educational issues in the AIS. Also the same thing happened with AiAIS.

From the above, it is clear that there are very few researches conducted about educational issues which are related to the AIS. This shows the significance of this study. Although this study focuses on factors that influence the course content, this information will be a crucial component in the total review of the AIS course content by Iraqi HEIs. In addition, this study will be the first in Iraq (to the researcher's best knowledge) studying the factors influencing AIS course content in HEIs. Although few studies have been conducted in accounting education in Iraq in this area, they were not related to AIS course content.

In addition, the Committee of Financial Experts (COFE)[3] and the International Advisory and Monitoring Board of Iraq (IAMB)[4] (2009) reported that the Iraqi government is now in the process of transforming the accounting systems in most of the Iraqi ministries from the manual system to the automated system (COFE, 2009). In turn, the Iraqi government agencies need accounting graduates who have strong AIS knowledge and skills who can work in an IT environment. Before this could happen, a relevant accounting curriculum

[3]In October 2006 the Iraqi Council of Ministers established the Committee of Financial Experts (COFE) to continue the work of the IAMB upon its dissolution.

[4]The International Advisory and Monitoring Board (IAMB) were created underthe mandate of United Nations Security Council Resolution (UNSCR)1483 of May2003.

must be established first. This is the area that this research intends to contribute to, by first highlighting the factors that influence on the AIS course content.

Dahawy, Tooma and Kamel (2005) uncovered that there are many sources in the literature covering the influence of IT in accounting teaching in developed countries but very few studies have attempted to test these relations in developing nations. This is supported by Dahawy, Merino, and Conover (2002). This is a sign of lack of literature in developing countries; therefore, this study attempts to reduce the literature gap.

This study proposes a conceptual framework that groups variables from previous studies. This makes it different from other studies. Also, considering instructors' characteristics as moderating variable for the first time makes this study different by providing useful information to the related parties, specifically the MHESR.

Based on the above, there are many differences between this study and previous studies. These differences make this study different from the other studies and in turn give academic and industry a new perspective to be considered. In addition, the above discussions show that many motives encourage the researcher to pursue this study.

1.6 Scope of the Study

The scope of this study is limited to the accountancy lecturers at Iraqi HEIs. As mentioned above, the main objective of this study is to identify the factors that considered in achieving a good AIS course content in the Iraqi HEIs. Therefore, the

targeted respondents are lecturers in the accounting department in Iraqi HEIs; whether the respondent is a specialist in AIS, teaches AIS subject, or the respondent is interested in AIS research. These lecturers can provide important information on how to improve the AIS course content, because they have sufficient knowledge that enable them to identify the factors, which are considered as important factors in the AIS course, content in Iraqi HEIs. This argument was supported by Carl (2005), Lightfoot (1999) and Noll and Wilkins (2002), whereby they mentioned that IS lecturers generally have long-term vision on what is supposed to be taught in the class.

1.7 Organization of the Thesis

In order to familiarize the reader with this research, the following outline is offered. This study is composed of five chapters. Each of the chapters provides an understanding of various issues viewed to be critical for this research. The descriptions of each chapter are provided in Table 1.1.

Table 1.1
Dissertation Outlines

Chapter	Description
Chapter 1	As written in this chapter, the aim of this chapter is to provide the background of the study, problem statement, research questions, research objectives, research scope, and dissertation outline.
Chapter 2	This chapter contains the literature review and previous researches that are related to this study. This chapter also includes the overview of AIS and the accounting educational variables. All these theoretical information are then linked to this research conceptual framework.
Chapter 3	This chapter describes the research framework and hypotheses and The discussion includes related theory to the study and the hypotheses statement. The chapter also explains the research methodology employed in the study. The discussion includes research design, sample and the operational definitions. Moreover, this chapter contain a discussion about the developing of research instrument, measurement of the variables and the methods of data analysis.
Chapter 4	This chapter presents the findings of this study. The statistical data and its interpretation are given in details.
Chapter 5	This chapter discusses the major findings and their implications to the Iraqi AIS course content. These chapter summaries the findings of this study. The limitation and recommendation for future research are also provided.

CHAPTER TWO

LITERATURE REVIEW

2.0Introduction

This chapter contains a detailed review of this study since it has been argued that the main basis of any study is literature review (Sekaran, 2000). The review comprises both theoretical (leading to the formulation of the research framework) and analytical (establishing a link between the research and the previous related studies) aspects. Issues related to AIS course content are equally reviewed in depth.

2.1Accounting Education

Accounting education can be defined as educating the students in determining, collecting, recording, summarizing, reporting, analyzing and auditing the information that will steer the business decisions (AY, 2011).According to the International Accounting Education Standards Board (IAESB) (2010), education can be defined as "organized process intended to getting and improving knowledge, skills, and other capabilities within individuals process that is typically but not exclusively conducted in academic environments.

Taha (2007) defined the term accounting education as scientific plan aimed at preparing and qualifying the accountants depending on a system consisting of a set of interrelated elements and integrated with each seeking to achieve the objectives of scientific and professional accounting

The audit and accounting organization for the Gulf Cooperation Council (GCC) defined education as action or process of order, which aims to develop knowledge, skills and personality, or other capabilities and features of the individuals (GCC Accounting and Auditing organization, 2003). Blenkin, Edwards and Kelly (1992) defined education as a process by which knowledge is conveyed or 'delivered' to students by the most active approaches that can be devised.

In short, the researcher defined accounting education as a systematic process of acquiring relevant knowledge, skills, and practices in accounting and business, which are required by business communities and standards established by the accounting professional bodies for qualified accountants.

According to Laufer and Watkins (1990), accounting education researches are growing, which is becoming increasingly important. Carr, Chua and Perera (2006) argued that since 1980s, accounting education has been under review by policy makers, lecturers, researchers, practitioners and the public. The authors uncovered that financial crises which happened in many countries around the world (like Enron and WorldCom in USA and Parmalat in Italy) highlighted the deficiencies in accounting education. In this regard, Jackling, Cooper, Leung and Dellaportas (2007) stressed that the accounting education can be considered as one of the remedies to address the profession's ethical crisis. The Bedford Report (American Accounting Association , 1986) recommended a main reorientation in accounting education to fit in with the contemporary business environment.

In the USA universities, accounting departments made some attempts to make the accounting educational courses 'ideal'. However, Sin and Reid (2005) revealed that Accounting Education Change Commission (AECC) observed that courses of accounting education have not kept pace with the Bedford Committee Report requirements.,. In line with Sin and Reid (2005), Albrecht and Sack (2000) stated that such structural changes are not significant and far from 'ideal'. The AECC issued in 1990, a statement about the changes which are needed in accounting education (Albrecht & Sack, 2000; Sin & Reid, 2005). The AECC statement emphasizes on life-long learners and graduates to hold a range of skills which are important at entry level to the profession (AECC, 1990). In this regard, many researchers argued that accounting education should reflect more closely the needs of practitioners, so that the accounting alumni will be capable of adapting easily to the requirements of the business environment (Ingram, 1988; Kaye, 1985;Bhaskar, 1983).

Focusing specifically on the Arab region, the attention on the accounting education can be seen in the activities that are held under the auspices of universities and accounting professional institutions. In 1996, in the Saudi Arabian kingdom, the Seventh Symposium on developing accounting - the education and the rehabilitation of accounting in Saudi Arabia kingdom, was held. The final report highlighted many recommendations which stressed the importance of accounting education in preparing qualified accountants. The report also highlighted that the accounting education should be updated to keep pace with economic, technological, and professional developments (Taha, 2007).

Al-Rashad (1998) and Zaid (1996) stressed on the importance of the role of accounting education in establishing professional skills. The authors also revealed that the weakness in accounting curriculum, which is applied in the Saudi Arabian universities, and the weakness in lecturers' performance are considered as the most important barriers to the skills development of accounting students.

In Iraq, studies conducted by Al-Fadel (2002) and Al-Shawee (2001) stressed on the modification of accounting education in Iraqi HEIs. The authors highlighted the importance of accounting curriculum in building and developing the accounting professional skills, which can lead to improved accounting departments' performance in responding to the requirements of the information era. Similarly, Al-Sakaa (2002) uncovered that accounting education in Iraqi HEIs is not commensurate with the information era requirements. However, accounting education in Iraq is still of interest to related parties (Al-Sakaa, 2002). Moreover, the author revealed that giving attention to the accounting course is considered as one of the important elements of developing accounting education.

From the above discussion, it is clear that accounting education is an essential element in preparing aqualified accountants. The discussion also shows that accounting education in Iraqi HEIs is under review. The next section provides a discussion of the accounting curriculum.

2.2Accounting Curriculum

According to Willits (2010) accounting as an educational curriculum can be traced to the early 1880s when Wharton was provided the first accounting curriculum. A description of the 'Curriculum' concept is essential in this study to explain the term "Accounting curriculum". However, curriculum has several interpretations and definitions. Basically, this depends on the work done by researchers. Researchers always try to discuss all definitions so that a clear definition can be obtained. According to the American National Council of Teachers of Mathematics (ANCTM) (2006), curriculum should not be deemed to be a mere combination of activities. It should, on the other hand, be an organized framework to guide teachers on important ideas and themes that must be focused on, at any particular point of time. Marzano (2003), said that several researchers have agreed that a curriculum must focus on teaching few concepts. However, these few concepts must be taught in-depth in order for the learners to master the skills. In this light, it is vital for a curriculum to be precise.

Finch and Crunkilton (1999) defined curriculum as the 'aggregate of the learning activities and experiences that a student has under the supervision of an educational institution'(p.11). A new element was included by them the definition, i.e., learning activities, which are considered important when designing a curriculum that can achieve its intended objectives. Mock, Pincus, and Ander (1991) stated that an accounting curriculum is inclusive of the determination of the relative number and nature of general knowledge courses, e-business courses, non-accounting business courses and accounting courses. Nonetheless, this study has not referred to the AIS curriculum, perse.

UNEVCO in the final report of the International Project on Technical and Vocational Education (IPTVE) (1994), Curriculum is defined as a tool that avails information to the targeted learners. Besides this, it also supplies the goals and objectives of the learning process, the contents, the teaching methods and aids employed and the evaluation approach of the course.

Mamidi and Ravishanker (1989) defined curriculum as a group of activities established by the educational institutions, to achieve the goals of education. It can be further stated that for the proper definition of curriculum, it must have set clear goals. This study, therefore aimed to help in producing employable accounting graduates, by helping in the design of a relevant curriculum.

Doll (1989) said that curriculum can be viewed as containing both formal and informal contents. The learners go through a process of acquiring new knowledge and understanding, developing relevant skills, experience, attitudinal changes, and other learning-related positive outcomes with benefits. The author also contended that experiences could bring about the enhancement of knowledge, skills and attitudes. It is therefore clear that one of the important elements that must be incorporated into any educational curriculum is its ability to add value (Doll, 1989).

Oliver (1982) viewed a curriculum as a plan or program containing all experiences obtained by a learner under a school's guidance. All schools must be responsible for planning the learning experiences imparted to learners. Such learning can transform the

learner with the right mind-set, knowledge and skills, which make him/her employable in the job market.

In the words of Tanner and Tanner (1980), curriculum refers to all forms of experience and knowledge gathered by learners in a formal, well-guided educational setting (schools). Besides defining curriculum as the experiences given to the learner, authors have also noted the important role of schools in managing and controlling such experiences.As withDoll (1989), Tanner and Tanner (1980), also emphasized the crucial role of educational institutions in the dissemination of the curriculum content, in a way that will transform them into usable experiences.

According to Macdonald (1965), curriculum refers to all activities that occur prior to the instilling of knowledge. Hence, the curriculum can be defined as a platform to structure and guide the process of education. In this study, the researcher defines curriculum as a plan or a schedule comprising a set of learning activities and experiences, besides knowledge, skills, attitudes and values, which are imparted to the learner, under the guidance of universities, institutes and lecturers. After defining curriculum, a discussion about accounting curriculum will provide in following section.

According to Carr and Mathews (2004) declared that in the USA, the traditional accounting curriculum is still under criticism for being ruled based and demanding rote memorization; this kind of leaning leads the student to be ‘trained’ rather than ‘educated’.

The authors highlighted that because of continued reliance on 'traditional' accounting curriculum, the graduates will be ill-prepared to enter the job market.

Al-Hubaity (2003) revealed that there is a critical need to review the accounting curriculum in the universities in Arab countries. This review will help the countries to be able to cater to labor market requirements, thus reducing the reliance of the Arab labor market on foreign accountants. By preparing qualified accountants who are equipped with recommended knowledge and skills, Arab countries can be self-sufficient, in terms of requirements for local accountants.

Bonk and Smith (1998) announced that many recommendations have been raised in order to change the accounting curriculum, including the rebuilding process for accounting courses around the generative and evaluative skills and knowledge required by the global business environment. Wyhe (1994) argued that the composition and the right approach to ideal accounting curriculum are still an area of contention (as are matters of pedagogy and intellectual content).

Accounting curriculum must be able to provide learners with not just the necessary and basic knowledge, but also with the minimum undergraduate educational experience. These are necessary for the graduates to become employable (Wasley, 1963).

From the above discussion, it is clear that accounting curriculum is an integral part of accounting education. The next section discusses the AIS course content, which is the focus of this research.

2.3 Accounting Information System Course Content

Generally, a curriculum comprises many courses, which students must fulfill in order to pass a certain level of education (Ramadan, 2011; Taha, 2007). In particular, Al-Jalily and Taha (2010) and Taha (2007) defined accounting course content as 'a set of elements interconnected and interacting with each other to provide the necessary accounting knowledge, which affect the scientific and professional level of accounting students'.

In this information era, businesses are depending more and more on IT applications to improve business efficiency and embark on the knowledge economy. This attitude has led to the need for corporate accountants, IT professionals, internal auditors, and external auditors to take on new roles and responsibilities (Gogan, Smith-David, Eining, Fedorowicz, & Porter, 1999). Thus, the AIS course is different from the traditional accounting curriculum. This is because IT concepts are embedded within the AIS course. Nevertheless, it is argued that the AIS course does not consist of merely adding IT elements to the existing accounting curriculum; hence, the inclusion of IT concepts must be dictated by the required professional knowledge and skills (Ismail, 2009; Gogan et al, 1999).

The recent development of an information system (IS) and its application in the business world have also necessitated the integration of IS the concept in accounting education (Borthick, 1996; Vatanasakdakul & Aoun, 2011). As such, accounting education is evolving rapidly, and ways and means must be discovered about how best to fit IS theories for accounting students (Potter & Johnston, 2006). In the same vein,

Fordham(2005) mentioned that the growing need for technologically savvy accountants mandated educational institutions in the accounting area to re-focus on AIS course. This viewpoint has been supported by Stone (2002), who highlighted that the numbers of AIS topics are increasing in the national accounting programs, and that higher-education institutions recognize the IS and technology as an integral part of accounting.

Chang and Hwang (2002) posited that many institutions regard the AIS course as a platform for accounting students to gain the requisite IT education and training. Vatanasakdakul and Aouny (2009) clearly stated that the AIS is interdisciplinary in nature and integrative approach from accounting and IS application. Similarly, as shown in Figure 2.1, Bagranoff, Simkin and Norman (2009) clarified that the AIS as a hybrid approach is an intersection of two disciplines namely, accounting and IS domains. Therefore, in this age of globalization, AIS curriculum designers cannot leave out the IFAC recommendation regarding the role of IT, when discussing AIS course.

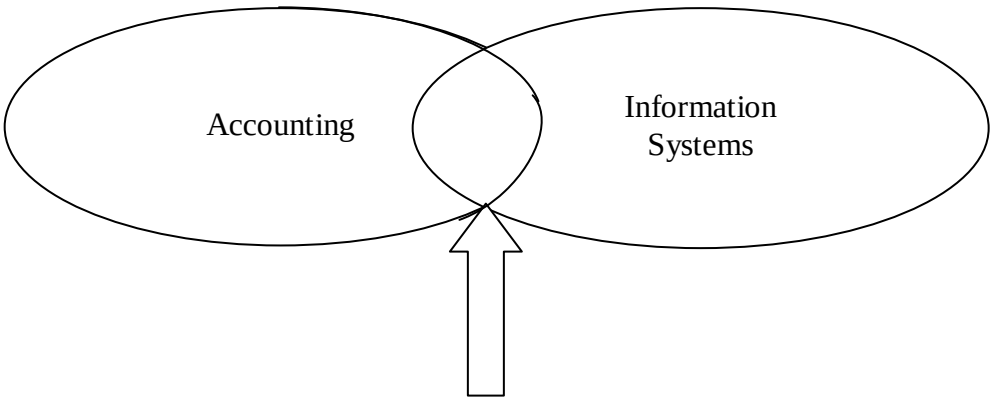


Figure 2.1:
The AIS As a Aybrid of Accounting and Information System Domains
Source: Bagranoff, Norman, and Simkin (2009) p. 24

According to Chaker (2011) and Deppe, Sonderegger, Stice, Clark, and Streuling (1991), the right educational process outcomes can provide the direction for creating successful professional accountants by identifying a group of competencies as follows: (1) communication skills; (2) information development and distribution skills; (3) decision-making skills; (4) knowledge of accounting, auditing and taxes; (5) knowledge of business and the environment; (6) professionalism; and (7) leadership development. Once again, all this demonstrates the lack of inclusion of the IFAC recommendation in the accounting curriculum.

Going further, Vatanasakdakul and Aouny (2009) exposed that teaching accounting students in the IS field is a major challenge for many academics. However, many researchers pointed out that in contrast to traditional accounting education, which includes financial accounting, management accounting and taxation, AIS is a very new and the least standardized component of the curriculum (Barkman, 1998; Borthick, 1996; Vatanasakdakul & Aouny, 2009).

Chang and Hwang (2002) and Theuri and Gunn (1998) revealed that the AIS course considered a fundamental and a vital course for accounting students. Whereby inside the AIS curriculum, the accounting specific IS concepts must be intertwined with the technical accounting education. However, the authors also highlighted that narrowing the gap between the academic processes and the practitioners' needs is the most daunting challenge. Many researchers have supported this standpoint, when they argued that AIS course is a specialized course in the accounting curriculum that includes IFAC

recommendation related to accounting systems (Badua, et al., 2011; Meer & Adams, 1996; Wn, 1983). Overall, Davis and Leitch (1988) stated that the AIS course, in some cases, covers all-important themes regarding to accounting education.

From the above mentioned, it is clearly evidenced that the AIS course is a crucial course in accounting education because it integrates accounting and IS domains. The next section discusses the steps to advantages of course content development.

2.4 Advantages of Course Content Development

Bybee et al. (1990) stated that any course cannot be considered as a good course, only if it has the capacity to achieve the learning objectives which have been identified. Thus, there is always a need for constant review of the course so that it can accommodate all forms of changes. These two qualities are the core of any good course content, which including AIS course (Ismail & Salim, 2005).

Rush, Lawter, Thomson, and Atkisson (1976) identified four main components that can be used to determine the success of a course content, as follows: (1) creation of a warm, relaxed and informal learning environment, which is student-centered[5]; (2) clear definition of participant's roles, which helps in avoiding any form of conflicts in terms of responsibilities; (3) identification and maintenance of the observable sense of course direction by the concerned faculty; and (4) incorporation of available resources into the learning environment. However, merely identifying these factors is not sufficient; further

[5] This approach can assist in establishing good student-lecturers' interaction, analyzing of the educational process, determining appropriate actions and their likely consequences whenever necessary (Rush et al., 1976).

tests must be carried out to identify which of the factors are more important. These components are the basis of this research's conceptual framework.

UNEVCO (1994) identified the following indicators to be followed when developing educational course content: (1) its ability to attract young generation to acquire necessary skills in the profession; (2) its ability to discharge both the technical and coping skills required by the learners; (3) its ability to provide the learners with basic skills to enable them to switch from one work area to another whenever the need arises; and (4) its ability to guarantee open access to all minus any constraints. In the accounting profession, these yardsticks are vital due to the need to compete in the global market and create innovations. These standards are embedded in this research's conceptual framework as well.

Field and Hoffman (1994) and Hoffman and Field (1995) equally identified self-determination for the learner as a key factor for a good course content. The primary goal is the learner so that learning motivation can always be established. Therefore, the skills that are required to instill self-determination in the learners should be incorporated into the course content (Hoffman & Field, 1995; Field & Hoffman, 1994). As self-determination is required in every profession, it is integrated into this research conceptual framework. Self-determination itself is a function of many other factors, which need to be identified in order to motivate the learners to be self-determined.

According to Tyler (1949), in developing any course content, there are four main principles that must be taken into account: (a) definition of goals (objectives); (b)

establishment of learning experiences (a real-life application); (c) organizing learning experiences; and (d) evaluation of learning outcomes. All these four principles are important for any professional development, and the accounting profession is not the exception. In the next section, the advantages of good course content are discussed.

The researcher has discussed the need for good course content but has not emphasized the associated advantages. This section discusses, in detail, the advantages of good course content. The only way a learning process can be well guided by reliable course content (Colet & Durand, 2004). It cannot be denied that good course content can bring about an improved educational faculty performance, which can be measured through the factors that constitute the benchmarks. Therefore, a study of this nature serves as a roadmap towards a reliable AIS course content.

Bruner (1960) argued that a good course content is important for not only achieving educational goals, but must also facilitate and pave towards the chosen destination, implying that good course content will not only deliver core knowledge but also the creativity in the learners' mind. This is what employers are looking for in the graduates.

To recapitulate, a good course content leads to improve educational performance and employability. These are the goals of good course content investigated in this research. The next section defines and describes AIS course content from the Iraqi perspective.

2.5Issues Relatedto AIS Course Content and the IraqExperience

Iraq's history goes back several thousands of years. About one thousand years ago, Baghdad was one of the greatest cities in the world. At the beginning of the 20th century, the first modern colleges were established. In 1975, the government announced the right to free education from primary to university level, although only primary education was mandatory (1976: Compulsory Education Law). Therefore, education was complementary at all levels. In 1976 as well, the Iraqi government launched a national campaign to combat illiteracy (Al-Janabi & Urban, 2011). According to the United Nations Office of the Humanitarian Coordinator for Iraq, Iraq had one of the best educational systems in the Arab world at the beginning of the 1980s. The gross enrollment rate for primary schooling was around 100%. HEIs, especially the scientific and technological institutions, were of international standard (Al-Janabi & Urban, 2011).

Al-Janabi and Urban (2011) revealed that the dramatic break point started in 1990 right after the Iraqi occupation of Kuwait. This was when the United Nations Security Council imposed economic sanctions on Iraq, including almost a full trade embargo barring all imports from and exports to Iraq. According to the former Director of the World Food Program in Iraq, the sanctions on Iraq were the most severe and the most prolonged ever imposed on a country. The education system in Iraq was affected by these sanctions (De Santiseban, 2005; Hlavac, 2011). It must be noted that these sanctions did not just affect the education system but all aspects of Iraqi life: infrastructure, employment, health, and the social fabric (Mohammad, 2007). Al-Janabi and Urban (2011) argued that for over two decades, Iraq has been in a continuous state of war - first against Iran in the 1980s,

and since then against the international coalition in 1991 and 2003. The sanctions against Iraq ended in May 2003 when Iraq came under foreign occupation. Nonetheless, the education system, economic and social situation in Iraq did not improve much during the period of 2003-2010. Because of this, Iraq has been unable to reconstruct its educational system, including curriculum, facilities and infrastructure (Al-Janabi & Urban, 2011).

All professional courses, AIS included, must provide for the graduates to be equipped with the applied skills and knowledge demanded by the profession for better opportunities in the job market. To attain this goal, the only way is to have a good course content. Many researchers have identified educational development as one of the prime ways for a nation to progress (Grossman, et al., 2007). The best example of this is Turkey, whereby it is able to achieve its social goals via educational development. Accordingly, Kallos (2003) stated that educational development enhances the quality of social, economic and political situations of a country. To progress, it is crucial for Iraq to emulate the example of Turkey. Mohammad (2007) studied the course contents in the Iraqi HEIs and discovered that they are lagging behind.

In a similar vein, Colet and Durand (2004) argued that the course content status influences overall development of the educational faculty, which in turn, enhances the performance of educational organizations. This implies that the effective AIS course content in Iraq will positively enhance the accounting profession as a whole.

The clarion call for accountants to become familiar with IS to assist a country to be successful in the knowledge economy era has mandated the inclusion of AIS into the accounting curriculum in universities and colleges (Tella & Adu, 2009). However, Fordham (2005) revealed that there is no clear definition about the topics that have to be covered in the AIS syllabus. In his studies, he concluded that some contents like programming, database and series of IT technical concepts added to the AIS course content might not have much effect on its development. It is therefore necessary to study the factors that predict such development before attempting to make changes to the contents of the course.

Developing a good course content is equally important as creating a good delivery channel for its successful implementation. Several well-intended educational reforms have failed due to the inability of learners to cope with the changes, because of the way they had been trained (Lewis, 1999; Simek & Yildirim, 2001). To assist the Iraqi government to produce well-rounded accountants, a framework that can transform well-intended educational reforms into practice is very much needed. This current research intends to contribute to this aspect.

A governmental document in 2009 from MHESR in Iraq shows that all programs in the college of management and economy, of which AIS is one of them, are under review to enhance the curriculum (MHESR, 2009). This shows that this study is currently needed in Iraq to provide a conceptual framework for developing a good AIS curriculum by adapting previous conceptual models.

The economic sanctions imposed on Iraq between 1990 and 2003 negatively affected the economy, education, social, and other sectors (Al-Janabi & Urban, 2011). However, the educational sector suffered more since it became impossible to access current scientific resources (IT-related) which can support the 21st century curriculum development and teaching (Garfield et al., 2003). This is indicative of the fact that there are various research gaps in Iraq to produce a curriculum that is on par with world educational standards. The researcher, therefore, aims at reducing the gaps in AIS course content in Iraq.

Al-Sakaa (2007) mentioned that AIS course content in Iraq is outdated and therefore, a transformation is needed so that it can offer the prospective AIS graduates the required skills and knowledge to build their careers. Al-Ekeche and Al-Zubaidi (2006) had the similar view that the failure of AIS students can be traced to the curriculum being outdated. All these justify the need for a study of this nature.

Al-Sakaa (2007) revealed that the studies related to the AIS education in Iraq were very few. Also Ismail (2009) and Chayeb and Best (2005) confirmed that the researches which are related to AIS education issues are a few; thus, creates a serious gap in the course content research area. They also acknowledged the variation in the AIS course content across different countries. Such variation could be contributed by the differences in the technological environment. This study aims to study the effect of this on effective AIS course content using Iraq technological environment.

According to Theuri and Gunn (1998), the job requirements of accounting graduates are constantly evolving, particularly in terms of skills and knowledge. Al-Zeebary (2007) revealed that the course content in the Iraqi HEIs is not able to provide graduates with skills and knowledge required by the job market. This is supported by Al-janabi and Urban (2011) and Al-Sakaa (2007). This has created the need to come up with a conceptual model of AIS course content that can accommodate such changes, as and when they occur. In turn, this serves as one of the motivations for this study.

From the aforementioned discussion, it is declared that there is a critical need for understanding AIS course content in Iraqi HEIs. This, in turn, creates a need for determining the elements to improve AIS course content in Iraqi HEIs. This research intends to fill that the gap by proposing a conceptual framework that consists of elements that are relevant for enhancing the quality of AIS course content in Iraqi HEIs. The descriptions of definitions of the proposed elements are dealt with in the next section.

2.6 The Determinants of AIS Course Content for the Iraqi Higher Educational Institutions

As mentioned above, and in the same view of the Mathematical Sciences Education Board (MSEB) (2004), a good course content can be defined as the extent to which the implementation of the developmental course content program achieves positive and valid learning objectives for students, based on certain criteria, like student's proficiency, evaluated using good research designs. The same thing is applicable to AIS course content. In addition, when defining the curriculum programmatic objectives, its relationships with the set standards, evaluation of the course contents for

comprehensiveness, accuracy and depth, balance, engagement, timeliness, and support for diversity, quality assurance tests can be used to describe how reliable a course content development process is (MSEB, 2004). To appreciate all these definitions, the researcher embeds the following elements in the proposed conceptual framework: (1) employers' needs; (2) needs of professional bodies; (3) learning environment; (4) IFAC recommendation; and (5) instructors' characteristics as a moderating element. Subsections 2.7.1 until 2.7.5 provide the rationales for the action. All these factors are empirically investigated in the present domain of study since the measurement items are drawn from quite a considerable number of relevant literatures. This makes the variables involved in this study to be better than that of the previous studies.

2.6.1 Employers' Needs

Previous researchers found that one of the primary determinants of AIS course content is the employers' requirements, which shows that the prospective employer of accounting graduates should be a key player in the course (Taha, 2009; Dillon & Kruck, 2008; Lee et al., 2002). This is supported by Lightfoot (1999), whereby the author stated that the universities should fulfill their responsibilities in preparing the students to the first job through teaching them the important skills and knowledge that can be useful when they commence their careers. This justifies the significance of employers' needs in any course content since the employers are the major stakeholders.

According to Kennan, Willard, Cecez-Kecmanovic, and Wilson (2008), one of the major problems facing employers in accounting related fields in recruiting appropriately

qualified graduates is the inability to bridge the gap between the career path and academic study. In a similar view, Grant (2007) attributed the difference to the perceptions of educators and employers about knowledge and skills required by IS graduates. This is also applicable to accounting graduates. Therefore, it is necessary to specifically propose a conceptual framework that can be utilized to strike a balance between the expectations of the educator and the employer.

There have been a lot of arguments by the researchers in accounting education, generally on whether more emphasis should be given to core accounting knowledge/skills or the personal and interpersonal skills when developing accounting education curriculum (Dillon & Kruck, 2008; Janicki, Lenox, Logan, & Woratschek, 2008; Kavanagh & Drennan, 2008; Lee & Fang, 2008; Whitefield & Kloot, 2006; Chayeb & Best, 2005; Noll & Wilkins, 2002; Lee et al., 1995). Therefore, there is a need to determine which of the skills/knowledge actually leads to a good AIS course content.

Lee, et al. (1995) revealed that IS curriculum should be designed in an effective way by strictly following a clear vision of the career path of the prospective graduates. They further argued that the technological aspects of the curriculum should not be overlooked. This can be similarly applied to the AIS course content.

Theuri and Gunn (1998) highlighted that AIS course content should be set by the main employers of accounting graduates (accounting firms and corporate employers). The authors concluded that the opinions of the accounting employers could lead to a

continuous improvement of the AIS course content. Therefore, it is necessary to bridge the gap between employers' requirements and the contents of AIS course so that a course that can instill required knowledge, and skills can be established.

According to the United Nations Educational, Scientific and Cultural Organization's (UNESCO) final report on regional training seminar on technical and vocational education curriculum development in the Arab states, it was agreed that there is a need for the participation of employers and the trade unions in the process of developing a curriculum (UNEVCO, 1994). This gives the researcher the knowledge about the position of UNESCO on the importance of employers' needs in any course content.

From the aforementioned discussion, it is clear that the inclusion of employers' needs is critical in order to achieve a good AIS course content. Based on the previous studies, the researcher integrated three elements that can fulfill employers' needs, which are as follows: (1) core knowledge; (2) business environment knowledge; and (3) personal and interpersonal skills. The descriptions of each element are provided in the following three subsections.

2.6.1.1 Core Knowledge

There have been arguments from different angles in the stream of academic research that students need to be motivated in order to gain core knowledge in any discipline (Lee & Fang, 2008; Janicki et al., 2008). The same thing is applicable to accounting students. Stevens (1956) revealed in his study that students are always ready and happy to learn what is perceived to be useful in the course. In this regard, the usefulness and

applicability of the course in a real life situation should be reflected in the course so as to motivate the students and by doing so, making the course content a good one.

There have been several arguments as to whether more attention should be given to accounting knowledge or professional skills in achieving a good AIS course content. This can be affirmed from a study conducted by Meer and Adams (1996), where they uncovered that AIS course content plays a major role in preparing accounting graduates before they join any business organization. The authors pointed out that the variation in the opinion between the academics and practitioners creates the need to include IT, practical skills and system analysis, design and development in the AIS course content. This supports the action to include them as AIS core knowledge.

Kavanagh and Drennan (2008) argued that the employers of the AIS graduates require analytical/problem solving skills, business awareness and real accounting skills. All these will form part of the items for measuring employers' needs in AIS course content in the Iraqi HEIs.

The skills/knowledge that can be embedded in the graduate students, especially for the IS professional entry-level, is generated through effective course content that incorporates professional requirements in that field of study (Chayeb & Best, 2005). This supports the importance of employers' needs in any course content. Andrews and Wynekoop (2003) uncovered that little empirical work has been done to identify what IS knowledge needs to be included in the AIS course; this provides additional evidence to the importance of this study.

From the above discussion, it is clear that core knowledge is closely related to employers' needs. Thus, it is included in this research's conceptual framework as the first element.

2.6.1.2 Business Environment Knowledge

The Donor Committee for Enterprise Development (DCED) (2008) defined business environment as a group of conditions, which include policy, legal, institutional, and regulatory conditions that manage business activities. Moreover, the Committee identified the term as a sub-set of the investment climate and included the administration and enforcement mechanisms established to implement government policy, as well as the institutional arrangements that influence the way key actors operate (e.g., government agencies, regulatory authorities, and business membership organizations including businesswomen associations, civil society organizations, trade unions, etc.).

Jain, Trehan and Trehan (2006) defined the business environment as a set of conditions, circumstances and influences that surround and affect the functioning of the organization. Based on the above definitions of business environment knowledge, this study defines it as knowledge about the factors and elements outside the business organization, which directly or indirectly affects the business organization.

Noll and Wilkins (2002) argued that IS jobs are becoming dynamic and that traditional IS curriculum is not fulfilling the present job requirements. They also argued that the relationship between IS and the knowledge of business organizational environment should be considered in the curriculum to better prepare students for systems analyst jobs.

In addition to this, the authors highlighted the major role that stockholders play in IS curriculum through constant review of the curriculum and making additional recommendations. Thus, the students' career paths need to be designed according to the changes in the business environment. Similarly, Cappel (2002) explained that the IS function has evolved from traditional, centralized organization to more decentralized, end-user focused business orientation. Therefore, it is important for the IS professional to be equipped with business environment knowledge. Tang, Lee and Koh (2001) indicated that business environment knowledge is one of the highly important knowledge areas required when developing future professionals.

Al-Baraznjee and Kader (2007) argued that embedding knowledgeable and organizational framework for the business organization into the accounting curriculum is important to give the students a clear view about the knowledge of business environment. Trauth, Farwell, and Lee (1993) found that there are two opposite directions in which the IS profession can be viewed. The first one is looking into business and human direction and the other is searching for technical skills required to maintain an organization's technology infrastructure. This causes knowledge explosion in discovering what level of knowledge and skills should be installed in the mindsets of accounting graduates. In turn, there is no course that can meet all challenges. Therefore, there is a need for proper communication between the universities, industries and concerned groups which can help the universities to improve the IS curriculum to prepare the students to face real life situations. This shows the importance of making regular assessment of the AIS

coursecontent in the universities to meet the dynamic needs of the business environment. Thus, it is included in this research's conceptual framework.

2.6.1.3 Personal and Interpersonal Skills

Tang et al. (2001) defined interpersonal skills as the skills, which are needed to work well in an organization or team. Lee et al. (2002) defined personal skills as an individual's general characteristics that are useful in conducting IS work in an organizational environment. Dalal (1994) defined personal skills as skills that makes the IS professional able to have critical and creative thinking and abilities to deal with technical and managerial issues related to the design and use of IT to solve business problems rather than having the mere knowledge about a narrow subject.

Lee and Fang (2008) revealed that both employers and students share the same perception about the skills required in the entry-level for IS jobs. They viewed team skills, communication skills, critical thinking skills, personal motivation and creative thinking as both personal and interpersonal skills that are needed by any fresh graduate of IS. Such soft skills can be applied to AIS since AIS is an integral part of the IS. Similarly, Janicki et al. (2008) equally supported this viewpoint. In addition, McMurtrey, Downey, Zeltmann, and Friedman (2008) and Tang, et al. (2001) uncovered that it is important to equip IS graduates with personal and interpersonal skills.

Generally, it is revealed that the skills to think creatively and innovatively, handle conflict, handle challenges, handle change and empathy, are lacking in the present

accounting curriculum (Whitefield & Kloot, 2006). However, not all these kinds of skills are contained in the core content of a course but rather they are the personal and interpersonal skills, which need to be developed by effective course content.

Kavanagh and Drennan (2008) revealed that employers have yet to understand the basic analytical skills required by graduates in the accounting profession. The source also disclosed that graduates in accounting profession are in need of education in other bodies of knowledge like organizational behavior, strategic management, measurement and analytical skills complement the accounting core knowledge they acquire. It is expected that their personal and interpersonal skills will be developed through such complementary knowledge.

Daggett and Liu (1997) conducted a survey among 92 employers of new accounting graduates about their readiness for the workforce. The result of the study showed that graduates are least prepared in writing, presenting, and interactive skills, while they are found to be best prepared for required data entry, data retrieval and data analysis skills. This is likely a deficiency in designing the non-functional (core) aspects of the course content that produces the graduates. Thus, developing a conceptual framework that can clearly specify types of personal and interpersonal skills required by accounting graduates is thereby necessary. This motivates this study to include personal and interpersonal skills in its conceptual framework.

To recapitulate, it is reiterated that the elements of employers' needs are the first elements of this research's conceptual framework. Employers' needs in turn should be understood from three perspectives, which are core knowledge, business environment knowledge, personal and interpersonal skills. Chapter 3 describes the approaches that were undertaken to validate these elements.

2.6.2 Professional Bodies

The term professional bodies can be defined as organizations, which represent the interest of the professional practitioners, and so act to maintain their own privileged and powerful position as a controlling body (Harvey, Mason, &Ward, 1995). The accounting professional bodies develop educational standards as a basis for developing professional accountants (Saville, 2007). They act as a regulatory body to govern accounting education so that the graduates are able to perform in the business competitive environment (Saville, 2007). In line with Savile (2007), the IFAC guideline (2005) also considered performance in the business competitive environment, the ability to support information creation and design as important in the course content. The International Education Standards (IESs) for professional accountants assist those responsible for accounting education in ensuring that accounting students acquire and demonstrate the required competence so that they can continually meet the expectations of their working environment (Chayeb & Best, 2005).

It is practically impossible to separate professional bodies from academics in designing AIS course content since the course content is based on the professionals' needs as well.

Several researchers have argued that accounting professional bodies have a role to play in achieving a successful AIS course content (Saville, 2007; Carr & Mathews, 2004; Johns, 2002; UNEVCO, 1993; Tyler, 1949).

Previts (1991) observed that the Certified Public Accountants (CPA) examination should include some elements of professional duties and responsibilities. In other words, ethical principles in the profession should be considered in the core course. The same principles could be applied to AIS course content. Thus, ethical issues should be included in the AIS core knowledge.

Al-Haialy (1996) argued that there are many professional bodies contributing to develop professional accounting like FASB, AAA, and AICPA, besides the AICP in England, Australia, and Canada, all of which are working to develop accountancy, through providing research, recommendations and establishing the accounting professional principles which assist this science to keep pace with economic and scientific development. The author uncovered that in the Arabic countries, there is a total absence of accounting professional bodies' role in developing accounting academic studies. In line with Al-Haialy (1996), Al-Humaeery (2006) revealed that lack in the role of professional accounting bodies' in Arabic region was due to several reasons which can be summarized as follows: (1) there is no legislation that defines the role of professional bodies; (2) there is inadequate financial resources to support the professional bodies; (3) there is no awareness of the role of professional bodies; (4) there is no suitable mechanism to improve the importance of professional bodies; and (5) political instability.

The author also highlighted that the contribution of Yemeni accounting professional bodies is quite low in the accounting education in Yemen.

It is also revealed that the most prominent challenge facing AIS coordinators at various levels in the higher institutions is the ability to produce accounting graduates who will be able to work in the present technological environment (Chayeb & Best, 2005). The authors stated that the guidelines set by IFAC in year 2003 should be followed when developing AIS course content in order to achieve its desired objective. Thus, it is necessary to determine the level of professional bodies' involvement in the AIS course content. Although, the IFAC curriculum is already established, it is however difficult for the Iraqis to fully adopt it. This is due to the poor technological situation in Iraq because of the second Gulf war (Al-Sakaa, et al., 2007). A gradual approach is therefore needed in Iraq. This research aims to assist this process by determining the factors that are relevant to the AIS stakeholders in Iraq, including the Iraqi accounting professional body, namely, Iraqi Accountants and Auditors Association (IAAA).

The CPA Australia revealed that the role of the CPA as a professional body in making Australian higher education accounting curriculum to be at par with international standard is significant (Johns, 2002). Windeknecht, Kehoe and Tennent (2005) declared that professional bodies in Australia certainly play a significant role in ensuring that accounting education meets the requirements of increasing the use of technology in the profession. Carr and Mathews (2004) have supported this standpoint. The authors attributed the failure of New Zealand’s accounting curriculum to the reluctance of the

Institute of Chartered Accountants of New Zealand (ICANZ) positively contribute to the development of the curriculum, which resulted in the gap between academics and professional organizations. Implicit in this is the significant influence of the professional bodies in the AIS course content. Therefore, a clear definition of the professional goals isconsidered important in any professional course content (Tyler, 1949).

Calderon, Cheh, and Chatham (2002) and Cheh (2000) stated that global deficiency of AIS course content is due to the lack of input from the professional body. This highlights the important role of professional bodies in AIS course content. Sciulli and Sims (2008) revealed that the content specified by professional bodies determines the success of public sector accounting (PSA) education and other accounting courses. The interviewed academicians said that the accreditation given by the professional bodies is a way of improving the PSA. They also stressed the importance of collaboration between professional bodies and public sector employers in determining educational contents that need to be experienced by the undergraduates. This could also be applied to AIS education.

According to a report from the American Association of Advanced College School of Business (AACSB) (2009), the role of the accounting professional bodies in the accounting-related course content is highly needed to enable the course content to be designed in such a way that the required knowledge and skills for the accounting job can be achieved. This is considered important since the members of the professional accounting bodies are the stakeholders in the accounting job market as a whole.

To recapitulate, it is declared that professional bodies are the second element of this research conceptual framework. The educational standards proposed by the IFAC and Iraqi professional bodies are utilized in this research. This enables the comparison between international and local standards and eventually a suitable standard is proposed.

2.6.3Learning Environment

Practically speaking, it is difficult to separate a course from the environment in which it is going to be operated. The term 'learning environment' can be defined as the sum of the internal and external circumstances and influences surrounding and affecting an individual's learning (Al-Zubee, 2011). These circumstances consist of place design, type of educational equipment, technical devices and learning recourses. In addition, the natural effects in the classroom (temperature, humidity, and level of lighting) can be considered as external circumstances. On the other hand, the impacts of the lecturers inside the classroom play an important role as a part of the learning environment (Al-Zubee, 2011).

The general effect of environment on the course content was highlighted in the Chung and Davies' (1995) instructional theory for learners' control, where the authors considered condition variable as one of the variables affecting the learning process. The environment is identified as a sub-variable of the condition variable. This implies that the learning environment should be considered in any course content. This research adopts this axiom to see the relationship between learning environment and AIS course content. Similarly, Norris (2004) revealed that the society for whom the course is going to be implemented cannot be neglected so that its objectives can be met. The author argued that the course

should be designed in a way that it can adapt to the changes in the society. Abraham (2006) revealed that there are only a few studies focusing on the role of learning environment in accounting education as a whole.

Based on the above discussion, the researcher included learning environment in the conceptual framework and categorized it into three as follows: (1) current technological state; (2) learning approach; and (3) participatory learning and teaching method. The descriptions of each category are dealt with in the following three subsections.

2.6.3.1Current Technological State

Galbraith (2007) defined technology as the "systematic application of scientific or other organized knowledge to practical tasks". Phillips (2001) revealed that at various times in the history of education, technology has been introduced in the hope that it would enhance teaching and learning. Windeknecht et al. (2005) argued that the new technological innovations create a critical need to make learning environment more flexible. The authors argued that there is a relationship between the technological state and teaching strategy. These show how far the technological state influences learning environment. Similarly, Kimble (1999) highlighted that many researches uncovered that technology has a positive impact on students' learning.

Theuri and Gunn (1998) revealed that the technological environment of learning significantly influences the course content. This means that course content without

considering its technological environment is likely to negatively affect its effectiveness. The level of such influence is determined in this study.

According to O'Donovon (1996), the impact of dynamic IS environment on accounting information processing was not taken into consideration in the accounting curriculum. This can be considered as a deficiency since the understanding of the nature of IS and its development, use and control by the accountants, are important to provide relevant and reliable information (O'Donovon, 1996). However, this phenomenon varies from country to country based on the variation in the accounting policy (O'Donovon, 1996). For example, there is a variation in the technological environment between developed and developing countries, which could affect the implementation of a technology-driven curriculum. In short, there is a close relationship between technology environment and accounting curriculum development.

Bakar (2007) revealed that establishing a conducive learning environment to support IT-based learning is crucial in achieving learning objectives. This means that making AIS course content as IT-driven is a necessary requirement. The environment in which learning takes place must be supported by adequate IT infrastructure. This is a critical action since a course content is not considered as a good one until it is able to achieve its learning objectives (Chayeb & Best, 2005).

From the above discussion, it is clear that the influence of the current technological state on AIS course content is paramount. Thus, the current technological state is included in this research's conceptual framework.

2.6.3.2Learning Approach

Learning approach can be defined as a number of processes, which consist of relating, structuring, critical, and stepwise processing (Wierstra, Kanselaar, Linden, Lodewijks & Vermunt, 2003). The authors summarized this definition in two terms, i.e., 'constructive' and 'reproductive'. Learning is considered as 'constructive' when the processes of relating and structuring and critical processing play an important part. On the other hand, when the processes of memorizing and stepwise are central processes, the learning is considered as 'reproductive' (Vermunt, 1996; Vermunt, 1998). Biggs (1987) and Abraham (2006) revealed that there are three approaches to learning. The authors called the first as "Surface", the second as "Deep", and the last one as "Achieving". Additionally, Biggs (1987) provided a table, which explained these three learning approaches in terms of motive strategy, as shown in Table 2.1.

Table 2.1
Approaches to Learning in Terms of Motive and Strategy

Approach	Motive	Strategy
Surface	Instrumental: main purpose is to meet requirements minimally: a balance between working too hard and failing.	Reproductive: target limited to the bare essentials and reproduced through rote learning.
Deep	Intrinsic: study to actualize interest and competence in particular academic subjects	Meaningful: read widely, interrelate with previous relevant knowledge
Achieving	Based on competition and ego-enhancement: obtain highest grades, whether or not material is interesting	Based on organizing one's time and working space: behave as 'model student'

*Source: Abraham (2006) adopted from (Biggs, 1987, 11)

Although, several arguments have been made on the need to review the AIS course content in order to integrate IFAC recommendation in the course content development in

this information era (Bromson, et al., 1994; Collier et al., 1990; Harrison, 1994; Armitage & Boritz, 1986), not much is available on the learning approach. Discussing learning environment without considering learning approach is considered as a flaw. In this regard, Tella and Adu (2009) discussed the importance of making learning approach to be learner-centered for an IT-driven curriculum so that learning objectives can be achieved effectively. This means that using lecturer-centered approach in such a situation will be a big blunder (Tella & Adu, 2009). This approach will lead to poor levels of students' development learning abilities and skills (Vatanasakdakul & Aoun, 2011).

Wierstra et al. (2003) revealed that there is a positive relationship between learning environment and learning approaches, such that a change in one causes a change in the other. In other words, learning approach is an important element in achieving good course content. There is then a need to know the rate at which learning approach influences the AIS course content.

Jarnagin (2006) emphasized the importance of using an active learning approach by integrating accounting research in the accounting curriculum to improve the required skills. The author also noted that using an active learning approach offers an excellent way of developing skills such as critical thinking skills, written and oral communication skills, documentation and analytical skills. In addition, the students will be more informed about the General Accepted Accounting Principles (GAAP) hierarchy and research requirements of the new CPA exam. This means that learning approach should not be treated with levity when developing course content.

From the above discussion, it is clear that the role of learning approach as one of the elements of the learning environment in AIS course content is paramount. Therefore, the researcher includes learning approach as one of the learning environment elements in this research's conceptual framework.

2.6.3.3Participatory Learning and Teaching Methods

Kolb, Rubin, and Mantyre (1974) defined learning methods as "individually inherited the functions of particular past life experience and the demands of the present environment that emphasize on some learning abilities over others". In addition, Keefe (1979) defined learning methods as the "composite of characteristic cognitive, affective, and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment". Stewart and Felicetti (1992) defined learning methods as "those educational conditions under which a student is most likely to learn". Thus, learning styles are not really concerned with what learners learn, but rather how they prefer to learn.

Similarly, Neo (2005) observed that the awareness and the national interest of the Malaysian government to explore new information and communication technology to its fullest has changed the teaching approach in the country from the conventional lecturer-centered to the student-centered learning approach. Similarly, Canon and Newble (2000) and Harwood (1999) support this attitude. The authors revealed that the student-centered learning is mostly preferred in the teaching process. This enables Malaysia to effectively exploit the recent changes in the communication medium resulting from the national development in technology. In turn, this explains the importance of learning approach on

the course content, which is considered important in the case of Iraq, besides the current technological state of the country.

Manochehr (2006) highlighted that learning methods have a role in the development of educational courses. Taylor (2004) revealed that participatory learning and teaching method are beneficial to the process of developing effective course content. Participatory course content development process is a good approach since it enables the stakeholders to be involved in making vital decisions that can lead to good course content (Taylor, 2004).

Teaching methods can be defined as a way to provide, display and organize the information, attitudes and educational experiences to the learner, leading to the development of knowledge and skills (Haghighi, Vakil, & Wetiba, 2006). There are two common teaching methods, which are face-to-face teaching methods (this is considered as traditional methods, which focus on presenting information) and the second is e-learning methods (Alonso & Blazques, 2009; Bonk & Smith, 1998). Manochehr (2006) defined e-learning as using the web-based learning, computer-based learning, virtual classroom, and digital collaboration to learn. Based on the previous views about Iraqi technological state, the face-to-face method is the most popular teaching method that is used in the Iraqi HEIs, but several e-learning projects have taken off in a few departments of the HEIs (Elameer & Idrus, 2010).

McNaught (2002) revealed that the design of educational environment is based on the teaching and learning methods. Alonso and Blazques (2009) uncovered that nowadays the issues, which are related to the teaching methods, are paramount and the researchers are interested to do researches related to these issues.

Westrup (2010) highlighted the importance of participatory learning and teaching method in course content related issues since it allows the learners to combine with the teachers to renew the course. This will bring a great innovation, depth and relevance of learning (Westrup, 2010). As this research, aims to develop a conceptual framework for AIS course content for the Iraqi HEIs, participatory learning and teaching method are thus included in this research's conceptual framework.

From the aforementioned discussions, it is postulated that learning environment is the third element of this research's conceptual framework. It consists of the elements of current technological state, learning approach and participatory learning and teaching method.

2.6.4International Federation of Accounting Committee Recommendations

The whole world is driven by IT as a result of globalization. This has an effect on all human aspects of life. Chayb and Best (2005) uncovered that IFAC guideline has more focus on the IFAC recommendations that must be integrated into the AIS course content.The authors have declared that these recommendations centered on IT knowledge, which is important to be integrated in AIS course. Brynjolfsson and Hitt (2000) revealed that IT can be defined 'as computers as well as linked digital

communication technology, withthe broad power to reduce the costs of organization, communications, and information processing' (p.4). The word knowledge can be defined as the ability to explain the data and information through a process of giving meaning to these data and information; and an attitude purposes at desiring to do so (Beijerse, 1999). Therefore, IT knowledge can be defined as the capability to interpret data and information in computer environment as well as related digital communication technology, through a process to give meaning to these data and information with a reduction in the cost of coordination, communication, and information processing.

According to Roger (2003), technology components as technology clusters/groups consist of one or more obvious components of technology that are recognized as being strongly interconnected. General IT knowledge, IT control knowledge and competency, manager role competency, designer role competency and evaluator role competency are identified as general IFAC requirements in achieving a good AIS course content (Chayeb & Best, 2005). The authors stated that according to the importance, the management role has a low importance compared to the other items. Therefore, in this study, management role is not considered, while the system acquisition and development process in terms of required IT knowledge are captured as items under General IT knowledge. The IFAC has been acknowledged by quite a number of researchers as the main stakeholder in deciding what type of IT skills and knowledge needs to be integrated in the accounting curriculum (Chayeb & Best, 2005; Ismail & Salim, 2005).

The IFAC guideline that relates to IT knowledge components is coined as International Education Guideline Information Technology (IEG11) for professional accountants. The

guideline stipulates that major contents of AIS course must be IT-driven. It therefore means that determining the amount of IT knowledge to be included is essential when developing AIS course content (IFAC, 2006).

Cooper (2002) highlighted the necessity of using telecommunication, innovative, cognitive tools and other technologies to support learning in this globalization era. History has shown that among prominent users of IT are accountants and accounting professionals (McMickle, 1989). Based on all these, it is necessary to integrate IT knowledge component in the AIS course content so that the required IT competency and knowledge can be inculcated in the future accounting graduates.

Ismail and Salim (2005) uncovered that although IT knowledge and skills are important in accounting-related courses, the preparedness of accounting graduates to face challenges in the workplace is still low. This shows that there is a need to differentiate between IT knowledge components needed in the industry and those that are exposed to the students during the learning process.

According to Janicki et al. (2008), rapid changes in IT are not followed by necessary changes in IS curriculum. This is evident from the inability of the developers of IT-related academic programs to make the course content flexible enough to cope with the IT change. In this case, the authors identified the following problems: (1) how to maintain a balance between the knowledge for business schools graduates and technology skills desired; (2) How to balance training and certification desires of students with in-

depth knowledge of a topic area; (3) how to integrate the recent/current advances in technology into the course without eliminating the basic core knowledge; (4) how to meet the employers' needs in terms of the required IT skills; and (5) how to determine what forms of knowledge should be included in the basic IT courses. Providing answers to all these questions is essential to determine what IFAC recommendation should be integrated into AIS course content. Although, of the importance of the above questions, but in the case of Iraq, the integration of IT skills and knowledge in the AIS course content considered as a big challenge (Al-Sakaa, 2007). Therefore, this study focuses on the most important aspects that must be addressed in the field of information technology through AIS course content.

Chayeb and Best (2005) supported the view that the new generation of accountants requires sufficient IT knowledge and skills to add value to the organizational IS. The main issue is what aspect of IT should be included in the courses. To solve this problem, the aim of integrating IT into the accounting curriculum must be clearly defined. It is not to produce technically-minded graduates but hybrid accountants who are capable of evaluating IT issues (e.g., IT strategic alignment, IT value delivery, IT resource management, IT performance measurement, and risk management) when undertaking accounting tasks. In short, IT knowledge and skills need to focus on key topics, their business objectives and their business impacts (Boritz, 1999).

According to Tella and Adu (2009), integrating IT as a learning tool is characterized by the following advantages: (1) it offers efficient and effective access to digital information

which assists the students to achieve self- acquisition of knowledge; (2) it offers creative approach of learning and understanding of the learning areas; (3) it aids communication and collaborations among all the parties involved in the learning process; and (4) it helps in developing new thinking and learning skills. Thus, it is hard to develop good course content without integrating IFAC recommendation.

Paas and Creech (2008) emphasized the role of IT in course content from two main perspectives: (1) aid access to educational materials without any constraint to time and location; and (2) promotes an interactive learning approach. It can be seen that such roles cannot be neglected in this educational era. This supports the decision of the researcher to include IFAC recommendation in the proposed conceptual framework.

With the evidences from previous studies, as discussed above, the researcher therefore categorized the IFAC recommendation into three, i.e., IT competency, IT control knowledge and general IT knowledge. The description of each is offered in the following three subsections.

2.6.4.1Information Technology Competency

Johns (1995) defined competency as "particular types of job performance in terms of what is to be performed and how well a performance is to be constituted". According to the education committee in IFAC (1998), competency can be defined as the ability to perform the tasks and roles expected from a professional accountant, both of newly-qualified and experienced, to the standard expected by employers and the general public.

In 1999, the AICPA established a Core Competency Framework for Entry into the Accounting Profession, which is a comprehensive framework regarding the essential characteristics needed by entry-level accountants. It encompasses most of the earlier recommendations on program design in accounting (Bolt-Lee & Foster, 2003). According to Carr et al. (2006), the framework identifies three areas of competency, i.e.,: (1) functional competencies which refer to the decision modeling, risk analysis, measurement, reporting, research; (2) personal competencies including professional demeanor, problem-solving and decision making, leadership, communication, and project management; and (3) broad business-perspective competencies including strategic/critical thinking, industry/sector perspective, international/global perspective, resource management, legal/regulatory perspective, and marketing/client focus. Leveraging technology is common for all three competencies.

Andrews and Wynekoop (2004) argued that one of the challenges facing the AIS course content is the inability to make the course content flexible enough to integrate current IS tools and technologies with more professional applications. This is to ensure that accounting graduates will be able to face challenges in the workplace. The working environment is positively affected by the changes in IT (Andrews & Wynekoop, 2004).

It is revealed that good AIS course content cannot be established without integrating IT competency (Dillon & Kruck, 2008; Mounce et al., 2004). This calls for a new course content in an AIS that is able to meet the IT challenges. Thus, the researcher is interested in measuring the significance of IT in the development of IT-driven AIS course content

in Iraq so that it can be on par with international standards. It is necessary to see how the inclusion of IT competency in the AIS course content can either consciously or unconsciously make the learners acquire the minimum required IT skills by the profession.

The above discussion shows that IT competency is an element that influences the good AIS course content. Thus, IT competency can assist in preparing accounting graduates to face challenges in the workplace and need to be integrated in this research's conceptual framework.

2.6.4.2 Information Technology Control Knowledge

According to Fayol (1949), the control of an undertaking consists of seeing that everything is being carried out in accordance with the plan, which has been adopted, the orders that have been given, and the principles, which have been laid down. Its objective is to point out mistakes so that they may be rectified and prevented from recurring.

It is good to follow a standard in doing things for uniformity in the process. This is the reason why there are professional standards in virtually all the professions to be followed while discharging professional responsibilities. An example of such standards in accounting practice is the auditing method/standard. The first thing is to design a method of doing things and the other is to ensure that the methods are being practiced correctly (Milus, 2004). The author highlighted the importance of having standards that support the migration of the manual accounting activity to the automated version. migration from the

for the inclusion of IT control knowledge in the course content which is included in this research's conceptual framework.

To produce information-oriented accounting professionals, it involves not only possessing a sound business information requirement but also information processing capabilities so as to achieve and sustain competitive advantage in any organization they work with (Ismail, 2006). Thus, IT control knowledge that can deliver that objective needs to be integrated into the AIS course content.

According to Coe (2006), IT is recognized as an important concept that has changed the accounting profession. This creates the need to integrate IT auditing concepts in the accounting curriculum (IFAC proposes updated guidance for professional accountants on IT, 2006). The AIS course content is not the exception, whereby it must have IT auditing courses in its structure. This justifies the claims made by Dillon and Kruck (2008) and Mounce et al. (2004) that IT control knowledge should be the major factor to be considered when developing AIS course content. Thueri and Gunn (1998) supported this view by saying that the major cause of outdated AIS course content is lack of system skills flavor. Most of these skills are related to IT control knowledge. Therefore, IT control knowledge is considered very important in the AIS course content. To be in tandem with the previous studies, IT control knowledge is included in this research's conceptual framework.

Coe (2006) identified two major problems that are facing the inclusion of IT auditing knowledge in either accounting curriculum or AIS course content, i.e., inadequate supply of relevant textbooks and lack of qualified lecturers. In addition, Othman (2009) clearly revealed that the acceptance of including IT in accounting subjects like audit and control depends on the lecturer's skills related to the IT applications.

The researcher examines these two problems by including them in the items that measure the impact of IT control knowledge on reliable AIS course content.

2.6.4.3 General Information Technology Knowledge

Dahawy et al. (2005) stated that the impact of technological development can be linked with the individual, organizational and societal levels through the use of personal computers, the Internet, the world wide web, and other technological applications in different daily activities. The authors stressed that, at the professional level, the use of technological tools and applications, such as computers, internet, and different software applications have facilitated recording business transactions and calculations, while ensuring quality, speed and accuracy.

With each technological innovation, there are renewed expectations of increasingly higher skill levels needed to work effectively in society (Toffler, 1980). As Borthick and Clark (1987) revealed "as computing permeates organizations, the success of accounting graduates at all levels will increasingly depend on their ability to use computing to accomplish organizational objectives" (p.174). Many researchers argued that there is a

need to overcome the teaching of basic skills in computing and to introduce a conceptual approach to understanding IS (Armitage & Boritz, 1986; Bromson et al., 1994; Collier et al., 1990; Harrison, 1994). This is further supported by Meer and Adams (1996) who highlighted the need to concentrate more on the IT related content of the AIS course.

Wessels (2004) revealed that IFAC (1995) urged that professional accounting bodies across the world address IT changes through their educational processes by including coverage of important IT concepts and skills in prequalification education programs, prequalification work experience, and post-qualification professional education, in both general work domains and specialized areas.

According to Chayeb and Best (2005), the IFAC argued that part of the requirements for employing accounting graduates should be their ability to work in an IT environment by being equipped with general IT knowledge. This strengthens the need to include general IT knowledge in the AIS course content development conceptual framework.

Most of the professional tasks, both in the accounting firms and corporate organizations, are undertaken by using IT. Thus, it is not surprising to uncover that the first criteria that is considered by the employers when hiring accounting graduates is the possession of IT skills (Strong, Prtez & Busta, 2006). It is also uncovered that graduates in all fields of human endeavor should possess the basic knowledge of IS, in addition to other required skills, such as oral and written communication (Janicki et al., 2008). Bearing all these

literatures in mind, it is necessary for the AIS course content to be IT-driven. Thus, general IT knowledge is included in this research's conceptual framework.

From the aforementioned discussions, it is declared that IFAC recommendation is the fourth element of this research's conceptual framework. It consists of IT competency, IT control knowledge, and general IT knowledge.

2.6.5Instructors'Characteristics

It is important to consider the relationship between technology and teaching strategy because it will provide a better development of the accounting curriculum (Windeknecht et al., 2005). Groomer and Murthy (1996) observed from their empirical study that the characteristics of AIS lecturers have a positive relationship with the AIS course content. This shows that the ability of AIS course content in delivering its objectives is dependent on the instructors' characteristics. Groomer and Murthy (1996) stated that academic position, academic qualifications, institution of study, years of experience and research interest are the factors that determine AIS instructors' characteristics. This belief also supported by Chayeb and Best (2005). Thus, all these factors are embedded in this research's conceptual framework.

Al-Zeebary (2007) revealed that, because of technological development, the HEIs are providing faculty members with fundamental IT skills, which can give them flexibility in changing their teaching styles. Similarly, Boonmak (2010) and Mohammad (2007) considered the instructors' characteristics as one of the important elements, which play an

important role in the course content development process; thus, this factor cannot be ignored in any course content development.

In addition, Ismail and Salim (2005) highlighted the importance of instructors' role in determining the level of IT integration in the educational process, which course is one of the elements. It is uncovered that the lack of teachers' training is one of the greatest roadblocks to integrating IT into a school's courses. Moreover, the report explained that most of the schools in the districts expend less than 15% of their budget on teachers' training and development (Ismail & Salim, 2005).

Furthermore, Clark et al. (1995) conducted a study on the issues linked to the barriers facing the integration of IT in the teaching process. Their findings showed that academic staff are anxious about losing communication opportunities between academic staff and students, difficulties with infrastructure like inadequate facilities or poorly equipped teaching space, lack of knowledge and skills of staff, scarce technical support academic staff, a limitation in time, insufficient resources and the risks associated with implementing innovations in teaching.

Grossman et al. (2007) revealed that many educational reforms, like curriculum enhancement, fail to yield a positive outcome until many years of implementation. Such success delay is linked to inadequate preparation for effective implementation, which resulted from incompetent or change resistant instructors. Thus, this evidence serves as a justification of the instructors' characteristics as a moderating variable, since most of the

suggested changes to the AIS course content are based on the IT adoption and integration (Ismail & Salim, 2005).

Saloojee (2004) observed that the effectiveness of teaching is dependent on the perception of instructors on the subject being taught. In the same vein, many researchersrecognized the role of instructors' characteristics as a key factor that improves the integration of IT knowledge in any accounting course (Senik & Broad, 2011; Senik & Broad, 2008; Chang & Hwang, 2003). Based on the above argument, it is obvious that how important instructors' characteristics in developing the AIS course.

In a few words, based on the suggestion from the previous study (i.e., Grossman et al., 2007; Ismail & Salim, 2005; Clark et al., 1995) this study considered that instructors' characteristics have the major role in integration the IT knowledge in AIS course regarding to the ability and effort of the AIS instructors. Thus, as a first study which considered instructors' characteristics as moderate variable for the first time. This is considered as an important contribution in this study in order toprovidevaluableevidences to the related parties. Moreover, the instructors' characteristics as moderate variable enhance the relationship between IFAC recommendation (IT competency, IT control knowledge and general IT knowledge) and AIS course content in this research's conceptual framework.

2.7 Summary

In this chapter, a comprehensive explanation of the literature review is provided. The previous studies conducted in different places in the world are critically discussed and reported. The factors that are relevant to the Iraqi AIS course are summarized in a framework. The development of the research hypotheses is discussed in chapter three.

CHAPTER THREE

METHODOLOGY

3.0Introduction

This chapter discusses the framework and hypotheses of this research. The research framework is firstly dealt with, followed by the hypotheses development. In addition, a discussion about the research methodology is provided in this chapter. To help the reader to better understand this section, the research design is then presented, followed by sampling design and data collection procedures. Finally, this chapter argues in-depth how to measure the research variables by developing a research instrument based on the previous studies. This is followed by the questionnaire development. At the end of the chapter, the examination of content validity and reliability of the instrument are provided.

3.1Research Frameworkand Related Theories

This section discusses the development of the research framework and explains the theories related to this study.

3.1.1Research Framework

The development of a theoretical framework is considered as an important step in the research methodology since it clearly defines the directions and contributions of the study. The theoretical framework is an epistemology of constructivism that assumes a pluralist and relativist view of the reality (Guba & Lincoln, 1994). Sekaran and Bougie

(2010) defined theoretical framework as a logically developed detailed network of associations between the variables estimated, related to the problematic situation and identified through such processes as interviews, observations and literature review.

According to Cavana, Delahaye, and Sekaran (2001), research framework presents a model that defines the logical relationships among several factors that have been identified as important to the research problem. The authors also highlighted that the relationships between the factors flow logically from the documentation of previous researches in the problem area. This forms the basis for the construction of the research framework.

Based on the discussions in chapter two, this study intends to investigate four independent factors (employers' needs, learning environment, professional bodies and IFAC recommendation), one moderating variable (instructors' characteristics) and finally one dependent variable (AIS course content). Table 3.1 below shows the classification of research variables.

Table 3.1
Description of Research Variables

Independent factors	Moderating Variable	Dependent Variable
Employer's Need		
Professional Bodies		AIS Course Content
Learning Environment		
IFAC recommendation	Instructor's characteristics	

According to Theuri and Gunn (1998), it was revealed that AIS course content is important in this technological era to deliver the required knowledge and skills of an entry-level position in an automated accounting environment. Similarly, many researchers have pointed out employer concerns regarding the knowledge and skills that are required for entry-level professional accountants (Nelson, 1991; Weiss, 1987; Yaffe, 1989). All these are worthy of consideration in achieving a good AIS course content.

As mentioned in chapter two, it is clear that the inclusion of employers' needs is critical in order to achieve a good AIS course content (Dillon & Kruck, 2008; Grant, 2007; Kavanagh & Drennan, 2008; Kennan et al., 2008; Lee et al., 2002; Lee & Fang, 2008; Lightfoot, 1999; Noll & Wilkins, 2002). The researcher integrated three variables to operationalize employers' needs, i.e.: (1) core knowledge; (2) business environment knowledge; and (3) personal and interpersonal skills.

According to Saville (2007) and Carr and Mathews (2004), professional bodies have important roles in the process of AIS course content, since AIS course is based on professional needs. Chayeb and Best (2005) equally support this opinion. The authors highlighted the need to follow IFAC established guidelines when designing the AIS course. The guidelines provide a road map to the accounting department in the business colleges to improve their AIS course content. Al-Sakaa et al. (2007) stated that the IAAA, which is considered as a leading body for accounting professionals in Iraq, should be one of the main players in the process of developing AIS course content. In other words, the decision to include professional bodies in this study is based on the evidence

from previous studies that stress on the important role of professional bodies in AIS course content.

Additionally, a course content should be designed in such a way that can accommodate societal changes (Norris, 2004). The author revealed that it is unreasonable to neglect the environment in which courses are to be implemented. This is supported by Chung and Davies (1995) who considered the environment, in which a course is to be implemented, as a conditional variable, which influences the learning process as a whole.

Theuri and Gunn (1998) highlighted the significant influence of the technological environment on the course content. In line with this, Bakar (2007) explained that achieving learning objectives requires the learning environment to support IT-based learning. On the other hand, Tella and Adu (2009) argued that learning objective can be achieved in a more effective manner by considering learner-centered approach for an IT-driven course. Taylor (2004) revealed that participatory learning and teaching method are beneficial when achieving good course content. In short, it is stated that learning environment is one of the important factors in this research's conceptual framework. The researcher classified this factor into three variables, i.e.: (1) current technological state; (2) learning approach; and (3) participatory learning and teaching method.

Ismail and Salim (2005) highlighted the importance of IFAC recommendation in accounting related courses. The authors have declared that accounting graduates are still facing challenges in their workplace. Similarly, Janicki et al. (2008) revealed that the

rapid changes in IT are not being followed by necessary changes in IS courses. Andrews and Wynekoop (2004) equally argued that integrating the current IS tools and a technology with the more professional application is considered as one of the challenges facing the AIS course content. Similarly, Dillon and Kruck (2008) revealed that IT competency is one of the elements that should be integrated into AIS course content.

According to Mounce et al. (2004), IT control knowledge should be the major element in AIS course content. This is also supported by Dillon and Kruck (2008). There is a need to overcome the teaching of basic knowledge in computing and introduce the conceptual approach to understanding IS (Collier et al., 1990; Armitage & Boritz, 1986). All these highlight the importance of IFAC recommendation in the AIS course content, and thus are considered as the fourth factor of this research's conceptual framework. Based on the previous studies, the researcher categorized this factor into three variables, i.e.: (1) IT competency; (2) IT control knowledge; and (3) general IT knowledge.

Ismail and Salim (2005) mentioned that the level of IT integration in the educational process is dependent on the instructors' characteristics. This belief supported by Saloojee (2004). The authors highlighted that the efficacy of teaching relies on the perception of instructors on the topic being taught. Senik and Broad (2008) revealed that one of the important issues in integrating IT knowledge and skills in the accounting related courses is instructors' characteristics, which is excluded from the previous studies. In addition, Chang and Hwang (2003) highlighted the importance of the instructors' characteristics. In line with this, Senik and Broad (2011) confirmed that the instructors' characteristics

are hurdles in integrating IT knowledge in any accounting program. This explains how significant instructors' characteristics are to moderate the effect of IFAC recommendations on AIS course content.

The summation of the above discussion leads to the formulation of this research's conceptual framework, as illustrated in Figure 3.1.

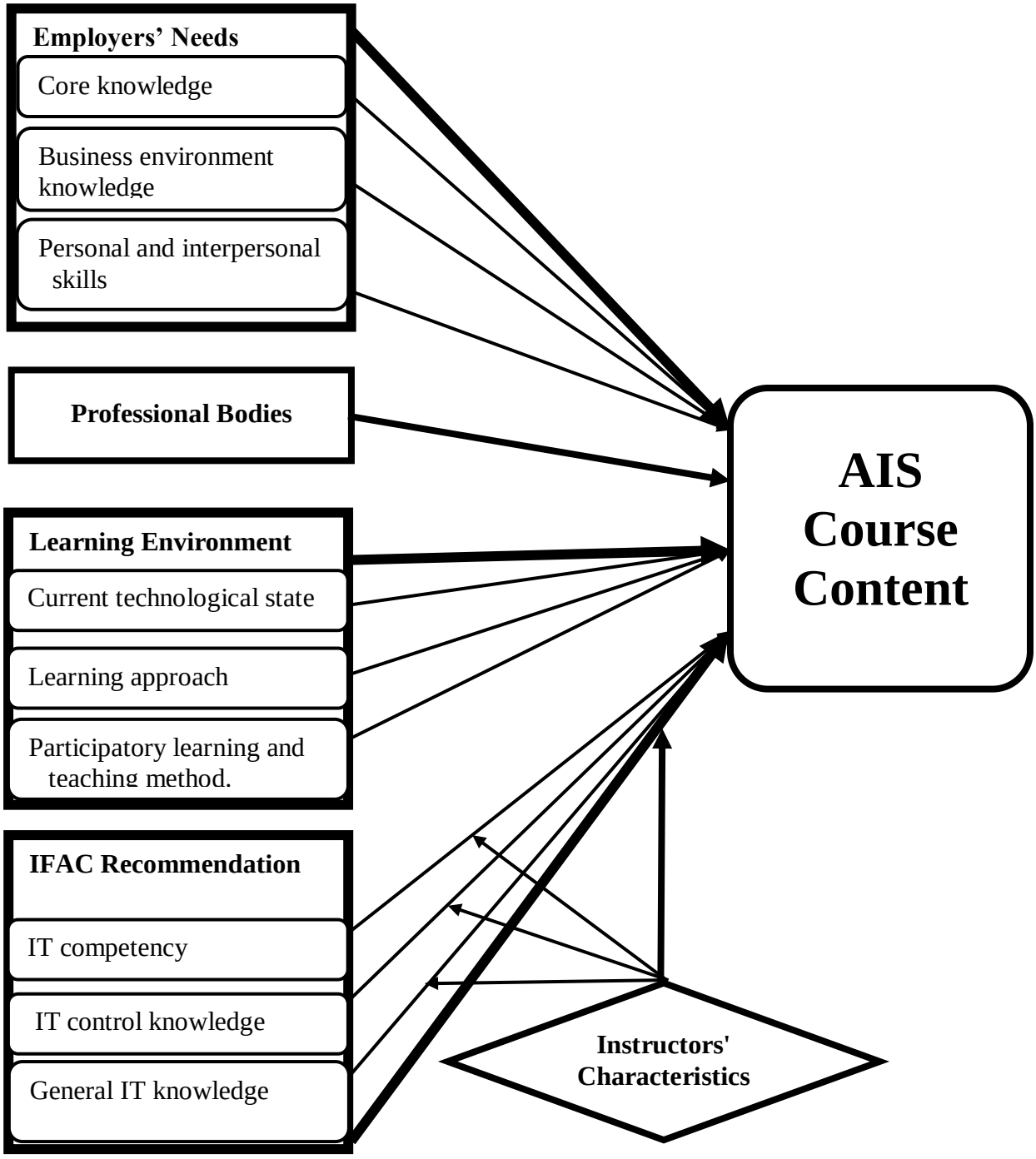


Figure 3.1
Conceptual Framework for Critical Success Factors of AIS Course Content in the Iraqi HEIs

The above conceptual framework is subject to the validation process. To undertake this, the survey approach was considered the most appropriate one. Its justification and rationale are offered in the research methodology section.

3.1.2Related Theory to the Study

Basically, four theories, namely Bruner's instructional theory, Mezirow's transformative learning theory, attribution theory, and task technological fit (TTF) theory were considered when developing this research's conceptual framework. The discussions are as in subsections 3.2.2.1 till 3.2.2.4.

3.1.2.1Bruner's Instructional Theory

Since the main aim of this study is to identify the factors that determine the critical success factors of AIS course content, it is beneficial to link the research objective with Bruner's (1960) instructional theory or curriculum theory (Lawrence, 1969). This was undertaken by comparing the guidelines of the theory with the nature of this study. The theory defines how growth and development are assisted by diverse means (Lawrence, 1969). This theory believes in first considering the ends and having identified the ends, develops the means of achieving the ends (Lawrence, 1969). In other words, the theory believes that the ends will justify the means. This is similar to achieving an effective AIS course content since the means (knowledge and skills required by the accounting graduates) determine the nature and content of the course.

There is no way the researcher can overlook instructional theory that was proposed by Bruner (1960). The instructional theory highlights eight guidelines, which are in one way,

or the other related to specific research variables in this study. Based on Lawrence (1969), the first guideline emphasizes the aim of schooling where it was stated that it is not the aim of schooling that really matters but the means for obtaining desired ends. This is related to this study, in the sense that, what is important is getting a good AIS course content as a means of producing knowledgeable and skillful accounting graduates. This really justifies the consideration of employers' needs and its integration in AIS course content.

Lawrence (1969) stated that the second guideline of instructional theory focuses on the prescription of the theory. It can be a set of rules for achieving the goals of knowledge and skills in advance. This is similar to this research's goal since the accounting graduates are supposed to be equipped with necessary AIS knowledge and skills required by the employer before graduating.

Lawrence (1969) declared that the third guideline of instructional theory emphasizes on experience, which they say is the best teacher. It has been proven that learning by doing is the best way of learning. How professional tasks are carried out needs to be practiced by the prospective accounting graduates right from the schools. Since the profession is now IT-driven, this justifies the inclusion of IFAC recommendation in this study and instructors' characteristics in terms of acquired experience to use these tools in educating the students.

The fourth guideline of the theory discusses the determination of ways by which the required knowledge can be structured for easy understanding and assimilation on the part

of the learners (Lawrence, 1969). This implies that a particular authority in the profession should be assigned such responsibility. Therefore, considering professional body in this study is related to the guideline of instructional theory.

As stated by Lawrence (1969), the fifth guideline talks about the interrelationship among the components of the course, which include the sequence of organizing the learning materials. In AIS, this is considered important in achieving an effective AIS course content since most of the contents are interrelated. The way knowledge and skills are related is essential and will determine which should be learnt first.

The sixth guideline argues the nature of rewards and punishment of learning and teaching. In other words, the instruction theory specifies the kind and degree of rewards and punishments in the process of learning and teaching. This implies that the professional ethics should be maintained and embedded in the prospective accounting graduates. This is surely the responsibility of the professional bodies. Therefore, this guideline can be linked to the importance of the accounting professional bodies as considered in this study.

The seventh guideline of instructional theory takes into account the variation in culture of the key players. This is highly related to one of the variables in this study, namely, learning environment, which has been hypothesized to have a significant effect on the AIS course content. It is equally related to instructional characteristics.

The last guideline of instructional theory states that it helps in defining the roles of the teacher: "it provides a yardstick for criticizing or evaluating any particular way of teaching" (Lawrence, 1969). This supports the belief of the researcher that instructors' characteristics will moderate the effect of IFAC recommendation on AIS course content.

The basis of the theory are the eight guidelines used in designing the theory and the researcher discovered that they are all in one way or another, related to this study. The summary of the argument is illustrated in Table 3.2

Table 3.2
Relationship Between Bruner's Curriculum Theory and the Study

Guidelines	Relationship with the study
For a theory of instruction, it is not the aim of schooling that really matters but the means for obtaining desired ends.	This is related to the study in the sense that, what are important in getting a good AIS course content are the knowledge/skills required by the employer and not the traditional accounting core knowledge.
A theory of instruction should be prescriptive so that it can set rules for achieving knowledge and skill goals in advance.	This is similar to the research goal since the accounting graduates are supposed to be equipped with necessary knowledge and skills required of them by the employer before graduating.
A theory of instruction should emphasize on experience.	This is also required of AIS course content if it has to be good.
A theory of instruction should be designed in such a manner that explains how a body of knowledge will be easily understood by learners.	It is very essential in instilling the professional knowledge required by the AIS area embedded in the accounting students who are the prospective accounting practitioner.
A theory of instruction should be able to explain the effective sequence of organizing the learning materials.	This is also essential in achieving an effective AIS course content since most of the contents are interrelated.
A theory of instruction should specify the kind and degree of rewards and punishments in the process of learning and teaching.	This will give the accounting students the opportunity to get familiar with the ethics of the profession which is limited and explain by the professional bodies.
A good instructional theory takes into account the variation in culture of the key players.	This is highly related to one of the variables in the study namely Learning environment which has been hypothesized to have a significant effect on the AIS course content.
A theory of instruction assists in defining the role of instructor.	This is in support with believed of the researcher that instructors' characteristics will moderate the AIS course content.

In summary, it is argued that the contents of the instructional theory are related to the AIS course content. This is because the contents emphasize the process rather than the technology. As has been argued by Scandura (1996), it is not cost effective if the instructional theory relies only on the technology. The researcher thus concluded that AIS

course content should contain detailed understanding and explanation of the instructional theory.

3.1.2.2Mezirow's Transformative Learning Theory

Cranton (1996) revealed that transformative learning occurs when educators critically examine their practice and develop alternative perspectives of understanding their practice. Therefore, it is essential that this becomes the role of professional development. With this taken into consideration, the role of professional development is to assist educators in bringing awareness to developing the mind when teaching (Cranton & King, 2003).

Cranton and King (2003) posited that the transformative professional development has many strategies, and one of these strategies is curriculum development. The authors explained that curriculum development creates the opportunity to connect theory and practice, and also introduce new teaching techniques.

Based on the above discussion, it is clear that Mezirow's transformative learning theory is useful to explain the relationship between the study variables. The theory is developed based on the need to develop students beyond the concept of knowing and doing. The theory is mainly on how individuals do away with the confusion and uncertainty that challenge tacit, being neglected (taken-for granted), personal philosophy of assumptions, beliefs, and values and wrestles with them in their environment of discourse to become more inclusive, open, permeable points of view (Mezirow, 2000). The theory is particularly propagated to develop hidden potentials of individuals who are involved in

the learning. This is a theory that supports transforming a biological being into a more useful personality. The theory is reported to be the most empirically researched theory appropriate for adult learning in higher institutions of learning (Mezirow, 2000). The applicability of the theory in this study can be seen from the inclusion of personal and interpersonal skills development needed in the courses. The creativity that is propagated in the theory is important towards developing a conceptual framework for a good AIS course content in Iraq.

3.1.2.3 Attribution Theory

Attribution theory is a dominant conception in the area of educational psychology, social psychology, and motivation (Weiner, 2000). According to Fatemi, Pishghadam,Asghari (2012), this theory was introduced by Heider and developed by other scholars including Kelley, Jones, Davis, and Weiner (Weiner, 2000; Feshbach, Weiner, & Bohart, 1996).

The study of attribution theory was initially related to Heider (1958). Later on Bernard Weiner (1986, 2000) developed a more comprehensive and extensive model of human attributions. A basic assumption of Weiner's model of attributions is that learners are affected by both environmental factors (e.g., characteristics of the school) and by personal factors (e.g., past experiences and prior knowledge). Weiner (1986) proposed four sets of attributions for people's success and failure in any aspects of life: ability, effort, luck, and task difficulty. The first two factors, ability and effort, are internal factors as they come from inside the person, while luck and task difficulty are forms of external attribution. The current study focuses on internal factors (ability and effort),

because these factors related to personal characteristics of instructors (Fatemi et al., 2012).

According to Sekaran and Bougie (2010), moderating variable exerts a strong contingent effect for a given independent-dependent relationship. Discussion in the previous section stresses the existence of the IFAC recommendation-AIS course association, because, IFAC recommendation variables have been found to be positively correlated with variables that measure AIS course content (Ismail, 2009; Chayeb & Best, 2005; Ismail & Salim, 2005).

The researcher argues that the attribution theory provides an important scheme for understanding the role of instructors' characteristics as a moderating variable of the relationship between IFAC recommendation variables (i.e., IT competency, IT control knowledge, and general IT knowledge) and AIS course content. This is due to the success of AIS course content depends on the ability and the effort of the accounting instructors. This viewpoint was supported by Al-Busisi and Al-Khafaji (2009) and Kashash and Al-Mosawee (2009). The authors revealed that the success or the fail of any educational course highly depend on the lecturers abilities/skills and efforts. In more specific details, the following arguments provide theoretical justification from attribution theory perspective that will enable us to understand who instructors' characteristics acts as a moderating variable between IFAC recommendation and AIS course content:

IT competency: Based on relevant literature, any AIS course content as dependent variable, which is positively influenced by IT competency (Dillon & Kruck, 2008; Carr et al., 2006; Mounce et al., 2004). However, academic staff abilities play a fundamental role in the course content development, particularly AIS course content (Groomer & Murthy, 1996). In addition, Ismail (2009) revealed that IT competency is influenced by the instructors' efforts and abilities. Thus, the relationship between IT competency and AIS course content has become contingent on the existence of instructors' characteristics as a moderator.

IT control knowledge: Many researchers emphasized on the importance of integration IT control knowledge subjects in the AIS course content (Mounce et al., 2004; Thueri & Gunn, 1998). However, in any educational organization many kinds of knowledge can be generated through the educational experiences of their instructors (Navaneedhan, 2011; Ojanen, 1993). Thus, the academic staff experiences cannot be ignored in developing any course content (Kashash & Al-Mosawee, 2009). Othman (2009) declared that the personal efforts of the academic staffs in practicing audit and control develop their knowledge and experience in this area. The author also clearly revealed that the acceptance of IT in accounting subjects like audit and control depends on the lecturer's abilities related IT applications. For this reason, the current study considered the instructors' characteristics as a moderator on the relationship between IT control knowledge and AIS course content.

General IT knowledge: Several researchers highlighted the importance of armed the accounting graduated with the general IT knowledge, which IFAC accentuated on the crucial role of the IT in developing accounting professional (Ismail, 2009; Chayeb & Best, 2005; Borthick & Clark, 1987). Equally, Ismail and Salim (2005) emphasized that the level of integration of IT related subjects in the accounting curriculum determined by the acceptance of accounting instructors. On the other hand, generally, the educators' potentials contribute in the process of developing any educational course content. More specific, in accounting course content, the instructors' effort and abilities contribute significantly in the process of the course content development (Taha, 2007). Based on this standpoint, the relationship between general IT knowledge and AIS course content also has become contingent upon the presence of instructors' characteristics. Thus, in this study, the researcher considers instructors' characteristics as a moderator variable on the relationship between general IT knowledge and AIS course content.

In a few words, based on the above-mentioned discussion, the attribution theory can clearly explain the role of the situational variable (instructors' characteristics) as moderator variable. Moreover, previous studies suggested examining this variable as moderating the IFAC recommendation-AIS course content relationship (Sinek & Broad, 2011, Ismail & Salim, 2005; Groomer & Murthy, 1996). Consequently, instructors' characteristics as a situational variable thought to be moderates the relationship of IFAC recommendation and AIS course content.

3.1.2.4Task-Technology Fit Theory (TTF)

According to Ismail (2009), the applicable theories for AIS research are drawn from a multidisciplinary area, which includes social sciences, management sciences, quantitative studies, human psychology and computer sciences. The choice of these theories varies from one domain of AIS research to the other. Parts of these theories are related to the IFAC recommendation construct in this study, i.e. the task-technology fit (TTF) theory. TTF is an IS theory developed by Goodhue and Thompson (1995). The theory is primarily designed to explain the usage of technology in performing a task by integrating the task characteristics and technology characteristics. This assists in estimating the extent to which the introduction of technology improves the task performance and the degree of utilizing such technology.

On the other hand, the theory operates on an individual performance threshold based on the introduction of IFAC recommendation in performing a specific task. Therefore, for this study, the researcher interpreted the findings from IFAC recommendation construct with respect to their impact in assisting the accounting graduate to perform better in technology-driven AIS job market. This explains the relationship between TTF and IFAC recommendation and the constructed items in the questionnaire.

This theory has been validated across a number of IS research domains with credible research outcomes (Fuchs, Hopken, Mirski, Lembcher, & Ainedter, 2007). In this study, the IFAC recommendation was subdivided into three variables, i.e., IT competency, IT control knowledge and general IT knowledge. The IT competency entails all forms of IT

knowledge that can make the accounting graduate to be capable enough in undertaking any AIS task-related activities. This is directly related to the performance impact constructed of the TTF since a technologically equipped worker is bound to perform better in IT-driven work environment. The general IT knowledge deals with all supportive knowledge that is required of anybody who is to use IT in his/her job. This relates to the utilization construct of the TTF since the expertise in the use of computer and other IT will facilitate efficient utilization of IT-related AIS tools. The IT control knowledge is related to both the performance impact and utilization construct since the extent to which this form of knowledge is possessed, will determine the manipulative tendency of accounting graduates when performing his or her job.

From the above discussion, it is clear that Bruner's instructional theory, Mezirow's transformative learning, and technology task-fit are the three theories related to the research framework. In the next section, the hypotheses development is discussed.

3.2Hypotheses Development

This section discusses the hypotheses of this research. The hypotheses are developed based on the conceptual framework illustrated in Figure 3.1. As discussed in chapter two and section 3.2.1, there are five variables, including the moderating variable that were investigated. The variables are as follows: (1) employers' needs (core knowledge, business environment knowledge, and personal and interpersonal skills); (2) professional bodies; (3) learning environment (current technological state, learning approach, and participatory learning and teaching method); (4) IFAC recommendation (IT competency,

IT control knowledge, and general IT knowledge); and (5) instructors' characteristics. The descriptions of the hypotheses for each element are offered in the following sections and subsections.

3.2.1 Employers' Needs

Employers' needs have been considered as an important element in any course since such strategy will increase the marketability of the graduates (Dillon &Kruck, 2008; Kennan etal., 2008; Kavanagh & Drennan, 2008; Lee & Fang, 2008; Janicki et al., 2008; Noll & Wilkins, 2002; Lee et al., 2002; Theuri & Gunn, 1998; Lee et al, 1995). It is an issue of interest in accounting related course on deciding what types of knowledge and skills among the core accounting knowledge, knowledge about the business environment, knowledge and personal skills with interpersonal skills, should be of preference, while considering the needs of employers. Based on this, the following hypothesis is formulated for this construct:

H1: The AIS course content in the Iraqi HEIs is influenced by the employers' needs.

3.2.1.1Core Knowledge

Lee and Fang (2008) highlighted the role of IS core knowledge which includes managerial knowledge and technical knowledge and they are considered as important elements in achieving a good IS course. Along the same lines, previous studies argued that the core knowledge is one of the key requirements in the entry-level for any IS job (Janicki et al., 2008; Kavanagh & Drennan; 2008; Chayeb & Best, 2005; Andrews & Wynekoop, 2003; Lee et al., 2002; Meer & Adams, 1996). In addition, the authors

explained that the core knowledge is one of the employers' needs to recruit the new IS graduates. Therefore, the researcher intended to examine whether core knowledge should be stressed to fulfill employers' needs in Iraq. Thus, the following hypothesis is proposed:

H1-1: The AIS course content in the Iraqi HEIs is influenced by the core knowledge.

3.2.1.2Business Environment Knowledge

Noll and Wikins (2002), Cappel (2002), Lee et al.(2002) and Tang *et al* (2001) mentioned that traditional IS course content does not fulfill the present job requirements because of the dynamic nature of the IS jobs. The authors argued that IS course content should be able to explain the relationship between IS and business environment knowledge. Al-Baraznjee and Kader (2007) and Trauth et al. (1993) stated that there is a need to make communication between the universities and the business organizations to help the educational institutions to improve the IS course content in order to prepare the students to face the real life situation. Following these findings, among others, the impact of the business environment knowledge on the AIS course content in the Iraqi HEIs is argued to be critical. Thus, the following hypothesis is developed:

H1-2: The AIS course content in the Iraqi HEIs is influenced by the business environment knowledge.

3.2.1.3Personal and Interpersonal Skills

Lee and Fang (2008),Janicki et al. (2008) and McMurtrey et al. (2008) revealed that there is a similar perception by both the employers and the students about the knowledge and skills that are required in the entry-level job. On the other hand, Tang, et al. (2001) and Dalal (1994)explained that team skills, communication skills, critical thinking skills, personal motivation, and creative thinking, as both personal and interpersonal skills, are required for any entry-level job. Therefore, it is quite interesting to examine the impact of personal and interpersonal skills as one of the employers' needs in achieving a good AIS course contentin the Iraqi HEIs. Therefore, the following hypothesis is proposed:

H1-3: The AIS course contentin the Iraqi HEIs is influenced by the personal and interpersonal skills.

3.2.2Professional Bodies

The importance of professional competence on the job performance of accounting related graduates has been stressed by a number of authors (such as Barley & Orr, 1997; Mirris & Hall, 1996).

Accounting information is a professional discipline, which requires the contributions from the bodies controlling and managing the profession on issues that have to do with course content in this field (Saville, 2007; Chayeb & Best, 2005; Carr & Mathews, 2004; Johns, 2002). In turn, this study attempted to examine the professional bodies' role in

AIS course content in the Iraqi HEIs. This leads to the formulation of the following hypothesis:

H2: The AIS course content in the Iraqi HEIs is influenced by the professional bodies.

3.2.3Learning Environment

Since a course cannot be separated from the environment in which it is going to be delivered, quite a number of researchers have revealed the need to consider the learning environment while developing a course (Abraham, 2006; Norris, 2004; Archie, 2003; Kämäräinen & Streumer 1998; Chung & Davies, 1995). The researcher was interested to examine the elements of the learning environment on AIS course content, namely, current technological state, learning approach and participatory learning and teaching method. This leads to the formulation of the following hypothesis:

H3: The AIS course contentin the Iraqi HEIs is influenced by the learning environment.

3.2.3.1Current Technological State

According to Abu Baker (2007), the importance of making AIS course IT-driven in this globalization era. Similarly, Theuri and Gunn (1998) highlighted that there is a significant influence of technological environment when developing any course. Bakar (2007), Chayeb and Best (2005), Windeknecht et al. (2005), and Kimble (1999) revealed the importance of considering the state of technological environment on AIS course content. Therefore, the impact of the current technological state in terms of the learning

environment on AIS course content in the Iraqi HEIs was examined in this study. Thus, the following hypothesis is formulated:

H3-1: The AIS course contentin the Iraqi HEIs is influenced by the current technological state.

3.2.3.2Learning Approach

Tella and Adu (2009) argued that one of the important things that revolve around making learning process to be learner-centered, especially when the course is IT-driven, is the approach. This is to assist in achieving learning objectives effectively. Similarly, Wierstra et al. (2003) highlighted a positive relationship between learning environment and learning approach in the implementation of a course. In addition, many researchers highlighted the importance of considering learning approach in developing any course content (Jarnagin, 2006; Canon & Newble, 2000; Harwood, 1999).Based on these discussions, the proposed hypothesis is formulated, which is to examine impact of learning approach on the AIS course content in the Iraqi HEIs:

H3-2: The AIS course content in the Iraqi HEIs is influenced by the learning approach.

3.2.3.3Participatory Learning and Teaching Method

Westrup (2010),Manochehr (2006), and Taylor (2004) contended that designing a good AIS curriculum requires the careful study of the kinds of learning and teaching methods that are currently being used. McNaugh (2002) also said that the design of the learning environment is influenced by the type of teaching methods adopted. Westrup (2010) and

Manochehr (2006) highlighted that another way towards achieving good course content would be via participatory learning and motivation of the people involved in making decisions. Thus, this study is interested to look into the role of participatory learning as well as teaching methods employed in the design and AIS course content in the Iraqi HEIs. The formulated hypothesis is as follows:

H3-3**:** The AIS course content in the Iraqi HEIs is influenced by the participatory learning and teaching method.

3.2.4International Federation of Accounting Committee Recommendation

As it is recommended by IFAC, it is quite difficult to separate IT from the educational process in this information age (Chayeb & Best, 2005). The impact of IT in accounting-related course has been considered by a number of researchers (Tella & Adu, 2009; Janicki et al., 2008; Ismail & Salim, 2005; Cooper, 2002; Boritz, 1999). There are three variables of IFAC recommendation, namely, IT competency, IT control knowledge and general IT knowledge. The description of these three variables and the hypotheses developed for them are offered in the following three subsections. Before that, the following hypothesis is proposed:

H4: The AIS course content in the Iraqi HEIs is influenced by the IFACrecommendation

3.2.4.1Information Technology Competency

According to Andrews and Wynekoop (2004), the important challenges facing the AIS course content is the inability to make the course content flexible enough to allow the

integration of current IS tools and technologies with more professional application. Integrating IT in AIS course is critical to ensure that accounting graduates are qualified to enter the job market and face the challenges. Dillon and Kruch (2008) and Mounce, et al. (2004) revealed that a good AIS course content cannot be established without integrating current IFAC recommendations; hence the need for IT competency to be inculcated. This also was supported by Al-Baraznjee and Kader (2007). Thus, the researcher tried to examine the influence of IT competency on the AIS course content in the Iraqi HEIs. To achieve this, the following hypothesis is proposed:

H4-1**:** The AIS course content in the Iraqi HEIs is influenced by the IT competency.

3.2.4.2Information Technology Control Knowledge

Coe (2006) revealed that IT is recognized as an important concept that has changed the accounting profession. He argued that it is important to integrate the concept of IT auditing in the accounting curriculum. The same thing could be applied to AIS course content. In other words, AIS course content should integrate the IT auditing course. Armitage and Boritz (1986) stated that the importance of IT in auditing jobs is recognized by the U.S.A General Accounting Office (GAO) and the National State Auditors Association (NSAA). Their main role is to help the government agencies build audit capabilities to face the increasing dependence on IT. Mounce et al. (2004), Thueri and Gunn (1998) and Brown, James, and Balke (1983) highlighted that IT can represent a key factor in an auditor's assessment of financial reporting controls. Thus, the researcher tried to examine the role of IT control knowledge in the AIS course content in the Iraqi HEIs. Therefore, the following hypothesis is formulated:

H4-2: The AIS course content in the Iraqi HEIs is influenced by the IT control knowledge.

3.2.4.3General Information Technology Knowledge

Chayeb and Best (2005) and Borthick and Clark (1987) revealed that the IFAC emphasizes the IT knowledge of accounting graduates so that they can work in IT environment. Therefore, it is not surprising to uncover that the first criteria being considered by the employers when recruiting graduates is IT knowledge (Bromson et al, 1994; Harrison, 1994; Collier et al., 1990; Armitage & Boritz, 1986). The researcher was interested in examining the impact of general IT knowledge on the AIS course content in the Iraqi HEIs. Hence, the following hypothesis is formulated:

H4-3: The AIS course content in Iraqi HEIs is influenced by the general IT knowledge.

3.2.5 Instructor's Characteristics

In order for any course objectives to be achieved, it must be delivered well (Groomer & Murthy, 1996). Accordingly, several works have been conducted to highlight the importance of instructors' characteristics when developing the course content (Grossman et al, 2007; Chayeb & Best, 2005; Groomer & Murthy, 1996).Senik and Broad (2008), Ismail and Salim (2005) and Chang and Hwang (2003) studied the role of the instructors in integrating IT in the teaching methodology of AIS. In this study, the researcher took two steps: firstly, the researcher tried to investigate the relationship between the instructors' characteristics and AIS course content. Next, the researcherinvestigated the

moderating influence of instructors' characteristics between IFAC recommendation and AIS course content. Based on the above discussion, the following hypotheses are proposed:

H5: The influence of IFAC recommendation on AIS course content in the Iraqi HEIs is moderated by theinstructors' characteristics.

H5-1**:** The influence of IT competency on AIS course content in the IraqiHEIs is moderated by the instructors' characteristics.

H5-2: The influence of IT control knowledge on AIS course content in theIraqi HEIs is moderated by theinstructors' characteristics.

H5-3: The influence of general IT control knowledge on AIS course content in the IraqiHEIs is moderated by theinstructors'characteristics.

Table 3.3 shows the relationship between the research questions and the research hypotheses. This is to assist in understanding how the researcher answered the research questions.

Table 3.3
Summary of Research Hypotheses

R.Q.	Hypo.	I.V.	Moderate V.	D.V.
RQ 2	**H1**	Employers' needs		AIS course content
	H1.1	Core Knowledge		AIS course content
	H1.2	Business environment knowledge		AIS course content
	H1.3	Personal and interpersonal skills		AIS course content
	H2	Professional bodies		AIS course content
	H3	Learning environment		AIS course content
	H 3.1	Current technological state		AIS course content
	H 3.2	Learning approach		AIS course content
	H 3.3	Participatory learning and teaching method		AIS course content
	H4	IFAC Recommendation		AIS course content
	H 4.1	IT competency		AIS course content
	H 4.2	IT control knowledge		AIS course content
	H 4.3	General IT knowledge		AIS course content
RQ3	**H 5**	IFAC Recommendation	Instructors' characteristics	AIS course content
	H5.1	IT competency	Instructors' characteristics	AIS course content
	H5.2	IT control knowledge	Instructors' characteristics	AIS course content
	H5.3	General IT knowledge	Instructors' characteristics	AIS course content

3.3Research Design

Sproull (1995) defined research design as a plan for conducting research, which usually includes specification of the element to be examined and the procedures to be followed**.** Similarly, Zikmund (2000) described research design as a master plan specifying the techniques and procedures for collecting and analyzing the needed information, whichis considered important in any research. Kumar (1996) explained that there are two main

components of a research design: (1) procedure identification or/and development and any arrangement necessary to commence the study; and (2) assurance that validity, objectivity, and accuracy are achieved through careful planning of research procedures. The significance of having a proper design of a research cannot be denied as reported by many researchers. The following section discusses types of research design in detail.

3.3.1Types of Research Design

Sproull (1995) highlighted three main types of research design: (1) experimental design; (2) non-experimental design or descriptive research design; and (3) historical design. The experimental design is an attempt by the researcher to manipulate or control the independent variables so that the effect of dependent variables can be identified (Sproull, 1995). Leedy and Ormrod (2005) mentioned that the reason of employing this research design is to determine the cause and effect relationship. On the other hand, there are two groups of the experimental design: (1) true experimental design; and (2) quasi-experimental design (Sproull, 1995). The author stated that the true experimental design has maximum control over the design and is associated with the following four characteristics: (a) subjects randomly assigned to treatment; (b) requires minimum two comparison groups; (c) manipulate independent variable; and (d) impose measure on subjects. The quasi-experimental design should possess characteristics (c) and (d), but may or may not possess characteristics (a) and (b).

The non-experimental (descriptive) research design has lower control over the variable and subject of the study as compared to experimental design so that the researcher can

control the measures of the study (Sproull, 1995). The author explained that the benefits of this type of research design are more obvious when the research is conducted in a natural setting without any test, which in certain cases, is not feasible due to time and high costs involved. The purpose of this type of design is mostly to observe the association or the relationship among variables and not to determine the cause and effect relationship (Sproull, 1995). Therefore, the research design to be adopted in this study is non-experimental in nature because it investigates the relationship between course content critical success factors and AIS course content in Iraqi HEIs.

According to Sproull (1995), the historical design is another type of research design. In this type of research design, the researcher has less control over the data collection instruments since past data is used, and it cannot be changed. The purpose of this type is to examine the relationship among the variables using past data (Sproull, 1995). Leedy and Ormrod (2005) revealed that the advantage of using presented data is that the researcher is able to describe the historical events that have happened according to the sequence of events and see the patterns that hold them collectively. The authors suggested that the heart of the historical design method is how it provides meaning to the interpretation of the data or facts.

Based on the above discussions, it is clear that this study employs non-experimental research design since there is no manipulation or control over the involved independent variables when determining their effect on the dependent variable. The researcher was interested in gathering information about the current state of AIS courses content,

additionally to examine the influence of employers' needs, professional bodies, learning environment, the IFAC recommendation (within the moderating effect of instructors' characteristics) on AIS course content. In short, the non-experimental research design using a survey approach for data collection purposes is appropriate for this study.

3.3.2The Quantitative Design

The quantitative research approach is considered suitable for this kind of exploratory study since the study relies so much on literature review. Creswell (2008) listed the features to be considered when choosing an appropriate research approach (Table 4.1). It can be concluded that this study exhibits all the features associated with a quantitative study and that led to the adoption of quantitative approach in this study.

Table 3.4
*Characteristics of Quantitative and Qualitative Approach**

Characteristics of Quantitative research Approach	Characteristic of Qualitative research Approach
It is majorly description and explanation oriented.	It is Exploratory and understanding oriented.
Literature review plays major role in justifying research problem and recognizing the need for the study.	Literature review plays minor role in justifying research problem.
The research purpose is usually specific, narrow, measurable and observable data is employed.	The research purpose is general and broad and data are in form of participant's experiences.
Data collection is done with predetermined instrument, such data is numeric and usually from large number of individuals.	Data cannot be predetermined; it is either collected in text or image form and usually from small number of individuals or sites.
The data collected is analyzed using statistical method and interpretation is achieved by describing the trends or relationship among variables and the findings is compared with predictions from past studies.	The data is analyzed using text analysis for description, analysis and thematic development. It represents the larger meaning of findings.
Standard and fixed method of reporting and evaluating research and the result is objective and unbiased.	Flexible way of presenting research report which is usually biased and reflexive.

* Source: Adopted from (Creswell, 2008, p23)

3.3.3Research Equation

The research equation is formed based on regression statistical techniques since it is the best way to describe the relationship between a dependent variable and one or more independent variables (Creswell, 2008). This is achieved using the regression lines, which stand for the "best fitting" represented by X-Y coordinates. The Y stands for the dependent variable while the X stands for the independent variable(s). The relationship is defined in terms of predictive tendency of Y by X. The relationship is mathematically defined as follow:

$Y = \alpha + \beta X$

Where Y denotes the predicted value of the dependent variable
X denotes the value of the independent variable X
β denotes the regression coefficient defined by the gradient and
α denotes the value of the Y intercept.

It is usually multiple regression that describes the relationship between one dependent variable (Y) and a number of independent variables (X1, X2,.. Xn) where n is the number of independent variables involved. Multiple independent variables are employed to simultaneously predict the dependent variable with a general mathematical equation presented as follows:

$Y = a + \beta 1X1 + \beta 2X2 + \ldots + \beta nXn.$

The predictive tendency of each independent variable is evaluated using the coefficient of the individual independent variable. This is presented in both magnitude and direction as the signs indicate either positive or negative relationship. A coefficient value close to zero signifies little effect on Y.

For a given value of X, the coefficient b allows the prediction of the resulting change in Y. The amount of variation explained by the independent variables is called the coefficient of determinants, or R^2. This explains the percentage of variance explained by the independent variables. Based on the research conceptual framework, the research variables are labeled as follow:

Y denotes AIS course content

X1 denotes Employers' Needs

X2 denotes Professional Bodies

X3 denotes Learning Environment

X4 denotes IFAC recommendation

X5 denotes instructors' characteristics

Then the following regression equation is formed for the study:

$$\mathbf{Y = \alpha + \beta\ 1X1 + \beta\ 2X2 + \beta\ 3X3 + \beta\ 4X4 + \beta\ 5X5 + \beta\ 6(X4*X5) + residual}$$

After defining the research equation for this study, in the next section, the researcher provides a discussion about the sampling for this study and also the research activities ..

3.3.4Research Sampling

According to Sakaran and Bougie (2010), the sample is a subset of the population, which the authors defined as the "entire group of people, events, or things of interest that the researcher wishes to investigate". However, studying the research sample will enable the researcher to point out the conclusions that are generalizable to the population of interest.

In the previous AIS studies, some of the researchers mentioned that the sample in their research included the recruiters and the senior students (Lee & Fang, 2008). Othersmentioned that their samples included the employers and the lecturers (Theuri & Gunn, 1998). The sample for this study was drawn from one type of respondents who are interested in the AIS course in Iraqi HEIs, since the aim of this study was to determine

the critical success factors that influence AIS course content in Iraqi HEIs. Moreover, the MHESR in Iraq allowed the lecturers in all the scientific departments in Iraqi universities to update the curriculum (in the range between 10% - 20%) concerning the new changes (MHESR, 2010)[6]. Although these attempts were disorganized, but it justifies that lecturers are the most involved in choosing the factors that are most imperative to determine the critical success factors related to the AIS course content.

According to the user guideline[7] in the Iraqi HEIs, the number of accounting departments was 34 in the year 2010 – 2011 (MHESR, 2010). The guideline also showed that the numbers of the accounting lecturers were 526. In addition, the guideline declared that around 130 accounting lecturers were specialist in AIS. In considering this, the research sampling consists of accounting lecturers, which were interested in the AIS (i.e., AIS specialist or lectures of AIS subjects) as key respondents (following Heagy & McMickle, 1988; Wn, 1983). Moreover, the researcher selected the specialist or lecturers of AIS as main respondents because they are considered as the most important element when it comes to making course-related decisions since they work with the course. Therefore, they are the best group who can identify the factors that should be considered in determine the critical success factors related to the AIS course content in the Iraqi HEIs.

Krejcie and Morgan (1970) stated that for a population of more than 500 cases, the sample size should be at least 217 cases. This also supported by Cohen, Manion, Morrison, and Morrison (2007), and Cavana et al. (2001). In doing so, this study

[6] Please refer to Appendix E-4

[7] It is an annual booklet which is issued by the Ministry of Higher Education and Scientific Research in Iraq to assist the students that are graduating from the secondary school to choose their suitable college according to their CGPA.

depended on simple random sampling technique to distribute the questionnaires to the targeted respondents. In the next section, the researcher discusses the data analysis for each variable in the research framework.

3.4Research Activities

In this section, the researcher identifies the research activities, including the research instrument development, primary data collection, and data analysis techniques. Discussions about research activities are offered in subsections 4.5.1 till 4.5.3.

3.4.1Research Instrument Development

For collecting the data, this study adopted a questionnaire as the research instrument. The questionnaire is considered as a common tool in survey research used for collecting data in the IS research (Ismail, 2004; DeVaus, 1986). In this study, a questionnaire was developed from previous researches. Section 3.7 discusses the research questionnaire development in detail.

3.4.2 Data Collection

The primary data collection process started on 23th of September 2010 by obtaining a letter[8] from the College of Business in Universiti Utara Malaysia. In addition to this, and because the researcher was one of the academic staff in the College of Administration and Economics at University Salahaldin-Hewler, a letter[9] was also obtained from the College of Administration and Economics on 3th November 2010. The questionnaires

[8] Refer to Appendix E-1 for letter obtained from COB
[9] Refer to Appendix E-2 for letter obtained from College of Administration and Economic

were collected using off-line survey method where the researcher gave the questionnaire to the respondents by hand. This method was considered more suitable for collecting primary data in quantitative study since the researcher has the opportunity to explain the instrument (Ismail, 2004; Sekaran, 2000). The following benefits can be gained: (1) it allows the researcher to explain the concept to the respondents in a clearer way; (2) it gives a high response rate since the researcher waits to collect the administered questionnaire; and (3) it encourages more effective responses (Zikmund, 2003; Sekaran, 2000). In tandem with Sudman and Bradburn (1982), the researcher decided to use a booklet type of questionnaire. The benefits of using booklet questionnaire are as follows: (1) prevents pages from being lost or misplaced; (2) makes it easier for the respondent to turn the pages; (3) looks more professional and is easier to follow; and (4) makes it possible to use a double page format for questions about multiple events or persons.

3.4.3Data Analysis Techniques

Prior to data analysis, test for normality and outliers' assessment were conducted. Five different analyses, namely, descriptive statistics, factor analysis test of difference, correlations, multiple regression analysis test and hierarchical multiple regression analysis test were conducted to provide answers for research objectives.

3.4.3.1Test for Differences

Barclay, Todd, Finlay, Grande and Wyatt (2002) defined non-response bias as the kind of bias that occurs when some subjects choose not to respond to particular questions and when the non-responders are different in some way (they are a non-random group) from

those who do respond. In this study, the test for differences was conducted to test the differences between the early and late responses to ensure there was non-response bias in this study.

3.4.3.2Descriptive Statistics

Descriptive statistics were undertaken to provide background information of the respondents. According to Pallant (2007), descriptive statistics aim to: (1) depict the different attributes of the data; (2) verify any violation of the principal assumptions for the statistical methods to be used in the study; and (3) address a particular research question.

In this study, the descriptive statistics were undertaken using central tendency and variation statistics, such as means, ranges and standard deviation. Frequencies, percentages and relevant charts were also computed for nominal scale data. In addition, this type of analysis was conducted to see how far this study is useful by asking the respondents a question about the current state of AIS course content.

3.4.3.3Factor Analysis

Hair, Money, Page, and Samouel (2007) described factor analysis as a method used to reduce a large number of variables by combining the related variables together in a factor. As mentioned earlier, there are no identified factors for the AIS course content, and this research intends to identify the critical factors of the variables included in the research conceptual framework. Therefore, factor analysis was necessary. This technique is designed to test whether one group is significantly different from another (Pallant,

2007). The author argued that factor analysis takes a large number of items and looks for a way that the data may be reduced by using a smaller set of items. After factor analysis, reliability test was conducted. Hair et al. (2006) defined reliability as the extent to which a variable or set of variables is consistent with what it is intended to measure. As a result, the importance of conducting the reliability test is to assess the goodness of the measurement, and also to determine the internal consistency of the measurement items. Cronbach's alpha value that ranged from 0 to 1 is the most widely used measurement for the reliability (Hair et al., 2010).

Factor Analysis Assumption

To apply factor analysis, there are three important assumptions that should be considered. The first one is related to the sample size. Hair et al (2010) argued that the acceptable ratio between items to be analyzed and sample size is 1:10. This means that the sample size should be ten times more than the items in the instrument for each factor test. Gorsuch (1983) and Kline (1974) argued that the acceptable number of sample size is 100 cases even though the number of variables is less than 20. This is supported by MacCallum, Widaman, Zhang and Hong (1999).

The second assumption is the factorability of the correlation matrix. This assumption suggests that the correlation matrix requires adequate substantial correlation. There are three common tests employed to factorability secretion of the correlation matrix, namely, Kaiser-Meyer-Olkin (KMO) that measures sampling adequacy, Bartlett Test of Sphericity (BTS) and Measure of Sample Adequacy (MSA). These three tests were used to

determine whether factor analysis can be conducted on the variables. For the KMO, a value of more than .5 is required in order to fit in factor analysis. The values of MSA are as illustrated in Table 3.5.

Table 3.5
The Value and Grade for MSA

MSA Value	Grade
Above .8	Meritor
Above .7	Middling
Above .6	Mediocre
Above .5	Miserable
Less .5	unacceptable

The last assumption is concerned with the type of data used in factor analysis. Hair et al. (2006) highlighted that the data for factor analysis should be a metric measurement. In this study, all the variables for factor analysis adopted metric scale.

Factor Analysis Procedures

According to Pihlajamäki, Gylling, Miettinen, and Laakso (2004), there are three main steps for conducting factor analysis, the first step, determining the factor loading to obtain the initial factors in this step the following requirements should be fulfilled: (1) factor loading, based on Hair et al (2006); the factor loading in this study should be .45 or more; (2) there is no cross loading in any item between the components; and (3) each component should have more than one item. The second step is rotation of components resulting in elucidation of factors. The final step is interpretation and labeling the new factors based on their components to give meaning to the new factors.

3.4.3.4Correlation Analysis

According to Hair et al. (2010), correlation analysis is described as the assessment of the relationship between two variables. This study aims to investigate whether there is a relationship between different variables, namely, AIS course content as a dependent variable and employers' needs, professional bodies, learning environment, IFAC recommendation as independent factors and instructors' characteristics as moderating variable.

Healy (1984) argued significant tests are designed to detect non-random relationships, while, measures of association are designed to quantify the strength (or importance) of a relationship. Baba (2004) stated that measures of association are useful because they can assist researchers in accomplishing important scientific goals. Moreover, Al-Arussi (2008) revealed that measures of association can increase our understanding on the causal relationships among variables and improve the ability to predict from one variable to another.

Guilford and Christensen (1973) provided a guide in the interpretation of the power of relationship between two variables. This guideline is known as Guilford's rules of thumb. Table 3.6 below shows the Guilford's rules of thumb.

Table 3.6
Guilford's Rules of Thumb

R	Strength of Relationship
< .20	Almost Negligible Relationship
.21- .40	Low Correlation; definite but small relationship
.41- .70	Moderate correlation: Substantial relationship
.71- .9	High correlation; marked relationship
> .90	Very high correlation; very dependable relationship

In line with Miles and Shevlin (2001), correlation analysis was conducted in this study for the purposes of: (1) determining the direction of the relationship between the variables; (2) determining the strength of the relationship; and (3) examining if there were any multicollianearity between variables. Person correlation was used to test the relationship among the research variables.

3.4.3.5Multiple Regressions analysis

Pallant (2007) argued that multiple regression analysis is used to explore the relationship between one continuous dependent variable and a number of independent variables or predictors. Sekaran and Bougie (2010) revealed that test of hypotheses usually explains the nature of the relationships between groups. Petrocelli (2003) defined multiple regression as a set of methods for examining specific scientific hypotheses and relationships using experimental, quasi-experimental, and non-experimental data. Multiple regression is a flexible method of data analysis that may be appropriate whenever a quantitative variable (the dependent or criterion variable) is to be examined in relationship to any other factors (expressed as independent or predictor variables). Relationships may be nonlinear, independent variables may be quantitative or qualitative,

and one can examine the effects of a single variable or multiple variables with or without the effects of other variables taken into account (Cohen, Cohen, West, & Aiken, 2003).

In this study, multiple regression analysis was used to explain the extent of the relationships among the research variables. This is to justify the level of variance to which each of the independent variables can explain the dependent variable. Hair et al. (2010) uncovered that the real world of most of the relations were affected by many variables at the same time, not by single variable only.

3.4.3.6Hierarchal Multiple Regressions Test

Wampold and Freund (1987) argued that hierarchal multiple regressions involves theoretically basing decisions for how the predictors are entered into the analysis. Aron and Aron (1999) and Cohen (2001) declared that hierarchal multiple regression is typically used to test specific theoretically based hypotheses. In hierarchal multiple regressions, the focus is about the change in predictability associated with predictor variables entered later in the analysis over and above that contributed by the predictor variables entered earlier in the analysis (Petrocelli, 2003). Kerr, Hall and Kozub (2003) argued that in hierarchical multiple regression, the independent variables are entered into the equation in an order specified by the researcher.

Based on the above discussion, this study utilized hierarchal multiple regression to test the effect of the moderating variable in enhancing the relationship between IFAC recommendation and AIS course content. In the next section, the operational definition for each variable in the framework is provided.

3.5Operational Definitions

Cavana et al. (2001) said that the operational definition is a concept to render what each question is trying to measure by looking at the behavioral variables, facets or properties denoted by the concept. This refers to the elements or observed measurable elements in order to form an index of measurement of the concept. In other words, operational definition provides the details of how the researcher can measure the variable in a deeper way. On the other hand, Zikmund, Babin, Carr, and Griffin (2010) defined the operationalization as the process of identifying scales that correspond to variance in the concepts involved in a research process. Therefore, the researcher discusses the operational definitions that are utilized in this research below.

3.5.1Employers' Needs

Based on position of many researchers (Lee & Fang, 2008; Noll & Wilkins, 2002; Tang et al., 2001), employers' needs can be defined operationally as the important skills and knowledge that are recommended to be mastered by the accounting graduates before entering the job market. This term consists of three variables: (1) core knowledge; (2) business environment knowledge; and (3) personal and interpersonal skills.

3.5.1.1Core Knowledge

In line with Lee and Fang (2008), Tang et al. (2001) denoted this term as the nucleus of knowledge in the entry level of the AIS profession. This includes managerial and technical knowledge.

3.5.1.2Business Environment knowledge

According to the previous studies (Lee & Fang, 2008; Noll & Wilkins, 2002), this term refers to the organizational knowledge and industry knowledge that new accounting graduates should have to be able to join AIS profession.

3.5.1.3Personal Skills and Interpersonal Skills

Based on the views of many researchers (Theuri & Gunn, 1998; Dalal, 1994), personal skills are the skills exhibited by an individual outside the core knowledge of his/her discipline but affects one's job general performance and efficiency. It varies from one individual to another. Lee and Fang (2008) defined the interpersonal skills as a term to denote the skills required to work well in an organization or in a team.

3.5.2Professional Bodies

This is defined as the body that is responsible for governing the accounting profession. The tasks include setting the standards and rules to be followed by the accountants. IFAC guideline (2005), MSEB (2004), UNEVCO (1993), and Tyler (1949) defined this term as the ability to generate a generation armed with the necessary professional knowledge and skills which can be obtained without any constraint, with identified goals and strict adherence to the set standards.

3.5.3Learning Environment

Norris (2004) and Chung and Davies (1995) defined this term as the sum of the internal and external circumstances and influences surrounding and affecting an individual's

learning. This term consists of three variables: (1) current technological state; (2) learning approach; and (3) participatory learning and teaching method.

3.5.3.1Current Technological State

This term refers to the adequacy of hardware and application software that is capable of integrating and ensuring network satisfaction (Bakar 2007; Chayeb & Best, 2005; Theuri & Gunn, 1998).

3.5.3.2Learning Approach

According to Bromson et al. (1994), Collier et al. (1990), and Armitage and Boritz (1986), this term refers to the integration of real life experience in the course content in an organized manner with reliable means of learning outcomes' evaluation within a specific time.

3.5.3.3Participatory Learning and Teaching Method

This represents the interaction between student and teacher. Its main aim is to get a clear definition from the participants regarding teacher's role in facilitating learning process (UNESCO, 2005; Taylor, 2004).

3.5.4IFAC Recommendation

Chayeb and Best (2005) defined this term as necessary IT knowledge components that are required by accounting graduates. This term consists of three variables: (1) IT competency; (2) IT control knowledge; and (3) general IT knowledge.

3.5.4.1Information Technology Competency

According to Dillon and Kruck (2008), Ismail and Salim (2005), and Andrews and Wynekoop (2004), this term refers to improving the ability of the graduates with IT knowledge through the IT related courses. This is to enable the students to understand IS environment effectively and eventually qualify them to gain professional memberships.

3.5.4.2Information Technology Control Knowledge

In tandem with Ismail and Salim (2005) and Milus (2004), the researcher defines this term as the IT knowledge which can be used to change the nature of accounting activities. This includes IS management, and intelligent system for mimicking professional accountants.

3.5.4.3General Information Technology Knowledge

Ismail and Salim (2005) and Meer and Adams (1996) defined this term as the required IT knowledge/skills including skills to analyze IT investment, communicate IT architecture, system acquisition, and strategic planning.

3.5.5Instructors' Characteristics

Saloojee (2004), Grroomer and Murthy (1996), and Rush et al. (1976) defined this term as lecturers' potentials to facilitate learning in an IT environment. The lecturers must have adequate teaching skills and understand their role as an academician when teaching in the class. The potential characteristics include academic position, academic qualification, and years of experience, institution of study, IT proficiency, and research interest.

3.5.6Accounting Information System Course Content

Colet and Durand (2004), Hoffman and Field (1995),UNEVCO (1993), and Tyler (1949), viewed course content as a set which is designed for the purpose of acquiring knowledge, establishing and organizing learning experiences, guaranteeing open access to all without any constraints and evaluating learning outcomes.

3.6Questionnaire Development

According to Ismail (2004), there are many research methods that can be used in IS research like case studies, surveys, simulation, field experiments, simulation and others. The most common one is survey method. There are various types of survey methods which include questionnaires, interviews, observation and content analysis (Ismail, 2004). DeVaus (1986) revealed that the questionnaire is the most widely used data collection technique in survey research. Thus, the researcher adopted the questionnaire method to obtain data for this research.

The research data were collected using developed questionnaire as described in the next section. This was undertaken to validate the framework of the research.

3.6.1The Structure of the Questionnaire

The questionnaire was designed based on four basic principles as suggested by Dillman (1978).The four principles were applied on the basis that they would increase the respondents' motivation for, and confidence, in completing the questionnaire. The four principles can be summarized as follows:

- Order the questions in descending order of importance and usefulness.
- Group the questions that are similar in content together, and within areas, by type of question.
- Take advantage of the cognitive ties that respondents are likely to make among the groups of questions in deciding the order of the questions involved.
- Position the questions that are most likely to be objectionable to respondents after the less objectionable one.

Consequently, this research questionnaire is divided into four main parts. Table 3.7 summarizes the content of the questionnaire in details. The first part is to obtain background information of the respondent. This includes gender, age, education, academic ranking and position. The second part of the questionnaire is designed to gather the perception of the respondents on the current state of AIS course content in the Iraqi HEIs. The third part forms the main part and contains seven dimensions of factors to be considered when developing AIS course content in the Iraqi HEIs (discussed in subsection 3.6.2 – 3.6.7). The last part of the research questionnaire is to obtain respondents' comments and suggestions.

Table 3.7
Summary of the Questionnaire Organizing

Part	Section	Contents
1		Personal information
2		Current State of AIS Course Content
3		Main part
	A	Employers' needs
	B	Professional bodies
	C	Learning environment
	D	IFAC Recommendation
	E	Instructs' characteristics
	F	AIS Course content
4		Suggestion

The researcher used two types of scale in the questionnaire. In the second part of the questionnaire, the researcher used the dichotomous scale. According to Cavana et al. (2001), the dichotomous scale is used to elicit a "yes" or "no" answer. This explains the purpose of having the second part of the questionnaire. In part three of the questionnaire, the researcher used the five-point Likert scale which is designed to examine how strongly the respondents agree or disagree with the statements (Cavana et al., 2001). The researcher preferred to use five-point Likert scale since it has been proven to be better understood way of communicating with the respondents (Olakunke, 2003). McKelvie (1978) found that the cross-sectional reliability was greater for five-point Likert scale than the seven-point Likert scale.

3.6.2Employers' Needs

This section is to determine the core needs of the employers of accounting graduates, which is divided into three variables namely core knowledge, business environment knowledge and personal and interpersonal skills. The items under the three variables of

the employer's needs are constructed based on the views of a number of experts (Lee & Fang, 2008; Noll & Wilkins, 2002; Tang, et al., 2001; UNEVCO, 1993). Table 3.8 illustrates the sources and number of the item related to the employers' needs. Please refer to Appendix A-1 for the details of the items.

Table 3.8
The Items Related to the Employers' Needs

Factor	Variable	Number of Items	Sources of the Items
Employers' needs	Core knowledge	7	Lee and Fang, 2008; Noll and Wilkins, 2002; Tang, et al., 2001; UNEVCO, 1993
	Business environment knowledge	5	Lee and Fang, 2008; Noll and Wilkins, 2002
	Personal and interpersonal skills	10	Lee & Fang, 2008; Noll & Wilkins, 2002; Tanget al, 2001; Hoffman and Field, 1995; UNEVCO, 1993; Rush et al, 1976

3.6.3Professional Bodies

Section B of the questionnaire was designed to obtain the information considered critical by the accounting professional bodies in relation to the AIS course content. The items were developed based on IFAC Guideline, (2005), MSEB (2004), UNEVCO (1994) and Tyler (1949). This section contained six questions that can describe the influence of professional bodies on AIS course content. Table 3.9 shows the sources and number of items related to the professional bodies. The items are illustrated in Appendix A-1.

Table 3.9
The Items Related to the Professional Bodies

Variable	Number of Items	Sources of the Items
Professional bodies	6	IFAC Guideline, 2005 MSEB, 2004; UNEVCO, 1993; Tyler, 1949

3.6.4Learning Environment

Section C of the questionnaire was designed to elicit information about the influence of learning environment on AIS course content. This section consisted of three variables. The first is the current technology state whereby its items were constructed based on the work of Ismail and Salim (2005) and Rush et al. (1976). The second variable is learning approach whereby its items were constructed based on the work of MSEB (2004), Rush et al. (1976), and Tyler (1949). The last variable is participatory learning and teaching methods and its items were adopted from Rush et al. (1976). Table 3.10 shows the sources and number of items related to the learning environment. The items are illustrated in Appendix A-1.

Table 3.10
The Items Related to the Learning Environment

Factor	Variable	Number of Items	Sources of the Items
Learning environment	Current technological state	5	Ismail & Salim, 2005; Rush et al., 1976
	Learning approach	5	MSEB, 2004; Rush et al., 1976; Tyler,1949
	Participatory learning and teaching method	5	Rush et al, 1976

3.6.5International Federation of Accounting CommitteeRecommendation

This section of the questionnaire was designed to elicit information on the variables that determine which IFAC recommendation should be considered in the AIS course content so that it can achieve its desired objectives. This section contained three variables; the first, IT competency and its items were developed by referring to the work of Ismail and Salim (2005) and IFAC Guideline (2005). The second variable is IT control knowledge and its items were constructed from several academic researches (Ismail & Salim, 2005) as well as IFAC Guideline, 2005. The third variable is general IT knowledge and its items were constructed based on several academic findings (Coe, 2006; IFAC Guideline, 2005; Ismail & Salim, 2005; Milus, 2004). Table 3.11 shows the sources and a number of items related to IFAC recommendation. The details of the items are illustrated in Appendix A-1.

Table 3.11
The Items Related to the International Federation of Accounting Committee *Recommendation*

Factor	Variable	Number of Items	Sources of the Items
IFAC Recommendation	IT competency	4	IFAC Guideline, 2005; Ismail & Salim, 2005
	IT control knowledge	5	IFAC Guideline, 2005; Ismail & Salim, 2005
	General IT knowledge	13	Coe, 2006; IFAC Guideline, 2005; Ismail & Salim, 2005; Milus, 2004

3.6.6Instructors' Characteristics

This dimension was designed to investigate why instructors' characteristics should be considered in the AIS course content. The section consisted of ten questions that were

adopted from a number of sources (Ismail & Salim, 2005; Salojee, 2004; Tang et al., 2001; Groomer & Murthy, 1996; Rush et al., 1976). Through this dimension, the researcher intended to investigate the moderating role of instructors' characteristics on the relationship between IFAC recommendation and AIS course content. Table 3.12 illustrates the sources and a number of items related to the instructors' characteristics. Please refer to Appendix A-1 for the details.

Table 3.12
The Items Related to the Instructors' Characteristics

Moderate V.	Number of Items	Sources of the Items
Instructors' characteristics	10	Groomer & Murthy, 1996; Ismail & Salim, 2005; Rush et al., 1976; Salojee, 2004; Tang et al., 2001

3.6.7Accounting Information System Course Content

This dimension of the questionnaire represents the measurement of the dependent variable. It was designed to elicit the information about the AIS course content. The questions were adopted from Hoffman and Field (1995), UNEVCO (1993), and Tylor (1949). Table 3.13 illustrates the sources and a number of items related to the AIS course content. For more details, please refer to Appendix A-1.

Table 3.13
The Items Related to the AIS Course Content

D.V.	Number of Items	Sources of the Items
AIS course content	8	Hoffman and Field, 1995; UNEVCO, 1993; Tyler, 1949

3.7Refinement of the Questionnaire

As mentioned above, the researcher developed the measures in this study from an extensive literature. According to Bourque and Fielder (1995), the reliability and validity must be re-evaluated if modifications are made to the questionnaire. Such practice was adopted in this research to ensure the quality of the research questionnaire.

In addition, several researchers suggested refining the questionnaire before collecting the data (Cavana et al., 2001; Dillman, 1978). Therefore, before gathering the main data, content validity and pilot test were carried out to further improve the questionnaire. The process of improving the questionnaire also served as validation purpose since parts of the research questionnaire were developed exclusively for the research. To refine the research questionnaire, the researcher undertook content validity and pilot testing with the Iraqi AIS lecturers.

3.7.1Content Validation

As recommended by Sekaran and Bougie (2010) and Gay and Diehl (1996), the content validity of the research questionnaire was conducted from two main perspectives. Firstly, the questionnaire items were collected from the previous studies, and secondly, through review of the questionnaire items by the academic and professional experts. Therefore, to review the items of the questionnaire, the survey questionnaire was given to 12 experts, seven of them are experts in quantitative research (senior lecturers and above), while the other five experts are professionals in accounting. Their suggestions to improve the research questionnaire were adequately considered.

3.7.2Pilot Test

For the internal consistency of the items, each of the research variables was examined using reliability analysis of estimated Cronbach's alpha (Cavana et al., 2001). In this research, any item with Cronbach's alpha of not less than .6 was considered reliable and suitable for the study (Nunnally, 1978). Thus, the Statistical Package for Social Science (SPSS) version 15 was used in order to conduct the reliability.

The pilot study was conducted among 35 respondents as suggested for reliability testing (Sekaran & Bougie, 2010). The test aimed to examine the level of consistency among the items of each of the variables involved in this study. The respondents consisted of ten assistant lecturers representing 28.6% of the total respondents; five (14.3%) are lecturers, while the remaining 20 are senior AIS lecturers (57.1%). Out of the 35 respondents involved in the pilot test, 27 representing 77.1% of the total respondents were male and eight (22.9%) were female. In relation to age, 20 respondents (57.1%) fell between 30 and 39 years of age, five respondents (14.3%) between 25 to 29 years of age, five respondents (14.3%) between 40 and 49 years of age, four respondents (11.4%) between 50 and 59 years of age, and only one respondent (2.9%) of over 60 years of age. In terms of education level, two surveyed respondents (5.7%) have Bachelor's degree, 23 respondents (65.7%) have Master's degree, and ten respondents (28.6%) have Doctor of Philosophy. Five respondent (28.6%) held one official position while the other 25 (71.4%) held no position.

In short, a pilot test was conducted to measure the consistency among the items of the research constructs. It was uncovered from the pilot study results that all the constructs had Cronbach's alpha of not less than .6, as shown in Table 3.14.

Table 3.14
Reliability Analysis Results

Construct	Coding	Number of Questions	Cronbach's Alpha
Core Knowledge	CK	7	0.723
Business Environment knowledge	BE	5	0.830
Personal and interpersonal skills	PIS	10	0.860
Professional Bodies	PB	6	0.750
Current Technological State	CTS	5	0.731
Learning Approach	LP	5	0.719
Participatory Learning and Teaching Method	PLTM	5	0.719
Information Technology Competency	ITC	4	0.758
Information Technology control knowledge	ITCK	5	0.803
General Information Technology Knowledge	GITK	11	0.900
Instructors' Characteristics	IC	12	0.929
AIS Course Content	AISCC	8	0.881

The pilot data also showed that there is a need to define what should be done to improve AIS course content in the Iraqi HEIs, as many of the respondents had an unsatisfactory perception about the current state of AIS course content in Iraq (see Appendix B for details). Although, the sample for the pilot study was too small to generalize this finding, notwithstanding, it is an indication that there is a problem with the current AIS course in the Iraqi HEIs.

3.8Summary

In the first step of this chapter, the researcher discussed how the research conceptual framework was diagrammed, followed by the hypotheses. The framework consists of the factors that are relevant to the AIS course content in the Iraqi HEIs. It was then tested by using a survey approach, which is discussed in the second step in this chapter. The researcher discusses how the research objectives are going to be achieved by following a number of research steps together with their justification. The discussion includes the research approach, data collection procedure and operational definition. The researcher explains how the research instrument was developed as a way to measure the variables that have a potential effect on AIS course content. This is to ensure the validity and reliability of the instrument. The analysis findings of this research are described in the next chapter.

CHAPTER 4

ANALYSIS AND FINDINGS

4.0Introduction

It is good to reflect the background of this research. Basically, this study has three main areas of interests. The first interest is to explain the current state of AIS course content in the Iraqi HEIs. The second interest is to identify the factors that need to be considered in AIS course content in the Iraqi HEIs. Finally, this study aims to determine the critical success factors related to the AIS course content in the Iraqi HEIs. The research methodology and hypotheses development have been discussed in chapter three. As mentioned in the previous chapter, the research data is primary in nature and collected by using a questionnaire as discussed in section 3.7 in the previous chapter.

In this chapter, a response rate is firstly discussed in section 4.2. Section 4.3 explains the non-respondent bias. Respondent profile is discussed in section 4.4. The result about the current state of AIS course content is offered in section 4.5. The goodness of the data is discussed in section 4.6. Finally, SPSS version 15.0 is used to analyze the data.

4.1Response Rate

As a mentioned earlier in chapter three, the population for this study is lecturers in the accounting department, which were 520 lecturers (MHESR, 2010). The target respondents for this study was the lecturers who were interested in the AIS (i.e., AIS specialist or lectures of AIS subjects), which they around 130 lecturers (MHESR, 2010).

The chosen those respondents due to the likely validity of their perceptions based on their knowledge and experience. Furthermore, the content of the questionnaire requires comprehensive or in-depth information about the critical success factors related to the AIS course content, which cannot be expected from other respondents.

For data collection purpose, and in order avoiding non-valid questionnaires, as well as recording a reasonably acceptable response rate, 260 questionnaires were distributed to accounting lecturers. The returned questionnaires were 165. After checking them, the researcher found that 31 questionnaires were badly completed. The researcher dropped those questionnaires. As a result, 134 questionnaires were considered valid for the data analysis procedure. Table 4.1 summarizes the distribution of the questionnaires.

Table 4.1
Response Rate of the Questionnaires

Response	Frequency/Rate
Distributed questionnaires	260
Returned questionnaires	165
Usable questionnaires	134
Badly Completedquestionnaires	31
Not returned questionnaires	95
Response rate[10]	63.46%
Usable response rate[11]	51.54%

Based on Table 4.1, the response rate was 63.46%, while the usable questionnaires were 134, which represent 51.54%. According to Line and Sneed (2007) and Kosugi, Hamanaka, Hori and Nakajima (2007), this percentage of usable questionnaires

[10]Returned questionnaires / Distributed questionnaires (165 / 260)
[11]Usable questionnaires / Distributed questionnaires (134 / 260)

considered acceptable. The authors revealed that the recorded response rates for the universities'employees and lecturers in the past studies were between 40-60%. Moreover, according to Sekaran and Bougie (2010), the response rate of 30 % is sufficient for the survey studies. Therefore, the sample size for this study was acceptable.

4.2Non-Respondent Bias

Matteson, Ivancevich and Smith (1984) argued that relying on voluntarily participation always results in the possibility that respondents and non-respondents differ in some manner. Armstrong and Overton (1977) argued that non-respondents are supposed to have the same features as the not-on-time respondents. This process involves breaking the sample into early responses (that is, returns received within one month after distribution) and late responses (those returns received after one month of distribution).

The objective of the above test is to examine if there are any significant differences in the major variables between early and late responses. Therefore, t-test was conducted to examine the differences between the two groups. The first group was being in the end of October 2010, while the second group started at the end of December 2010. Table 4.2 below shows the result of non-response bias test.

Table 4.2
Test of Non-Response Bias Independent Sample T-Test

Variables	*Levene's Test*	*Sig.*	*Significance at 95% level*
Core Knowledge	.081	.776	Not Significance
Business environment knowledge	.157	.692	Not Significance
Personal and interpersonal skills	1.004	.318	Not Significance
Professional Bodies	.780	.379	Not Significance
Current technological state	.937	.335	Not Significance
Learning Approach	.011	.916	Not Significance
Participatory teaching and learning Method	.206	.651	Not Significance
IT competency	.001	.979	Not Significance
IT control Knowledge	.521	.472	Not Significance
General IT Knowledge	.138	.710	Not Significance
Instructors' characteristics	1.713	.193	Not Significance
AIS course content	.583	.447	Not Significance

Note: The critical values were all not significant

The results from the test of non-respondent bias indicated that there is no significant difference between early and late responses. All the values were above the significance level of .05. Therefore, non-response bias is not an issue in this research.

4.3Profileof the Respondents

This section discusses the respondents' general information. Specifically, it provides information about research respondents. The information includes the respondents' specialization, respondents' academic rank, gender, age, educational level, the period spent in teaching AIS course content, and respondent's position. Sections 4.4.1 – 4.4.7 discuss the profiles in detail.

4.3.1Respondents' Specialization

In this case, the researcher intended to know level of expertise in AIS subject among the respondents. The researcher classified the research respondents (AIS lecturers) into AIS specialization, teach AIS subject, interested in AIS research, and teaching other accounting subjects (meaning that the respondents have a very low level of knowledge about AIS course). Table 4.3 illustrates the findings in detail.

Table 4.3
Respondents Specialization

Specialist	Frequency	Percent
AIS Specialization	91	67.9
Teach AIS subject	23	17.2
Interested in AIS research	14	10.4
Teaching other accounting subject	6	4.5
Total	**134**	**100.0**

The result showed that the majority of the respondents were specialists in AIS 91 (67.9%). The respondents who are teaching AIS subject represent were 23 (17.2%), while the respondents interested in AIS research represent were 14 (10.4%). Notwithstanding, 6 (4.5%) of the respondents are teaching other accounting subjects, but those respondents have worked as professors in accounting departments for many years. Therefore, they have such knowledge and sufficient experience enabling them to answer the questionnaire. As a result, all those respondents are considered adequately knowledgeable to participate in this study.

4.3.2Respondents' Academic Rank

The MHESR in Iraq classifies academic rank into five which are as follows: (1) assistant researcher; (2) assistant lecturer; (3) lecturer; (4) assistant professor; and (5) professor. The researcher included this classification in the research instrument. The descriptive analysis shows that 15 of the respondents are assistant researchers which represent 11.19% from the sample; 52 respondents (38.8 %) are assistant lecturers, while 38 respondents (28.35%) are lecturers. On the other hand, 25 respondents (18.7%) are assistant professors while four respondents are professors (3%). Table 4.4 below shows the AIS lecturers' academic ranking in detail.

Table 4.4
Respondents' Academic Rank

Academic Rank	Frequency	Percent
Assistant researcher	15	11.19
Assistant lecturer	52	38.8
Lecturer	38	28.35
Assistant Professor	25	18.66
Professor	4	3
Total	**134**	**100.0**

4.3.3Respondents' Gender

The results in Table 4.5 show that the majority of the respondents were male. They represent 61.9% of the research sample size, while 38.1% of the respondents were female. This result reflects the nature of Arabs culture where males dominate the economic activities. Al- Gahtani, Hubona, and Wang (2007) and Al-deek (2010) supported this result.

Table 4.5
Respondents' Gender

Lecturer gender	Frequency	Percentage%
Male	83	61.9
Female	51	38.1
Total	**134**	**100**

4.3.4Respondents' Age

Table 4.6 provides the results for age categories of the respondents. Most of the respondents were under the category of 30-39 years (32.84%), while 27.61% of the respondents were under the category of 40–49 years. The third group consists of respondents by age 24–29 (23.13%), and the fourth group consists of respondents by age 50-59 (11.94%). Finally, 4.48% of the respondents were over 60 years old.

Table 4.6
Respondents' Age

Respondents' Age	Frequency	Percentage%
24 - 29	31	23.13
30 - 39	44	32.84
40 - 49	37	27.61
50 - 59	16	11.94
Over 60	6	4.48
Total	**134**	**100**

4.3.5Respondents' Educational Level

This section discusses the educational level of the respondents. The research questionnaire included three educational levels, i.e., Bachelor's (BA), Master of Science (MSc) and Doctor of Philosophy (PhD). Table 4.7 shows that 25 respondents, which

represent 18.66%, have BA degree, 79 respondents, which represent 59.96%, have MSc, while 30 respondents, which represent 22.38%, have PhD.

Table 4.7
Respondents' Educational Level

Respondents' Educational Level	Frequency	Percentage
Bachelor	25	18.66
Master of Science	79	58.96
Doctor of Philosophy	30	22.38
Total	**134**	**100**

4.3.6Respondents' Period Spent in Teaching AIS Course

Table 4.8 illustrates that 38.8% of the respondents have 6-10 years in AIS teaching experience, while 23.1% have more than 10 years in teaching the AIS course. Seventeen of the respondents, which represent 12.7%, have less than one year in AIS teaching experience and only six percent have never taught an AIS subject.

Table 4.8
Respondents' Period Spent in Teaching AIS Course Content

Year work	Frequency	Percentage
Never	8	6
Less 1 year	17	12.7
2-5 year	26	19.4
6-10 year	52	38.8
above 10 year	31	23.1
Total	**134**	**100**

4.3.7Respondents' Position

Table 4.9 illustrates that 17.9% of the respondents have held administrative posts, whereas 82.1% of the respondents have not held administrative posts.

Table 4.9
Respondents' Position

Respondents' Position	Frequency	Percentage
Yes	24	17.9
No	110	82.1
Total	**134**	**100**

The researcher has summarized the results of the respondents' profile in Table 4.10, which include lecturers' academic ranking, gender, age, years' of working experience and position.

Table 4.10
Summary of the Respondents' Profile Results

Category	Minimum	Maximum	Frequency	Percentage
Sample			**134**	**100%**
Respondents' Specification	**1**	**4**		
AIS specification			91	67.9
teach AIS subject			23	17.2
Interested In AIS research			14	10.4
teaching other accounting subject			6	4.5
Total			**134**	**100%**
Respondents' Academic Ranking	**1**	**5**		
Assistant researcher			15	11.19
Assistant lecturer			52	38.8
Lecturer			38	28.35
Assistant Professor			25	18.66
Professor			4	3
Total			**134**	**100%**
Respondents' Gender	**1**	**2**		
Male			83	61.9
Female			51	38.1
Total			**134**	**100%**
Respondents' Age	**1**	**5**		
20-29			38	28.4
30-39			51	38
40-49			23	17.2
50-59			16	11.9
Over 60			6	4.5
Total			**134**	**100%**
Respondents' Education Level	**1**	**3**		
Bachelor			25	18.66
Master			79	58.96
PHD			30	22.38
Total			**134**	**100%**
Respondents' Period Spent in Teaching AIS Course Content	**1**	**5**		
never			8	6.0
Less 1 year			17	12.7
2-5 year			26	19.4
6-10 year			52	38.8
above 10 year			31	23.1
Total			**134**	**100%**
Respondents' Position	**1**	**2**		
Yes			24	17.9%
No			110	82.1%
Total			**134**	**100%**

4.4Current Stateof AIS Course Contentin the Iraq HEIs

The second section of the questionnaire involved the researcher trying to understand the current state of AIS course content in the Iraqi HEIs. Consisting of 13 items, the researcher used the dichotomous scale to obtain "yes" or "no" as illustrated in Table 4.11.

Table 4.11
Respondents' Views About the Current State of AIS Course Content in the Iraqi HEIs

No.	Item	Yes		No	
		Freq.	%	Freq.	%
1	is able to deliver a good flow of idea	68	50.7	66	49.3
2	contains core AIS knowledge	103	76.9	31	23.1
3	is able to deliver required personal skills	43	32.1	91	67.9
4	is able to deliver required interpersonal skills	32	23.9	102	76.1
5	is able to deliver good communication skills	67	50	67	50
6	is able to deliver both organizational and business knowledge	74	55.2	60	44.8
7	is able to deliver required accounting knowledge	71	53	63	47
8	is able to deliver required IT knowledge	27	20.1	107	79.9
9	is able to deliver required technical skills	25	18.7	109	81.3
10	is able to deliver required soft skills	30	22.4	104	77.6
11	is in line with the professional body's requirements	39	29.1	95	70.9
12	supports the current world learning environment	19	14.2	113	85.8
13	supports the current world learning approach	29	21.6	105	78.4

The first Item discussed the ability of the course content to provide a good flow of ideas. About 50.7% of the respondents agreed that the current AIS course content has the capacity to provide a good flow of ideas. However, 49.3% of the respondents disagreed. The second item is about to what extent the current AIS course content in Iraqi HEIs contains basic AIS knowledge; 76.9% of the respondents indicated "yes" and 23.1% gave a "no" response. This means that the current AIS course content is inclusive of basic AIS knowledge.

For the third item, the researcher examined the ability of the current AIS course content to provide the requisite personal skills. Table 4.11 shows that 32.1% agreed with this statement, while 77.9% disagreed, clearly indicating that the current AIS course content does not have the ability to deliver the necessary personal skills. The fourth item is about the ability of the AIS course content to deliver interpersonal skills; 76.1% of the respondents gave a "no" response and 23.9% indicated "yes", meaning the current AIS course content does not have the ability to deliver interpersonal skills. The fifth item investigated communication skills delivery via the AIS course content; 61.1% of the respondents said "no" while 48.9% said "yes". This seems to indicate that the current AIS course content has weak ability to deliver communication skills.

For the sixth item, the researcher looked at the aspect of delivery of organizational and business knowledge in current Iraqi AIS course content. The result shows that 55.2% said "yes" and 44.8% said "no", meaning there is a low level of delivery of organizational and business knowledge.

The seventh item examines the role of the current AIS course content in delivering required accounting knowledge. For this item, 73% said "yes" while 27% said "no", clearly showing that the current course content has a high level of delivering accounting knowledge. With regards to important knowledge, i.e., IT knowledge (eighth item), 79.9% said "no" and 20.1% said "yes", which is proof that the current AIS course content has poor ability to deliver IT knowledge.

For the ninth item regarding the AIS course content ability to deliver technical skills to the students, 18.8% of the respondents said “yes” and 81.2% said “no”, again supporting the out-datedness of the current AIS course content. The tenth item which investigated the ability of the current AIS course content to deliver the required soft skills, 22.4% said “yes” and 77.6% said “no”, once again proving that the current AIS course content in Iraqi HEIs has a low level in delivering soft skills.

Item 11 investigated to what extent the current AIS course content is aligned with the professional bodies’ requirements; 70.9% said “no” and 28.1% said “yes”. This means the current AIS course content fails to meet the professional bodies’ requirements. In terms of the learning environment, item 12 show that 85.8% of the respondents said “no” while 14.2% said “yes”. Hence, the current AIS course content does not support the learning environment. For the item regarding ‘the current course content does not support the current world learning approach’, the results from item 13 show that 78.4% of the respondents said “no” while 21.6% said “yes”.

Moreover, the researcher conducts the t-test. The results confirm that the current AIS course content able to deliver a good flow of idea, good communication skills, deliver both organizational and business knowledge, and contains core AIS knowledge. Table 4.12 below represents the t-test results.

Table 4.12
T-Test Results on the Items that Current AIS Course Content is Able to Deliver

Items	Sig	95% Confidence Interval of the Difference	
		Lower	Upper
Ps1	.001	1.41	1.58
Ps5	.001	1.41	1.59
Ps6	.001	1.36	1.53

In summation, it is clear that the current AIS course content in the Iraqi HEIs is outdated and not suitable to cope with the rapid changes occurring in the global environment. The goodness of the measures is explained in the following section.

4.5Goodnessof Measures

The goodness and suitability of the measurement tool were examined by using the validity and reliability test, which are dealt with in subsections 4.6.1 till 4.63.

4.5.1Validity

Zikmond et al. (2010), Sounders et al. (2007), Gay, and Diehl (1996) argued that validity can be considered as the extent to which the instrument measurements intend to measure validity. It is important to conduct validity test to be sure that the instrument used in this study reveal the actual meaning of the measure. According to Sounders et al. (2007), there are three groups of validity tests, which are: (1) content validity, (2) construct validity, and (3) criterion-related validity. In this study, the content validity was already conducted as described in section 3.8.1 of chapter three. The second type of validity is construct validity which testifies how well the results obtained from the use of the measure fit the theories around which the test is designed (Zikmund, 2003). To measure this type of validity, the factor analysis test was used. The third type of validity is

criterion-related validity, which reflects the relationship between scale scores and some specified, measurable criterion (Pallant, 2001). Previous research stated that the criterion validity can be measured using different ways: Pearson correlation, Tolerance Value and Variance Inflation Factors (VIF) (Al-Smadi 2011; Friedman, Goldman, Srivastava, & Parkin, 2004; Emery, Crump, & Bors, 2003). In this study, the Pearson correlation, Tolerance value and VIF value were tested in order to conduct the criterion validity.

4.5.2Reliability

In simple words, reliability can be defined as "consistency". Baddie (2001) revealed that reliability means regardless of whenever the same procedures are used repeatedly, the measurement is regarded reliable if it yields the same results when the same technique is applied repeatedly on the same respondents over a different period of time. The famous measurement for reliability is Cronbach's alpha, which ranges from 0 to 1. According to Nunnally (1978), the value of 0.6 is the acceptable alpha value of research, in general.

In the current study, Cronbach's alpha was conducted to ascertain the internal consistency for the measurement items. In this regard, reliability test was conducted after factor analysis, and the result of the reliability test for each factor were summarized after each factor analysis.

4.5.3Construct Validity

Gibbons, Dempster, and Moutray (2009) stated that factor analysis has been widely used, to assess the construct validity of a test or a scale. According to Johnson and Wichern

(2007), factor analysis was founded by Karl Pearson, Charles Spearman and others in the early 20th century. Zikmond et al. (2010) and Pallant (2007) described factor analysis as a kind of data reduction approach employed to classify the fundamental variables from the original factors. In summary, factor analysis is used to reduce and reclassify a large number of items into a smaller number of items in new variables.

4.5.3.1Factor Analysis Test on Employers Needs

The KMO, MSA and BTS results for employers' needs are as illustrated in Table4.13.

Table 4.13
KMO, MSA and BTS Value for Employers' Needs

Item		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.844
Bartlett's Test of Sphericity	Approx. Chi-Square	2912.995
	df	231
	Sig.	.001

From Table 4.12, it can be seen that the value of KMO, MSA was .844, which according to Kaiser (1974), is meritorious. The BTS value was very large (2912.995) and significant (.001). The KMO, MSA and BTS values indicated that the employers' needs were fit for factor analysis. The results for extracted components of employers' needs variables are shown in Table 4.14 and were generated using the latent root criterion, which explained about 71.156 percent of the cumulative variance.

Table 4.14
The Results of Extracted component for Employers' Needs

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.166	37.120	37.120	8.166	37.120	37.120	5.112	23.239	23.239
2	3.649	16.588	53.708	3.649	16.588	53.708	4.599	20.904	44.142
3	2.345	10.658	64.366	2.345	10.658	64.366	3.705	16.843	60.985
4	1.494	6.790	71.156	1.494	6.790	71.156	2.237	10.170	71.156
5	.964	4.381	75.536						
6	.757	3.440	78.977						
7	.699	3.176	82.153						
8	.620	2.820	84.973						
9	.514	2.335	87.308						
10	.480	2.180	89.488						
11	.423	1.924	91.412						
12	.366	1.664	93.076						
13	.319	1.452	94.528						
14	.298	1.355	95.883						
15	.252	1.144	97.028						
16	.236	1.074	98.102						
17	.215	.976	99.077						
18	.081	.368	99.446						
19	.053	.239	99.685						
20	.030	.136	99.821						
21	.023	.105	99.927						
22	.016	.073	100.000						

Extraction Method: Principal Component Analysis.

The next step was to determine the number of factors based on factor loading using varimax rotation criterion to reduce the item in each factor and make them more meaningful. The results are illustrated in Table 4.15

Table 4.15
Loading Factor Using Varimax Rotationfor Employers' Needs

Items	Component			
	1	2	3	4
Ck2	.920			
Ck6	.880			
Ck5	.826			
Ck1	.817			
CK3	.805			
Ck4	.753			
Ck7	.664			
PIS5		.928		
PIS2		.927		
PIS3		.915		
PIS4		.870		
PIS6		.860		
PIS1		.586		
BE5			.923	
BE1			.887	
BE4			.833	
BE3			.708	
BE2			.658	
PIS7				.792
PIS8				.706
PIS9				.639
PIS10				.536

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 5 iterations.

Table 4.15 shows the final factor structure and the component variables. The core knowledge and business environment knowledge have the same factors while the personal and interpersonal skills were divided into two different groups, namely, "personal traits" and "interpersonal skills". The items PIS1, PIS2, PIS3, PIS4, PIS5 and PIS6 were considered as "personal traits", while the items PIS7, PIS8, PIS9, and PIS10 were considered as "interpersonal skills". The reliability test was conducted to determine the consistency of the constructs. Table 4.16 shows the values of Cronbach's alpha for the final four factors.

Table 4.16
Summary of Reliability Test for Employers Needs for Final Variables

Factor	No. of Variables	Alpha- Value
Core Knowledge	7	.938
Business Environment knowledge	5	.837
Personal Traits	6	.933
Interpersonal Skills	4	.698

All Cronbach's alpha values were above .6 (exceed minimum accepted value of .6 suggested by Nunnally, 1978). This provided confidence to use the above factors for further analysis. The factor analysis test for professional bodies is provided in the next section.

4.5.3.2Factor Analysis Test on Professional Bodies

As explained in section 4.6.3.1 the same procedures were conducted to identify the underlying dimensions for variables representing professional bodies. KMO, MSA and BTS results are shown in Table 4.17.

Table 4.17
KMO, MSA and BTS for Professional Bodies

Item		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.875
Bartlett's Test of Sphericity	Approx. Chi-Square	415.348
	Df	15
	Sig.	.000

Table 4.17 shows that KMO and MSA value for the professional bodies' items was .875, which is meritorious and suitable for conducting factor analysis. The BTS value was

415.348 and significant (.001). The KMO, MSA and BTS value indicated that the professional bodies' items were appropriate for factor analysis. Using the latent root criterion for the professional bodies, only one factor was extracted, which explained about 63.399 percent of the cumulative variance, as explained in Table 4.18 below.

Table 4.18
Results of Extraction of Component for Professional Bodies

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.804	63.399	63.399	3.804	63.399	63.399
2	.722	12.034	75.432			
3	.537	8.942	84.374			
4	.380	6.334	90.708			
5	.344	5.732	96.441			
6	.214	3.559	100.000			

On the other hand, Table 4.19 shows component matrix for professional bodies' factor. In this case, professional bodies have one meaningful component only.

Table 4.19
Results of Component Matrix for Professional Bodies Factor

Items	Component
	1
PB6	.899
PB3	.830
PB2	.829
PB5	.807
PB1	.730
PB4	.660

Extraction Method: Principal Component Analysis.
a 1 components extracted.

Reliability test was conducted to determine the consistency of the constructs using Cronbach's alpha. Table 4.20 shows the Cronbach's alpha value for professional bodies' dimension.

Table 4.20
Summary of Reliability Test for Professional Bodies' Final Factor

Factor	No. of Items	Alpha- Value
Professional Bodies	6	.713

The result showed the values of Cronbach's alpha were above the minimum acceptable value of .6 as suggested by Nunnally (1978). This result provided confidence to use the above factor for subsequent analysis. In the next section, the researcher tests the factor analysis on the learning environment.

4.5.3.3Factor Analysis Test on Learning Environment

The KMO, MSA and BTS results for learning environment are illustrated in Table4.21.

Table 4.21
KMO, MSA and BTS for Learning Environment

Item		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.825
Bartlett's Test of Sphericity	Approx. Chi-Square	1311.392
	df	105
	Sig.	.000

KMO and MSA value was .825 and meritorious. Moreover, BTS value was large (1311.392) and significant (.001). This means that factor analysis could be conducted on

variables. From latent root criterion, three factors were extracted and they explained about 69.88 percent of the cumulative variance. Please refer to Table 4.22 for details.

Table 4.22
Results of Extraction of Component for Learning Environment

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.539	30.259	30.259	4.539	30.259	30.259	3.823	25.488	25.488
2	3.138	20.919	51.178	3.138	20.919	51.178	3.493	23.287	48.775
3	2.805	18.702	69.880	2.805	18.702	69.880	3.166	21.105	69.880
4	.776	5.174	75.054						
5	.618	4.123	79.177						
6	.520	3.466	82.643						
7	.487	3.248	85.891						
8	.462	3.082	88.972						
9	.384	2.557	91.530						
10	.332	2.214	93.744						
11	.283	1.889	95.632						
12	.240	1.598	97.231						
13	.208	1.384	98.615						
14	.155	1.030	99.645						
15	.053	.355	100.000						

Extraction Method: Principal Component Analysis

The varimax rotation shows the factor loading in the final stage for each learning environment variables. Table 4.23 below shows its results.

Table 4.23
Loading on Final Learning Environment Factors Using Varimax Rotation

Items	Component		
	1	2	3
LA4	.959		
LA1	.958		
LA5	.828		
LA2	.808		
LA3	.743		
PLTM2		.886	
PLTM3		.869	
PLTM5		.812	
PLTM1		.770	
PLTM4		.767	
CTS4			.871
CTS2			.810
CTS5			.799
CTS1			.781
CTS3			.651

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 4 iterations.

Table 4.23 highlights that there are no differences between original variables and new variables after factor analysis. Therefore, the same labels were used for each variable after factor analysis. The label for the first component was "Current Technological State" (consists of five items), the second was "Learning Approach" (consists of five items), and the third component was "Participatory Learning and Teaching Methods" (consists of five items).

To test the consistency of learning environment components, reliability test was conducted using Cronbach's alpha. Table 4.24 shows the value of Cronbach's alpha for the final three factors.

Table 4.24
Summary of Reliability Test for Learning Environment Final Factors

Factor	*No. of Items*	*Alpha-Value*
Current technological state	5	.875
Learning Approach	5	.916
Participatory learning and teaching methods	5	.886

The results show that Cronbach's alpha values were above the minimum accepted value of .6 as suggested by Nunnally (1978). This provided confidence to use those factors for subsequent analysis. The next section discusses the factor analysis for IFAC recommendation.

4.5.3.4Factor Analysis Test on IFAC Recommendation

KMO, MSA and BTS were also used to determine whether factor analysis is appropriate or not. The outputs of these tests are shown in Table 4.25.

Table 4.25
KMO, MSA and BTS for IFAC Recommendation

Item		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.707
Bartlett's Test of Sphericity	Approx. Chi-Square	2976.200
	df	231
	Sig.	.000

As illustrated in Table 4.25 KMO and MSA value was .707, which according to Kaiser (1974) is middling. The BTS value was large (2976.200) and significant (.001). The KMO, MSA and BTS values indicated that IFAC recommendation items were suitable for factor analysis.

Table 4.26shows the IT knowledge components. Using the latent root criterion, four factors were extracted, which explained about 72.276 percent of the cumulative variance.

Table 4.26
Results of Extraction of IFAC RecommendationFactors

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.973	36.241	36.241	7.973	36.241	36.241	5.231	23.779	23.779
2	3.253	14.786	51.028	3.253	14.786	51.028	4.199	19.085	42.863
3	2.684	12.200	63.228	2.684	12.200	63.228	3.241	14.733	57.596
4	1.991	9.048	72.276	1.991	9.048	72.276	3.230	14.680	72.276
5	.910	4.135	76.411						
6	.854	3.882	80.293						
7	.684	3.108	83.401						
8	.592	2.690	86.091						
9	.495	2.249	88.341						
10	.448	2.037	90.377						
11	.433	1.970	92.347						
12	.353	1.605	93.952						
13	.267	1.214	95.166						
14	.256	1.163	96.330						
15	.218	.991	97.321						
16	.205	.932	98.253						
17	.136	.617	98.870						
18	.094	.425	99.295						
19	.073	.333	99.628						
20	.053	.241	99.868						
21	.018	.080	99.949						
22	.011	.051	100.000						

Extraction Method: Principal Component Analysis

The next step was determining the number of factors based on factor loading using varimax rotation criterion. It is used to reduce the variable in each factor and make them more meaningful. Table 4.27 below shows the varimax rotation for IFACRecommendation.

Table 4.27
Loading Factor Using Varimax Rotation for IFAC Recommendation

Items	Component			
	1	2	3	4
GITK13	.902			
GITK3	.881			
GITK1	.846			
GITK11	.842			
GITK2	.842			
GITK12	.838			
GITK7	.643			
GITK9		.847		
GITK5		.821		
GITK8		.818		
GITK4		.798		
GITK10		.745		
GITK6		.703		
ITCK3			.863	
ITCK2			.862	
ITCK5			.841	
ITCK4			.738	
ITCK1			.658	
ITC2				.886
ITC1				.858
ITC4				.823
ITC3				.774

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 5 iterations.

The varimax rotation shows that "General IT knowledge" (GITK) has been classified into two components, namely, "General IT knowledge" and "General Information Communication Technology knowledge" while the other two components have the same items. In this case, the items of GITK1, GITK2, GITK3, GITK7, GITK9, GITK11, GITK12, and GITK13 are considered as "General IT Knowledge"; while the items of

GITK4, GITK5, GITK6, GITK8, GITK9, and GITK10 are considered as "General Information Communication Technology knowledge"

To determine the consistency of the above factors, reliability test using Cronbach's alpha value was conducted. The results in Table 4.28 below show that the Cronbach's alpha values were above the minimum accepted value of .6 as suggested by Nunnally (1978). This provided confidence to use those variables for subsequent analysis.

Table 4.28
Summary of Reliability Test for IFAC Recommendations' Variables

Variables	No. of Items	Alpha- Value
IT competency	4	.906
IT control knowledge	5	.854
General IT knowledge	7	.940
General ICT knowledge	6	.908

From the above results, it is confirmed that the variables related to the IFAC recommendation are suitable for further analysis. The factor analysis of instructors' characteristics is provided in the next section.

4.5.3.5Factor Analysis Test on Instructors' Characteristics

The same procedures, as in the previous sections, were employed to determine whether factor analysis is suitable to be conducted on the instructors' characteristics. The generated KMO, MSA and BTS results are shown in Table 4.29.

Table 4.29
*KMO MSA and BTS for Instructors' Characteristics First Trail *

Item		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.859
Bartlett's Test of Sphericity	Approx. Chi-Square	2308.438
	df	45
	Sig.	.000

Table 4.29 show that the KMO, MSA for instructors' characteristics had a value of .859, which is suitable for factor analysis. The BTS value was also large (2308.438) and significant (.001). This means that factor analysis con be conducted on the variable.

In Table 4.30 below shows the results from latent root criterion. Two factors were extracted, which explained about 81.089 percent of the cumulative variance.

Table 4.30
Results of Extraction of Components for Instructors' Characteristics First Trail

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.056	70.561	70.561	7.056	70.561	70.561	4.359	43.593	43.593
2	1.053	10.528	81.089	1.053	10.528	81.089	3.750	37.496	81.089
3	.819	8.193	89.282						
4	.587	5.869	95.151						
5	.348	3.481	98.631						
6	.037	.368	98.999						
7	.031	.308	99.307						
8	.028	.278	99.586						
9	.024	.235	99.821						
10	.018	.179	100.000						

Extraction Method: Principal Component Analysis.

Alternative extraction method is loading the final factors using varimax rotation criterion to reduce the variables into meaningful factors. Table 4.31 below shows the results of varimax rotation.

Table 4.31
Loading Factor Using Varimax Rotation forInstructors' Characteristics First Trail

Items	Component	
	1	2
IC4	.886	
IC3	.885	
IC7	.881	
IC5	.776	
IC8	.748	.422
IC10		.912
IC2		.909
IC9	.511	.764
IC6	.540	.754
IC1		.535

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 3 iterations.

Table 4.31illustrates the final factor structures and the component variables. There was a cross-loading of items 'IC6' and 'IC9' which had values of above .5 in two different factors. These items were excluded and factor analysis test was repeated based on the remaining eight items. In Table 4.32below, the KMO, MAS and BTS values for the second test are shown.

Table 4.32
KMO MSA and BTS for Instructors' Characteristics the Second Trial

Item		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.823
Bartlett's Test of Sphericity	Approx. Chi-Square	1742.722
	df	28
	Sig.	.000

Table 4.32illustrates that the KMO, MSA value was .823, which is meritorious and suitable for factor analysis. Furthermore, the BTS value was high (2308.438) and significant (.001). All these indicated that the instructors' characteristics were suitable for

factor analysis test. Using the latent root criterion, one factor was extracted and the results are shown in 4.33 It explained about 69.401 percent of the cumulative variance.

Table 4.33
Results of Extraction of Component for Instructors' Characteristics Second Trial

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.552	69.401	69.401	5.552	69.401	69.401
2	.985	12.317	81.718			
3	.794	9.926	91.644			
4	.554	6.923	98.567			
5	.037	.460	99.027			
6	.031	.385	99.412			
7	.029	.362	99.774			
8	.018	.226	100.000			

Extraction Method: Principal Component Analysis.

Table 4.34below illustrates the component matrix which shows that all items were combined into one component.

Table 4.34
The Component Matrix for Final Factor for Instructors' Characteristics Second Trail

Items	Component
	1
IC7	.924
IC3	.902
IC4	.895
IC5	.841
IC8	.835
IC2	.793
IC10	.791
IC1	.653

Extraction Method: Principal Component Analysis.
a 1 components extracted.

Cronbach's alpha was conducted to determine the consistency of the construct. The result of reliability test is shown in Table 4.35.

Table 4.35
Summary of Reliability Test for Final Factor for Instructors' Characteristics

Factor	No. of Items	Alpha-Value
Instructors' Characteristics	8	.857

The results of reliability test for instructors' characteristics in Table 4.35above show that the Cronbach's alpha value was above the minimum value (.6) as suggested by Nunnally (1978). This result provided confidence to undertake the subsequent analysis. In the next section, the test of factor analysis on AIS course content is explained.

4.5.3.6Factor Analysis on AIS Course Content

The same procedure, as in the previous sections, was employed to determine whether factor analysis is suitable to be conducted on variables representing AIS course content. KMO, MSA and BTS results are shown in Table 4.36.

Table 4.36
KMO MSA and BTS for AIS Course Content

Item		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.748
Bartlett's Test of Sphericity	Approx. Chi-Square	649.297
	df	28
	Sig.	.000

Table 4.36shows that KMO and MSA value for the AIS course content was .748, which is meritorious based on Kaisers' classification (1974) and thus suitable for factor analysis. The BTS value was 649.297 and significant (.001).

Table 4.37shows the results for extracted components of AIS course content. Two factors were extracted, which explained about 42.914 percent of the variance.

Table 4.37
Results of Extraction of Component for AIS Course Content

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.433	42.914	42.914	3.433	42.914	42.914
2	1.999	24.992	67.906			
3	.816	10.196	78.102			
4	.559	6.983	85.085			
5	.440	5.498	90.582			
6	.409	5.113	95.695			
7	.306	3.822	99.517			
8	.039	.483	100.000			

Extraction Method: Principal Component Analysis.

Using the component matrix, the items were combined into one meaningful factor for AIS course content. Table 4.38below shows the results of component matrix.

Table 4.38
The Loading on Final Factor Using Component Matrix

Items	Component
	1
AISCC5	.762
AISCC8	.754
AISCC2	.680
AISCC1	.677
AIDCC3	.677
AISCC6	.619
AISCC4	.541
AISCC7	.478

Extraction Method: Principal Component Analysis.
a 1 components extracted.

Table 4.38shows that there was no difference between original factor and new factor resulting from factor analysis. To test the reliability of the factor, Cronbach's alpha was conducted Table 4.39shows the values of Cronbach's alpha for the final factor.

Table 4.39
Summary of Reliability Test for Final Factor for AIS Course Content

Factors	No. of Items	Alpha-Value
AISCD	8	.805

Table 4.39shows that Cronbach's alpha values were above .6 which is the minimum accepted value as suggested by Nunnally (1978). This provides confidence to use it for further analysis.Table 4.40 below provides a summary for the validity and reliability test.

Table 4.40
Summarize the Construct Validity (Facto Analysis) and Reliability Results

Construct	Items	Factor Loading	KMO	% of Variance	Cronbach's Alpha
		Independent Variables			
Employers' Needs					
Core Knowledge	7	.920, .880, .826, .817, .805, .753, .664,			.938
Business Environment knowledge	5	.923, .887, .833, .708, .658	.845	71.156	.896
Personal Traits	6	.928, .927, .915, .870, .860, .586			.933
Interpersonal Skills	4	.792, .706, .639, .536			.698
Professional Bodies	6	.899, .830, .829, .807, .730, .660	.875	63.399	.713
Learning Environment					
Current Technological State	5	.871, .810, .799, .781, .651			.875
Learning Approach	5	.959,. 958,. 828, .808, .748	.825	69.880	.916
Participatory Learning and Teaching Methods	5	.886, .869, .812, .770, .767			.886
IFAC Recommendation					
IT competency	4	.886, .858, .823, .774			.906
IT Control Knowledge	5	.863, .862, .841, .738, .658			.854
General IT Knowledge	7	.902, .881, .846, .842, .842, .838, .643	.777	72.276	.940
General ICT Knowledge	6	.847, .862, 841, .738, .658			.908
		Moderating Variable			
Instructors' Characteristics	8	.924, .902, .895, .841, .835,.793, .791, .653	.859	69.401	.857
		Dependent Variable			
AIS Course Content	8	.762, .754, .680, .677, .677, .619, .541, .478	.748	42.914	.805

From Table 4.40, it can be seen that the factor loading for the entire items in the questionnaire was more than .45, which based on Hair et al. (2006), can provide a guideline for identifying significant factor loading. Additionally, the value of KMO was above .5. The percentage of variance was also considered as another indicator that showed that this research instrument was valid. The minimum percentage of variance was 42.914% which showed that the current research instrument passed the construct validity test. The minimum Cronbach's Alpha value in this research was .698 which is more than .6, as suggested by Nunnally (1978). This provides confidence to use them for further analysis.

In order to summarize the changes that happened after factor analysis test, Table 4.41 below shows the components before factor analysis and the final components after factor analysis test.

Table 4.41
The Final Variables for Further Analysis

Old Factor		No. of Items	New Factor		No. of Items
Core Knowledge	CK	7	Core Knowledge	CK	7
Business Environment knowledge	BE	5	Business Environment Knowledge	BE	5
Personal interpersonal skills	PIS	10	Personal Traits	PT	6
			Interpersonal skills	IPS	4
Professional Bodies	PB	6	Professional Bodies	PB	6
Current technological State	CTS	5	Current technological State	CTS	5
Learning Approach	LA	5	Learning Approach	LA	5
Participatory learning and teaching method	PLTM	5	Participatory learning and teaching method	PLTM	5
IT Competency	ITC	4	IT competency	ITC	4
IT control Knowledge	ITCK	5	IT control Knowledge	ITCK	5
General IT knowledge	GITK	13	General IT knowledge	GITK	7
			General ICT knowledge	GICTK	6
Instructors' characteristics	IC	10	Instructors' Characteristics	IC	8
AIS course content	AISCC	8	AIS course content	AISCD	8

In summary, the final variables that were used for further analysis were determined using factor analysis test. Personal traits, interpersonal skills, and general ICT knowledge were considered as new variables that were found after applying the factor analysis test. There were also many indicators that provided confidence to use the above variables for the subsequent analysis. The next sections discusses the hypotheses' restatement in response to the result of the factor analysis test.

4.6Hypotheses Restatement

In this section, the hypotheses were restated in response to the results of the factor analysis as presented in the previous section. The factor analysis test had extracted new variables related to employers' needs and thus, these new variables were included in the hypotheses. The new variables were labeled as "Personal Traits" and "Interpersonal Skills". On the other hand, there were no changes to the other two variables, namely, "Core Knowledge" and "Business Environment Knowledge". Also, there was no change to the second variable, which is "Professional Bodies".

The learning environment factor passed the factor analysis test without any changes. Therefore, the involved variables are the same as before factor analysis test, namely, "Current Technological State", "Learning Approach" and "Participatory Learning and Teaching Methods". On the other hand, other new variables were found in IFAC recommendation and were labeled as "General IT Knowledge" and "General Information Communication Technology Knowledge". The variables of "IT Competency" and "IT Control Knowledge" were maintained.

In addition, after running the factor analysis test, there was no new variable identified for instructors' characteristics. Similarly, in the AIS course content, there were no new variables created. Table 4.42shows the new hypotheses for all factors.

Table 4.42
The Restatement for the Hypotheses

Code	Hypotheses Statement
H1	**The AIS course content in the Iraqi HEIs is influenced by the employers' needs**.
H1-1	The AIS course contentin the Iraqi HEIs is influenced by the core knowledge.
H1-2	The AIS course contentin the Iraqi HEIs is influenced by the business environment knowledge.
H1-3	The AIS course content inthe Iraqi HEIs is influenced by the personal traits.
H1-4	The AIS course content inthe Iraqi HEIs is influenced by the interpersonal skill.
H2	**The AIS course content in the Iraqi HEIs is influenced by the professional Bodies.**
H3	The AIS course content in the Iraqi HEIs is influenced by the learning environment.
H3-1	The AIS course content in the Iraqi HEIs is influenced by the current technological state.
H3-2	The AIS course content in the Iraqi HEIs is influenced by the learning approach.
H3-3	The AIS course content in the Iraqi HEIs is influenced by the participatory learning and teaching method.
H4	**The AIS course content in the Iraqi HEIs is influenced by the IFAC recommendation.**
H4-1	The AIS course content in the Iraqi HEIs is influenced by the IT competency.
H4-2	The AIS course contentin the Iraqi HEIs is influenced by the IT control knowledge.
H4-3	The AIS course contentin the Iraqi HEIs is influenced by the general IT knowledge.
H4-4	The AIS course content in the Iraqi HEIs is influenced by the general ICT knowledge.
H5	**The influence of IFAC recommendation on the AIS course content in the Iraqi HEIs is moderated by Instructor's characteristics.**
H5-1	The influence of IT competency on AIS course contentin the Iraqi HEIs is moderated by Instructor's characteristics.
H5-2	The influence of IT control knowledge on the AIS course contentin the Iraqi HEIs is moderated by Instructor's characteristics.
H5-3	The influence of general IT knowledge on the AIScourse content in the Iraqi HEIs is moderated by Instructor's characteristics.
H5-4	The influence of ICT knowledge on the AIS course content in the Iraqi HEIs is moderated by Instructor's characteristics.

To recapitulate, this section discusses the impact of new variables that appeared after the factor analysis on the hypotheses statement. In the next section, the researcher discusses the descriptive test of each variable.

4.7DescriptiveStatisticsof Study Variables

All variables are subject to descriptive statistics in order to identify their characteristics. Specifically, mean, standard deviation, maximum and minimum values were computed. The results of these descriptive statistics are presented separately for each item in each variable in respect of 134 valid cases of the study. For the purpose of the interpretation of the mean scores, three (3) was computed as the mean score for the five-point Likert scale; in this regard, a mean score of more than three is considered as high (positive) while the mean score of below three is considered as low (negative) (National Institute of Standard and Technology, 2010).

4.7.1Descriptive Statistics for Employers' Needs

Table 4.43 illustrates the characteristics of the employers' needs' factor. The results indicated that mean value for "Core Knowledge" fell between (3.69) to (3.95), while the mean value for "Business Environment Knowledge" was between (3.47) to (3.54). The third variable "Personal Traits" had a mean value between (3.50) to (3.62). The last variable "interpersonal skills" had a mean value between (3.46) to (3.71). This indicates that most of the respondents expressed their agreement with the items under employers' needs.

Table 4.43
Descriptive Statistics for Employers' Needs Items

Items	N	Minimum	Maximum	Mean	Std. Deviation
Ck1	134	2	5	3.70	.795
Ck2	134	2	5	3.89	.810
CK3	134	2	5	3.78	.782
Ck4	134	2	5	3.71	.793
Ck5	134	2	5	3.87	.734
Ck6	134	2	5	3.95	.779
Ck7	134	1	5	3.69	.797
BE1	134	2	5	3.47	.634
BE2	134	3	5	3.54	.645
BE3	134	3	5	3.51	.622
BE4	134	3	5	3.48	.657
BE5	134	2	5	3.48	.680
PT1	134	2	5	3.50	.753
PT2	134	1	5	3.61	.714
PT3	134	1	5	3.60	.716
PT4	134	1	5	3.57	.770
PT5	134	1	5	3.62	.723
PS6	134	1	5	3.56	.790
IPS1	134	1	5	3.49	.743
IPS2	134	1	5	3.46	.742
IPS3	134	2	5	3.46	.742
IPS4	134	1	5	3.71	.830
Valid N (listwise)	134				

N: Total number of respondent

4.7.2Descriptive Statistics for Professional Bodies

The mean values for the items of professional bodies are shown in Table 4.44and they ranged from (3.53) to (3.69).

Table 4.44
Descriptive Statistics for Professional Bodies Items

Items	N	Minimum	Maximum	Mean	Std. Deviation
PB1	134	2	5	3.69	.759
PB2	134	2	5	3.51	.717
PB3	134	2	5	3.60	.692
PB4	134	2	5	3.57	.697
PB5	134	2	5	3.53	.722
PB6	134	2	5	3.57	.690
Valid N (listwise)	134				

N: Total number of respondent

The results for the mean show that respondents gave a ranking of more than three, which indicated that the respondents agreed with items in professional bodies' section.

4.7.3Descriptive Statistics for Learning Environment

Table 4.45shows the mean values for learning environment factor. The first variable, "Current Technological State", had mean values between (3.72) to (3.85). The mean values for the second variable, "Learning Approach", ranged between (3.57) to (3.49). The last variable, "Participatory Learning and Teaching Methods", had mean values ranging between (3.63) to (3.85). These results reflected the positive agreement of the respondents with the items of learning environment factor.

Table 4.45
Descriptive Statistics for Learning Environment Items

Items	N	Minimum	Maximum	Mean	Std. Deviation
CTS1	134	2	5	3.85	.731
CTS2	134	1	5	3.78	.772
CTS3	134	2	5	3.75	.730
CTS4	134	2	5	3.84	.748
CTS5	134	2	5	3.72	.800
LA1	134	1	5	3.49	.753
LA2	134	1	5	3.49	.753
LA3	134	2	5	3.57	.780
LA4	134	1	5	3.50	.733
LA5	134	1	5	3.52	.723
PLTM1	134	1	5	3.63	.820
PLTM2	134	2	5	3.85	.827
PLTM3	134	1	5	3.81	.818
PLTM4	134	1	5	3.69	.789
PLTM5	134	1	5	3.78	.719
Valid N (listwise)	134				

N: Total number of respondent

4.7.4Descriptive Statistics for IFAC Recommendation

The results of descriptive statistics for the IFAC recommendation factor are shown in Table4.46. The “IT Competency” items had mean values between (3.65) to (3.72), while the second variable which is “IT Control Knowledge” had mean values ranging between (3.52) to (3.66). The third variable, “General IT Knowledge” had mean values ranging between (3.56) to (3.86). The mean values for the last variable, “General ICT Knowledge”, ranged between (3.90) to (4.21).

Table 4.46
Descriptive Statistics for IFAC Recommendation Items

Items	N	Minimum	Maximum	Mean	Std. Deviation
ITC1	134	1	5	3.72	.817
ITC2	134	1	5	3.66	.794
ITC3	134	1	5	3.65	.788
ITC4	134	1	5	3.69	.799
ITCK1	134	1	5	3.59	.741
ITCK2	134	2	5	3.52	.695
ITCK3	134	2	5	3.56	.653
ITCK4	134	2	5	3.66	.735
ITCK5	134	1	5	3.66	.806
GITK1	134	1	5	3.58	.870
GITK2	134	1	5	3.65	.768
GITK3	134	1	5	3.70	.785
GITK4	134	1	5	3.86	.842
GITK5	134	1	5	3.56	.863
GITK6	134	1	5	3.63	.753
GITK7	134	1	5	3.72	.791
GICTK1	134	1	5	3.90	.887
GICTK2	134	2	5	4.21	.776
GICTK3	134	1	5	3.99	.813
GICTK4	134	1	5	3.90	.912
GICTK5	134	1	5	4.16	.842
GICTK6	134	1	5	3.94	.856
Valid N (listwise)	134				

N: Total number of respondent

It is therefore clear from the results obtained that the respondents had a positive agreement with items related to the IFAC recommendation.

4.7.5Descriptive Statistics for Instructors' Characteristics

In Table 4.47,the results for the mean values of the "Instructors' Characteristics" items are shown. The highest value was (3.46) while the lowest value was (3.62). Considering these results, the respondent agreed with the items under "Instructors' Characteristics".

Table 4.47
Descriptive Statistics for Instructors' Characteristics Items

Items	N	Minimum	Maximum	Mean	Std. Deviation
IC1	134	1	5	3.46	.838
IC2	134	1	5	3.50	.899
IC3	134	1	5	3.62	.764
IC4	134	1	5	3.62	.783
IC5	134	1	5	3.52	.838
IC7	134	1	5	3.62	.802
IC8	134	1	5	3.51	.856
IC10	134	1	5	3.50	.891
Valid N (listwise)	134				

N: Total number of respondent

4.7.6Descriptive Statistics for AIS Course Content

In this section, Table 4.48shows the descriptive statistics results for the "AIS Course Content". The respondents' agreement with the questionnaire items under "AIS Course Content" can be recognized in the mean values which fall between (3.32) to (3.72), while the standard deviation values ranged between (.729) to (.828).

Table 4.48
Descriptive Statistics for AIS Course Content Items

Items	N	Minimum	Maximum	Mean	Std. Deviation
AISCC1	134	1	5	3.56	.800
AISCC2	134	1	5	3.66	.822
AISCC3	134	1	5	3.72	.828
AISCC4	134	1	5	3.32	.762
AISCC5	134	1	5	3.59	.748
AISCC6	134	1	5	3.53	.743
AISCC7	134	2	5	3.50	.743
AISCC8	134	1	5	3.57	.729
Valid N (listwise)	134				

N: Total number of respondent

This section discussed the descriptive statistics test; it aimed to identify the variables' characteristics. In particular, the mean, standard deviation, maximum and minimum values. The results of the descriptive statistics were conducted separately for each item in each variable. The results reflect the respondents' agreement for each item statement as the mean scores were found to be above three which is commensurate with high and positive agreement. Also, the standard deviation value ranged between .622 and .912 which reflected the existence of considerably acceptable variability within the data set. In the next section, the researcher discusses the correlation analysis.

4.8Correlation Analysis

The correlation analysis was used in this study to measure the power of the association between numerical variables (Healy, 1984; Baba, 2004). To achieve this, bivariate correlation was undertaken. The bivariate correlation procedure computes Pearson's correlation coefficient, Spearman's Rho, and Kendall's Tau and their significance levels.

Correlations measure how variables or rank order are related. Pearson's correlation coefficient "R" is the most famous measure of linear association.

Implementing the above bivariate correlation procedure on the research data generates the correlation amongst independent variables. This is illustrated in Table 4.49 below

Table 4.49

Correlation Between the Study Variables

	CK	BE	PT	IPS	PB	CTS	LA	PLTM	ITC	ITCK	GITK	GICTK	IC	AISCC
CK	1													
BE	.264(**)	1												
	.002													
PT	.321(**)	.093	1											
	.000	.287												
IPS	.486(**)	.268(**)	.466(**)	1										
	.000	.002	.000											
PB	-.060	.190(*)	-.034	-.004	1									
	.489	.028	.700	.964										
CTS	.213(*)	.248(**)	.287(**)	.474(**)	.207(*)	1								
	.014	.004	.001	.000	.016									
LA	.488(**)	.306(**)	.274(**)	.799(**)	.044	.582(**)	1							
	.000	.000	.001	.000	.613	.000								
PLTM	.239(**)	.327(**)	.123	.285(**)	-.018	.096	.225(**)	1						
	.005	.000	.155	.001	.839	.270	.009							
ITC	.355(**)	.118	.183(*)	.530(**)	.047	.268(**)	.505(**)	.109	1					
	.000	.176	.035	.000	.593	.002	.000	.211						
ITCK	.027	.227(**)	-.021	.192(*)	.201(*)	.582(**)	.268(**)	.119	.168	1				
	.761	.008	.809	.027	.020	.000	.002	.172	.052					
GITK	.367(**)	.245(**)	.192(*)	.479(**)	-.031	.367(**)	.429(**)	.240(**)	.376(**)	.079	1			
	.000	.004	.026	.000	.722	.000	.000	.005	.000	.363				
GICTK	.350(**)	.171(*)	.205(*)	.350(**)	-.035	.292(**)	.392(**)	.195(*)	.430(**)	.141	.426(**)	1		
	.000	.049	.017	.000	.686	.001	.000	.024	.000	.104	.000			
IC	.044	-.022	.506(**)	.076	.079	.008	-.098	.140	-.063	-.116	-.002	-.013	1	
	.612	.804	.000	.385	.363	.930	.262	.107	.469	.181	.982	.882		
AISCC	.477(**)	.292(**)	.224(**)	.775(**)	.039	.573(**)	.733(**)	.246(**)	.597(**)	.231(**)	.681(**)	.509(**)	-.076	1
	.000	.001	.009	.000	.654	.000	.000	.004	.000	.007	.000	.000	.384	

Note. ***P* <.001.

**P* <.05.

a Listwise N=134

The findings from the correlation analysis between the variables, as illustrated in Table 4.48,show that, at the significance levels of .001 and .05, AIS course content was significantly correlated with core knowledge, business environment knowledge, personal traits, interpersonal skills,current technological state, learning approach, participatory learning and teaching methods, IT Competency, IT control knowledge, general IT knowledge and general ICT knowledge. On the other hand, at the same significance levels, AIS course content was insignificantly correlated with professional bodies and instructors' characteristics. Table 4.50 shows the summary of the correlation between the variables and the strength of the relationship based on Guildford's rule of thumb.

Table 4.50
Summary of the Correlation

Variables	Correlation coefficient with AIS course content	Strength of Relationship Based on Gulidford's Rule of Thumb
AISCC (DV)	1	Same variable
CK	.477**	Moderate correlation relationship and significant relationship and not significant
BE	.292**	low correlation relationship at significant level
PT	.224**	Low correlation relationship and at the significance level
IPS	.775**	High correlation with a substantial relationship at the significant level
PB	.039	Negligible Relationship and not significant
CTS	.573**	Moderate correlation relationship at the significance level
LA	.733**	High correlation Relationship and significant
PLTM	.246**	Moderate correlation Relationship and significant
ITC	.597**	Moderate correlation relationship and significant.
ITCK	.231**	Moderate correlation relationship and significant.
GITK	.681**	Moderate correlation relationship and significant.
GICTK	.509**	Moderate correlation relationship and significant.
IC	-.076	Negligible Relationship and not significant

Note. $^{**}P < .001$.
$^{*}P < .05$.

From the abovementioned discussion, it can be seen that most of the variables have correlation with AIS course content. This indicates a strong relationship between dependent variables and independents variables. It can also be seen that some variables show significant correlation levels at .01 and some of them show significant correlation level at .05. In the next section, the researcher discusses the hypotheses test using the multiple regression analysis.

4.9Multiple Regression Analysis Test

Hypothesis H1, H2, H3 and H4 were tested using multiple regression, while Hypothesis H5 was tested using the hierarchical regression analysis to understand the moderating effects of instructors' characteristics on the relationship between the IFACrecommendation and AIS course content. All these are discussed in detail in subsections 4.9.1 till 4.9.3.

4.9.1Test for Violations of Assumptions

Hair et al. (2010), Tabachnick and Fidell (2007) revealed that normality, linearity, outliers, homoscedasticity and multicollianarity should be fulfilled before conducting multiple regression.

4.9.1.1Normality Test

According to Gravetter and Wallnau (2009), normality test is used to describe a symmetrical, bell-shaped curve, which has the greatest frequency of scores in the middle, with smaller frequencies towards the extremes. Pallant (2007) revealed that normality can be assessed to some extent, by obtaining skewness and kurtosis. Coakes, Steed and Ong

(2009) argued that skewness and kurtosis refer to the shape of the distribution. The positive values for skewness are an indication for a positive skewness. Pallant (2001) explained that skewness value provides an indication of the symmetry of the distribution while the kurtosis value provides information about the 'peakedness' of the distribution. According to Hair et al. (2006), normality exists when skewness and kurtosis ratios are +/- 2.58. Table 4.51 shows the results of normality test.

Table 4.51
The Statistics of Sekwnss and Kurtosis Ratios for Continuous Variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CK	134	3.43	5.00	4.2026	.42778	.067	.209	-.638	.416
BE	134	2.60	5.00	3.4940	.54439	.810	.209	-.125	.416
PT	134	2.00	5.00	3.5806	.63949	.073	.209	.095	.416
IPS	134	2.00	4.80	3.5358	.50298	.223	.209	.264	.416
PB	134	2.00	5.00	3.5779	.56470	.480	.209	.379	.416
CTS	134	2.00	5.00	4.1493	.62127	-1.223	.209	1.976	.416
LA	134	1.40	5.00	4.1522	.83825	-1.408	.209	1.805	.416
PLTM	134	2.00	5.00	4.1970	.56408	-.922	.209	1.277	.416
ITC	134	2.00	5.00	3.6810	.70604	-.019	.209	-.345	.416
ITCK	134	2.00	5.00	3.6617	.61600	.215	.209	-.056	.416
GITK.A	134	1.86	5.00	3.6706	.69528	.055	.209	-.429	.416
GITK.B	134	1.67	5.00	4.0149	.70250	-.673	.209	.539	.416
IC	134	1.25	5.00	3.5438	.69034	-.558	.209	.756	.416
AISCC	134	2.00	4.75	3.5569	.50249	.049	.209	.564	.416

Valid N (listwise) = 134

From Table 4.51it can be seen that all variables are normally distributed since all the results of skewness and kurtosis are in the range of +/- 2.58, as suggested by Hair et al. (2010). This indicates that the data was ready and suitable for multiple regression

analysis. The histogram for the normal distribution, as illustrated in Figure 4.1, provides additional evidence for the normality test.

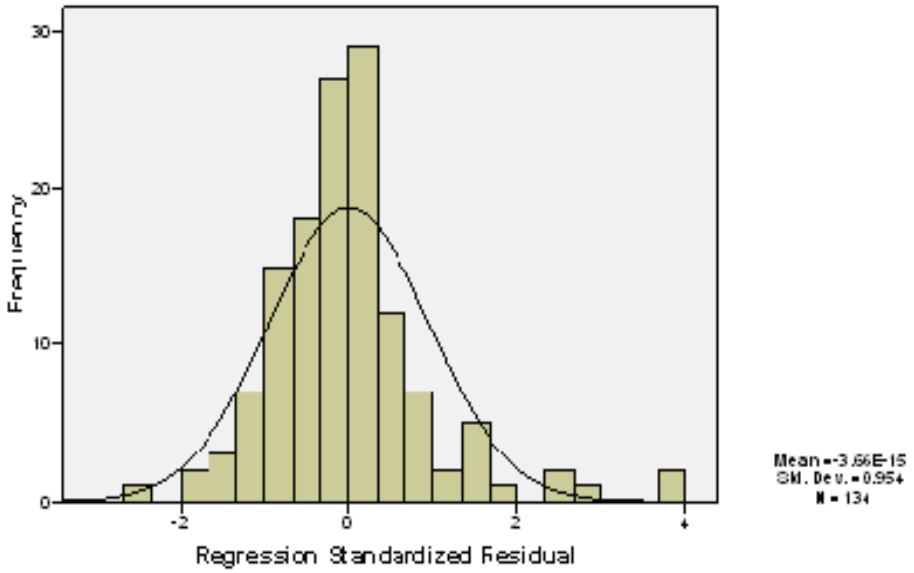


Figure 4.1
The Histogram for Normal Distributed

4.9.1.2Linearity and Homogeneity Test

Linearity is the second assumption for the multiple regression tests. Tabachnick and Fidell (2007) defined linearity as the degree of how the relationship between the variables can be portrayed in a straight line. To assess this, linearity residual plots, as suggested by Hair et al. (2010), were employed, as shown in detail in Figure 4.2.

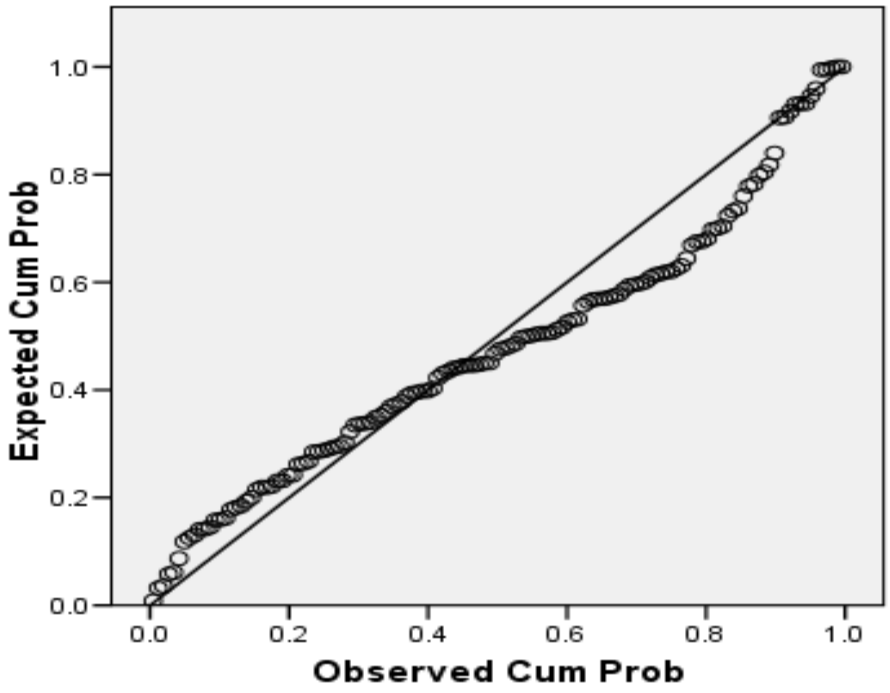


Figure 4.2
The Normal P-P Plot

The results illustrated in Figures 4.1 and 4.2 provided justification to use multiple regressions to explore the relationship between the dependent and independent variables.

The homoscedasticity appears when the values of the variance for dependent variable concentrate in only a limit range of the independent variable (Hair et al., 2006). This assumption was examined by using residual plot to ensure that there is no pattern of increasing or decreasing residual. As illustrated in Figure 4.3, the assumption of homoscedasticity was fulfilled and there was no longer any concern to use multiple regression analysis.

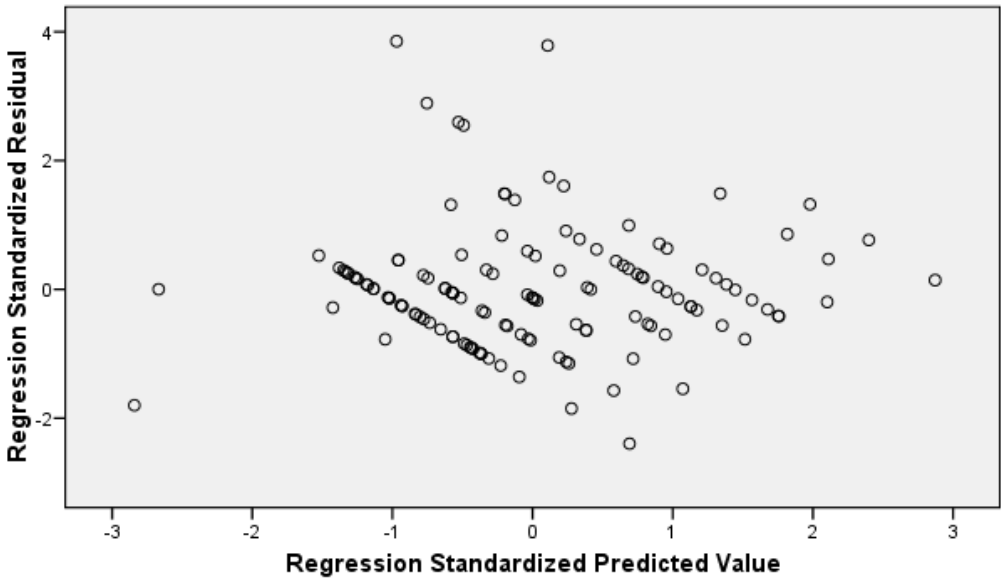


Figure 4.3
The Scatterpolt

4.9.1.3Multicollinearity Test

According to Hair et al. (2010), multicollinearity is the degree to which other variables can explicate a variable in the analysis. Multicollinearity can be recognized if there is a high correlation between the variables (Tabachnick & Fidell, 2007).

In order to examine the multicollinearity among the variables in this study, VIF and tolerance tests were conducted. The term "tolerance" means the amount of variability of the selected independent variable is not explained by the other independent variables, while the VIF is the opposite of tolerance value (Hair et al., 2010). The maximum value for VIF should not be more than 10 (Hair et al., 2010). Thus, in this study, the independent variables were scrutinized for determining the existence of multicollinearity. The results are illustrated in Table 4.52.

Table 4.52
Testing for Multicollinearity

Variables	Collinearity Statistics	
	Tolerance	VIF
CK	.651	1.537
BE	.773	1.294
PT	.678	1.474
IPS	.325	3.080
PB	.896	1.116
CTS	.349	2.866
LA	.305	3.275
PLTM	.796	1.725
ITC	.580	1.814
ITCK	.551	1.814
GITK	.605	1.653
GICTK	.667	1.499

Dependent Variables: AISCD

it can be seen that the largest VIF among the variables is 3.275, which is lower than the maximum value (VIF=10) that is suggested by Hair et al. (2010). The results of multicollinearity test indicated that there was no multicollinearity problem that existed amongst the predicted variables; therefore, it is possible to run multiple regression analysis. After the test for violations of multiple regression assumptions, the data was ready for the multiple regression tests. This is discussed in the next section.

4.9.2Testing the Model Using Multiple Regression

Multiple regression analysis was conducted in order to examine the relationships between AIS course content as dependent variable and core knowledge, business environment knowledge, personal traits, interpersonal skills, professional bodies, current technological state, learning approach, participatory learning and teaching methods, IT competency, IT

control knowledge, general IT knowledge, and general ICT knowledge as independent variables. Multiple regression analysis provides many indicators that explain one relationship. For example, *R* value indicates how well a set of variables are able to predict a particular outcome. Moreover, besides .001 and .05 as significant levels, the value .1 also can be accepted as significant level (Ang, Davies & Finlay, 2001; Speed, 1994). Speed(1994)revealed that the rationale behind accept .1 as significant level is the sample size of the study. It is important to note that two cases were excluded because they were found to be outliers.

From the analysis, the R^2 value of this research was .844 (as illustrated in Table 4.53). This means that the core knowledge, business environment knowledge, personal traits, interpersonal skills, professional bodies, current technological state, learning approach, participatory learning and teaching methods, IT competency, IT control knowledge, general IT knowledge, and general ICT knowledge explained 84.4 percent of the variance of AIS course content. The other indicator that the multiple regression analysis provides is adjusted R^2 value. According to Pallant (2007), the adjusted R^2 statistic corrects the R^2 value to provide a better estimate of the true population value. In this study, the adjusted R^2 value for Model 1 was .828. The model was also significant at level .001. Table 4.53 illustrates the results in details.

Table 4.53
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F. change	Df1	Df2	Sig. F Change
1	.919a	.844	.828	.20494	.844	53.961	12	120	.000

a Predictors: (Constant), GICTK, PB, PS, PLTM, ITCK, BE, ITC, GITK, CK, LA, CTS, IPS
b Dependent Variable: AISCC.

On the other hand, the value of analysis of variance (ANOVA) was used to assess the statistical significance of the result, as illustrated in Table 4.54. This tests the null hypothesis.

Table 4.54
The ANOVA (b) Result

Model		Sum of Squares	Df.	Mean Square	F	Sig.
1	Regression	27.197	12	2.226	53.961	.000(a)
	Residual	5.040	120	.042		
	Total	32.237	132			

a Predictors: (Constant), GICTK, PB, PT, PLTM, ITCK, BE, ITC, GITK, CK, LA, CTS, IPS
b Dependent Variable: AISCC

Overall, Table 4.55 details out the relationships between dependent variable, AIS course content, and independent variables. All twelve variables were included in the analysis and the results showed that core knowledge (β = .055, *P*= .099), business environment knowledge (β =.045, *P*= .090), personal traits (β = -.153, *P*= .001), interpersonal skills (β = .432, *P*=.001), current technological state (β = .172, *P*= .001), learning approach (β= .096, *P*= .062), IT competency (β=.107, *P*=.002), and general IT knowledge (β=.186, *P*=.001) were significant. On the other hand, professional bodies (β = -.018, *P*=.679), participatory learning and teaching method (β = -.006, *P*= .833), IT control knowledge (β= -.071, *P*= .078), and general ICT knowledge (β = .033, *P*= .289) were not significant.

Table 4.55
The Coefficients (a) Value

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	β	Std. Error	Beta	t	Sig.	Tolerance	VIF
1(Constant)	.378	.250		1.508	.134		
CK	.055	.033	.074	1.661	.099	.651	1.537
BE	.045	.026	.070	1.711	.090	.773	1.294
PT	-.153	.034	-.198	-4.527	.000	.678	1.474
IPS	.432	.063	.437	6.905	.000	.325	3.080
PB	-.018	.044	-.016	-.415	.679	.896	1.116
CTS	.172	.049	.251	3.524	.001	.349	2.866
LA	.096	.051	.123	1.888	.062	.305	3.275
PLTM	-.006	.029	-.009	-.212	.833	.796	1.725
ITC	.107	.033	.151	3.195	.002	.580	1.814
ITCK	-.071	.040	-.086	-1.777	.078	.551	1.814
GITK	.186	.033	.263	5.669	.000	.605	1.653
GICTK	.033	.031	.047	1.065	.289	.667	1.499

a. Dependent Variable: AIS course content

In order to examine the fifth hypothesis, which considers instructors' characteristics as a moderating variable that influences the relationship between IFAC recommendation and AIS course content, the hierarchical multiple regression analysis was undertaken. The description of hierarchical multiple regression analysis is offered in the following section.

4.9.3Hierarchical Multiple Regression

In order to understand the moderating effect of instructors' characteristics on the relationship between AIS course content and IFAC recommendation, the hierarchical multiple regression was conducted. The number of cases that participated in this test was 132.

The hierarchal multiple regression was conducted by following Baron and Kenny's (1986) procedures, which contain three steps. In the first step, the AIS course content was entered as dependent variable; IT competency, IT control knowledge, general IT knowledge and general ICT knowledge were entered as independent variables. In the second step, the moderating variable, i.e., instructors' characteristics, was entered and the interaction terms between instructors' characteristics and IT competency, IT control knowledge, general IT knowledge and general ICT knowledge were entered in the third step. The summary of results for the hierarchal regression analysis is shown in Table 4.56, while the details are illustrated in Appendix D-3 and Appendix D-4.

Table 4.56
The Summary of Hierarchical Regression Results

Independent Variable		Step 1 Std. Beta	Step 2 Std. Beta	Step 3 Std. Beta	Sig.
Model variables					
IT competency	(ITC)	.189	.290	.536	
IT control knowledge	(ITCK)	.098	.120	.108	
General IT Knowledge	(GITK)	.389	.562	.409	
General ICT knowledge	(GITCK)	.061	.094	-.016	
Moderating Variable					
Instructors' characteristics	(IC)		.041		.460
				-.624	.057
Interaction Terms					
IC * ITC				-.647	.001
IC * ITCK				.849	.023
IC * GITK				.856	.001
IC * GICTK				-.031	.922
R^2		.631	.632	.854	
Adjusted R^2		.619	.618	.844	
R^2 Change		.631	.002	.222	
Sig. F Change		.000	.460	.000	

Dependent Variable: AIS course content

It can be seen from Table 4.56 that independent variables that were entered in the first step caused 63.1 percent of variance in AIS course content. IT competency (β= .189, P=.001), IT control knowledge (β=.098, P=.028), and general IT knowledge (β=.389, P=.001) have significant positive relationship with AIS course content. The moderating variable entered in the second step caused 63.2 percent of variance in the AIS course content. Instructors' characteristics were not significantly (β=.041, P=.460) related to AIS course content. In the third step, the interaction terms were entered and in turn increased R^2 to 85.4 percent. Moreover, only one of the interaction terms, which is general ICT knowledge (β= -.004, P=.922), was not significant, while IT competency (β= -.087, P=.001), IT control knowledge (β= .121, P=.023), and general IT knowledge (β=.128, P=.001) were significant. The results in Table 4.56 reflect that instructors' characteristics were not a significant (P=.460) influence in the second stage, while in the third stage, they were significant (P=.057). Based on Sharma, Durand, and Gur-Arie (1981), instructors' characteristics were considered purely as a moderating variable in this study. Appendix D-4 details out the results of hierarchical multiple regression analysis.

In summary, the test of hierarchical multiple regression analysis was conducted to test the fifth research hypothesis which is about the moderating effect of the instructors' characteristics on the relationship between IFAC recommendation and AIS course content.

4.10Summary

This chapter summarizes the findings obtained from data analysis of the survey that was conducted to examine the factors that influence AIS course content in the Iraqi HEIs. Firstly, the response rate of the survey is highlighted. The estimated response rate was 63.46%. This is followed by the section that discusses non-respondent bias. Then, the descriptive statistics to explain general information of the respondents, and the current state of AIS course content in Iraq are provided . For testing the hypotheses, from H1 till H4, multiple regression analysis is elaborated upon. Lastly, hierarchical multiple regression is discussed for testing H5. The moderating effect of instructors' characteristics is also provided. The results, discussion and conclusions are provided in the next chapter.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.0Introduction

This chapter discusses the findings of this research. As mentioned in chapter two, there are four groups of independent variables in this research, i.e., employers' needs, professional bodies, learning environment, and IFAC recommendation. Also, the instructors' characteristics is considered in this study as a moderating variable. In this chapter, the conceptual framework is firstly presented. This chapter ends with a summary. Also, this chapter provides an overview and conclusions made by this research. In this regard, the researcher discusses the summary of the results and the conclusions made by this study. A discussion on the contributions that this study has made, in terms of theories and practices, is provided as well. This is followed by research limitations and suggestions for future research in the area of AIS course content.

5.1Refining Framework

After the analysis, many changes occurred. Therefore, it is important to describe these changes. Figure 5.1 illustrates the post-analysis framework.

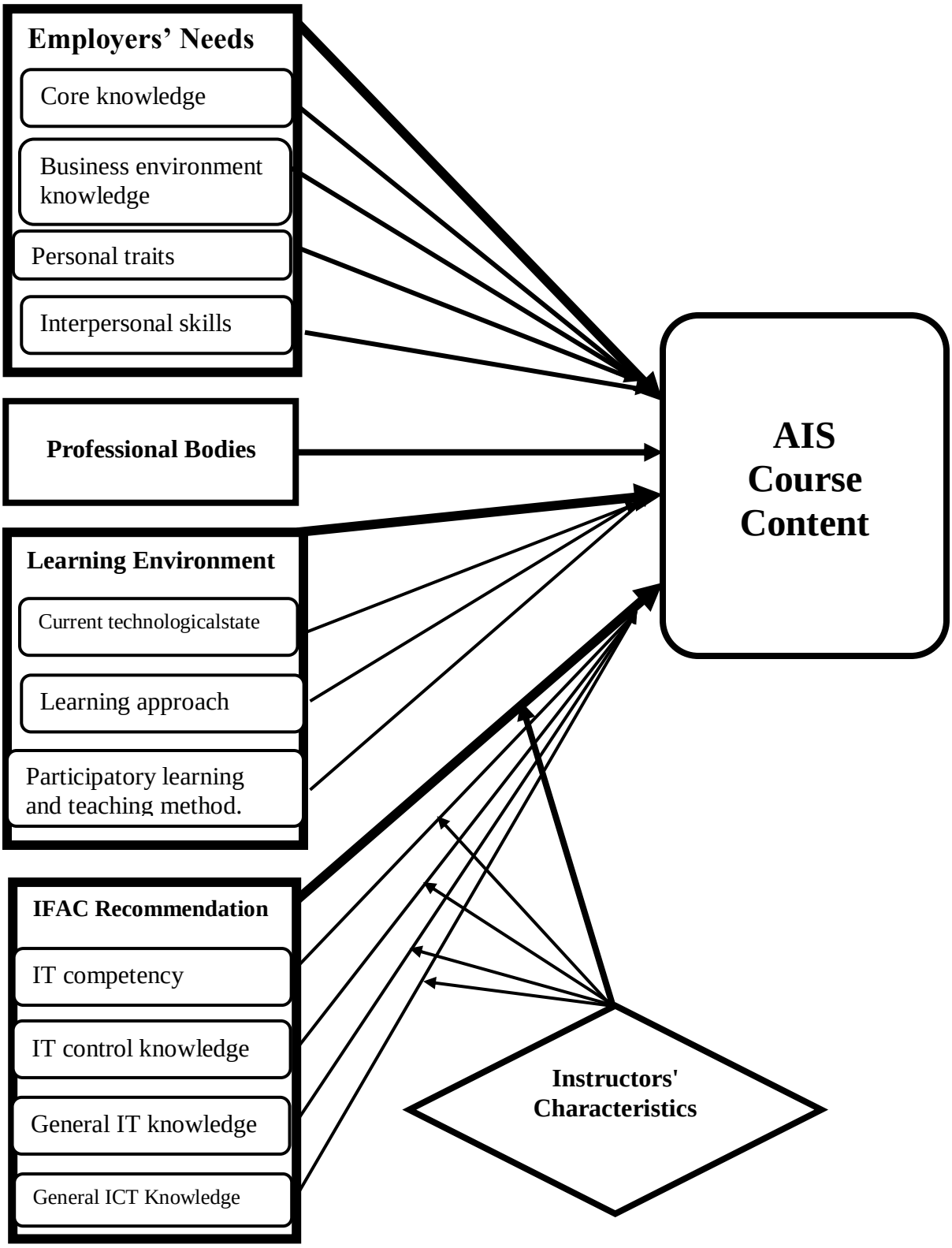


Figure 5.1
Theoretical Framework for Iraqi Accounting Information System Course Content

From Figure 5.1 above, it can be seen that new independent variables appeared after data analysis procedures. Personal traits, interpersonal skills, general IT knowledge, and general ICT knowledge are new variables that appeared under independent variables. The next section describes and discusses the refined framework from the practical perspective.

5.2Research Hypotheses Test Results

As explained in chapter four, the research hypotheses H1 until H4 were tested using the multiple regression analysis test, while H5 was tested using the hierarchical multiple regression test. The number of proposed hypotheses is 16 as illustrated in Table 5.1. Out of 16 research hypotheses seven hypotheses were found to be not supported. The remaining nine hypotheses were found to significantly influence AIS course content in the Iraqi HEIs. Table 5.1 below shows the details. The next sections discuss this in depth.

Table 5.1
The Results of Research Hypotheses Test

H	Statement of Hypotheses	Remarks
H1	**The AIS course contentin the Iraqi HEIs is influenced by the employers' needs.**	**Partial Supported**
H1-1	The AIS course content in the Iraqi HEIs is influenced by the core knowledge.	Supported
H1-2	The AIS course contentin the Iraqi HEIs is influenced by the business environment knowledge.	Supported
H1 -3	The AIS course contentin the Iraqi HEIs is influenced by the personal traits.	Not Supported
H1-4	The AIS course contentin the Iraqi HEIs is influenced by the interpersonal skill.	Supported
H2	**The AIS course contentin the Iraqi HEIs is influenced by the professional Bodies.**	**Not Supported**

Table 5.1 (continued)

H	Statement of Hypotheses	Remarks
H3	**The AIS course content in the Iraqi HEIs is influenced by the learning environment.**	**Partial supported**
H3-1	The AIS course content in the Iraqi HEIs is influenced by the current technological state.	Supported
H3-2	The AIS course contentin the Iraqi HEIs is influenced by the learning approach.	Supported
H3-3	The AIS course content in the Iraqi HEIs is influenced by the participatory learning and teaching method.	Not supported
H4	**The AIS course contentin the Iraqi HEIs is influenced by the IFAC recommendation.**	**Partial supported**
H4-1	The AIS course content in the Iraqi HEIs is influenced by the IT competency.	Supported
H4-2	The AIS course content in the Iraqi HEIs is influenced by the IT control knowledge.	Not Supported
H4-3	The AIS course content in the Iraqi HEIs is influenced by the general IT knowledge.	Supported
H4-4	The AIS course content in the Iraqi HEIs is influenced by the general ICT knowledge.	Not Supported
H5	**The influence of IFAC recommendation on the AIS course contentin the Iraqi HEIs is moderated by Instructor's characteristics.**	**Partial supported**
H5-1	The influence of IT competency on AIS course contentin the Iraqi HEIs is moderated by Instructor's characteristics.	Not Supported
H5-2	The influence of IT control knowledge on the AIS course contentin the Iraqi HEIs is moderated by Instructor's characteristics.	Supported
H5-3	The influence of general IT knowledge on the AIScourse contentin the Iraqi HEIs is moderated by Instructor's characteristics.	Supported
H5-4	The influence of ICT knowledge on the AIS course content in the Iraqi HEIs is moderated by Instructor's characteristics.	Not Supported

5.3Research Discussion

This section relates the above independent variables and moderating variable to the practical situations.

5.3.1Employers' Needs

As explained in chapter two, there are three dimensions under this independent variable. After applying factor analysis test, other variables were found. From the factor analysis, it was determined that core knowledge, business environment knowledge, personal traits

and interpersonal skills were the variables that were tested using regression test. The findings of regression test are offered in subsections 5.3.1.1 till 5.3.1.4.

5.3.1.1Core Knowledge

According to Lee and Fang (2008), core knowledge can be considered as knowledge that discriminates IS recruits from the others in an organization. The findings from regression test, which are illustrated in Table 4.55, confirm a significant relationship between core knowledge and AIS course content (*P*= .099). Although the significance level is quite low, the evidences from the literature, such as Lee and Fang (2008), show a real relationship between the core knowledge and AIS course content. Therefore, the hypothesis H1-1 in the current study was found to be supported. The relationship between core knowledge and AIS course content is positive (β= .074). These findings reflect that in order to improve AIS course content, the developers in the Iraqi HEIs should include more subjects in the current course content that discusses core knowledge related issues. This result supported by previous studies (Janicki et al., 2008; Kavanagh & Drennan, 2008). The authors clearly revealed that the subjects that related to the core knowledge develop the AIS course content. In addition, this relationship is confirmed in the correlation test (please refer to Table 4.49) which found that the core knowledge had a significant linear relationship with the AIS course content. This reflects that the core knowledge influences AIS course content. Therefore, it is important to consider core knowledge in the AIS course content in the Iraqi HEIs.

5.3.1.2Business Environment Knowledge

In the present study, it was hypothesized that the AIS course contents in the Iraqi HEIs is influenced by business environment knowledge. Business environment knowledge refers to how businesses are organized, financed and managed and the global environment in which businesses operate. IFAC (2006) mentions in its guidelines that a broad knowledge of business, government and non-profit organization is essential for professional accountants.

The influence of business environment knowledge on AIS course content (as illustrated in Table 4.55) was found to be significant (P= .09) and positive (β= .070). The The results reflect a low level of significance. However, those results are supported by other studies, such as Trauth et al. (1993) and Lee and Fang (2008), who found that the relationship between the business environment knowledge and IS course is significant. In addition, adequate knowledge in the business environment can help the accounting graduates to work in different business organizations. In short, the hypothesis H1-2 was found to be supported. These results are in line with the results found in the correlation test (as shown in Table 4.49) which ensures that there is a linear relationship between business environment knowledge and AIS course content. Moreover, adequate knowledge in business environment helps the accounting graduates to work in different business organization.

5.3.1.3 Personal Traits

Personal traits refer to a person's general characteristics. These traits are useful for carrying out IS work in an organizational environment (Lee, Koh, Yen, Tang, 2002).

Yonug and Lee (1997) and Lee and Fang (2008), supported by McMurtrey et al. (2008), stated that personal traits have significant influence on the AIS course content. The results form regression test (as illustrated in Table 4.55) showed that personal traits (P= .001) significantly influence AIS course content in the Iraqi HEIs. The relationship was negative (β= -.198). Hence, even there is a significant relationship between personal traits and AIS course content, nonetheless this influence is negative which means that the personal traits have a negative influence on the AIS course content. This was supported by the results of the correlation test (please refer to Table 4.49), which confirmed that personal traits have significant (P= .009) linear relationship. The lack of clarity of personal traits which are required by employees in Iraq reflect the weakness of the relationship between the Iraqi universities and the society, which considered as one problem that highlighted by Al-Busisi and Al-Khafaji (2009). Furthermore, Al-Hydaree (2011) revealed that the importance of the practical perspective reflected on acquiring the students' personal traits, which is the employers' required. The author uncovered that the luck of the academic staff in the Iraqi universities led to focus on the theoretical perspective and neglect the practical perspective. Thus, Hypothesis H1-3 is rejected because of the negative influence implying that personal traits should be excluded in AIS course content in the Iraqi HEIs.

5.3.1.4 Interpersonal Skills

According to Lee and Fang (2008), this term refers to the skills required to work well in an organization or a team. Previous studies such as Daggett and Liu (1997), and Kavanagh and Drennan (2008) revealed that interpersonal skills are important to

accounting graduates. The findings of this study confirmed that interpersonal skills have significant positive influence (*P*= .001, *β*= .437) on AIS course content (as illustrated in Table 4.55). In addition, this result is supported by the correlation results test in Table 4.49 that shows a significant (*P*= .001) linear relationship between interpersonal skills and AIS course content in the Iraqi HEIs. Therefore, it is clear that the hypothesis H1-4 is supported. Based on this discussion, considering interpersonal skills is important in AIS course content in the Iraqi HEIs.

From the above discussion, Hypothesis H1, which is the AIS course content in the Iraqi HEIs is influenced by the employers' needs, is found to be partially supported. Therefore, there is a critical need to consider the employers' needs in AIS course content in the Iraqi HEIs. The next section discusses the results from Hypothesis H2 testing, which is related to the influence of professional bodies on AIS course content in the Iraqi HEIs.

5.3.2 Professional Bodies

Chayeb and Best (2005) stated that it is impossible to separate professional bodies from the academics in the AIS course content. Moreover, several researchers argued that accounting professional bodies have a role in AIS course content (Savill, 2007; Whitefield & Kloot, 2006; Johns, 2002).

In this study, it was hypothesized that the AIS course content in the Iraqi HEIs is influenced by professional bodies. The regression test results (as illustrated in Table 4.55) exhibit that professional bodies were not statistically significant (*P*= .679, β= -.016 to the

AIS course content in the Iraqi HEIs. The correlation test also confirmed that the linear relationship was found to be not significant (*P*= .654) as shown in Table 4.49.

The results reflect a weak role of the IAAA, which is the only professional organization that organizes accountancy profession in Iraq, in enhancing the accounting education. The results from this study are in tandem with Al-Humaeery (2006) and Al-Haialy (1996) that found that the role of the accounting professional bodies in Arab countries in developing accounting education does not exist. In short, it is clear that Hypothesis H2 is not supported. Therefore, the above results confirm that IAAA (as a professional accounting body) has unclear role in AIS course content in the Iraqi HEIs. In the next section, the researcher discusses the results for testing Hypothesis H3 concerning the influence of the learning environment on AIS course content in the Iraqi HEIs.

5.3.3Learning Environment

Learning environment refers to the sum of physical and teaching conditions which surround learning activities. The physical condition refers to learning resources, classroom design, natural effects, and lecturers' activities. Norris (2004) mentioned that it is not wise to isolate a course from the society that it is going to be implemented in. As mentioned in chapter two, this independent factor consists of three variables, i.e.: (1) current technological state; (2) learning approach; and (3) participatory learning and teaching methods. The next three subsections discuss the results for Hypotheses H3-1, H3-2, H3-3 in detail.

5.3.3.1 Current Technological State

Nowadays, in general, the technological environment significantly influences any educational course content (Janicki et al., 2008; Theuri & Gunn, 1998). Regarding to AIS course, Baker (2007) stated that in these modern days, it is vital to make AIS course IT-driven. In the same vein, Chayeb and Best (2005) mentioned that it is also crucial to study the state of technology in the AIS course content.

The findings from the regression test (as depicted in Table 4.55) confirm that current technological state significantly influences on the AIS course content in a positive manner (P= .001, β= .251). This result is congruent with the work done by Theuri and Gunn (1998), as had been illustrated in Table 4.49 (P= .001). In other words, Hypothesis $H_{3\text{-}1}$ is accepted, meaning that, serious consideration must be given to include the current technological state in AIS course content in the Iraqi HEIs.

5.3.3.2Learning Approach

According to Wierstra et al (2003), learning approach can be described as constructive and reproductive learning processes. Tell and Adu (2009) revealed that it was important to make the learning process to be learner-centered. In this study, it was hypothesized that the AIS course contents in the Iraqi HEIs are influenced by learning approach. The results in Table 4.55 confirm that learning approach is significant (P= .062) and positively (β=.123) influencing AIS course content. Although the significance level in this case is above .05, it is still acceptable based on the evidences from the previous studies (Harrison, 1994; Collier et al., 1990; Armitage & Boritz, 1986).

Therefore, Hypothesis H3-2 is found to be supported in this study. Thus, the AIS course content in Iraqi HEIs must consider the learning approach as one of the elements influencing AIS course content.

5.3.3.3Participatory Learning and Teaching Methods

In any course content, it is quite important to consider participatory learning and teaching method so as to enable the lecturers to give input to the learners regarding the course content (Westrup, 2010). Although the result in Table 4.49 of correlation test shows that there is a significant (*P*= .004) linear relationship, the regression analysis findings (as shown in Table 4.55) confirm that participatory learning and teaching methods are not significant (*P*= .833) and are negative (β= -.009) influencing AIS course content. As mentioned by Elameer and Idrus (2010), Iraqi HEIs are still using the traditional teaching /learning methods and most of the AIS lecturers in the Iraqi HEIs have uncertain knowledge about the modern learning/teaching methods. All these justify the rejection of H3-3. Thus, at this stage, the AIS course content in the Iraqi HEIs should be in line with the current learning and teaching method applied in the Iraqi HEIs; this also justifies that applying a modern course content suggested by the international professional bodies is impossible because it requires the of learning and teaching methods.

From the above discussion, two variables of learning environment had significant influence on AIS course content, while the last one was not significant. Therefore, Hypotheses H3, which is "the AIS course content in the Iraqi HEIs is influenced by the learning environment", is partially supported in this study. Therefore, the AIS course

content in the Iraqi HEIs should be concerned with two variables, i.e., current technological state and learning approach. The next section discusses the result for Hypothesis H4 testing, which is related to the influence of IFAC recommendation on AIS course content in the Iraqi HEIs.

5.3.4International Federation of Accounting Committee Recommendation

Chayb and Best (2005) revealed that IFAC guidelines include the required IT knowledge that should be covered by the AIS course content. Dillon and Kruck (2008) argued that in order to develop a good AIS course content, it is important to integrate IT knowledge components. As discussed in chapter two, this factor consists of three variables, i.e.: (1) IT competency; (2) IT control knowledge; and (3) general IT knowledge. After factor analysis test, another new variable appeared, namely, general ICT knowledge. The next four subsections discuss the regression analysis results for all these variables.

5.3.4.1Information Technology Competency

Competency can be described as the ability to perform according to a defined standard with reference to the real working environment (IFAC Education Committee, 2003a:12). Competency can also mean tasks performed in the workplace according to defined standards (IFAC Education Committee, 2003b:12). In this research, it was hypothesized that AIS course content is influenced by IT competency.

From the regression test results (Table 4.55) it can be seen that IT competency has a significant and positive influence (P= .002, β= .151) on AIS course content. The result of

the correlation test (please refer to Table 4.49) confirmed that there is a significant (*P*= .001) linear relationship between IT competency and AIS course content. This is in tandem with previous studies such as Andrews and Wynekoop (2004), and Mounce et al. (2004). According to Mounce et al. (2004), the integration of IT competency in the AIS course content is very important. It is obvious that the Hypothesis H4-1 is supported. Hence, there is a need to pay attention to IT competency as one of the vital elements in the AIS course content in the Iraqi HEIs.

5.3.4.2Information Technology Control Knowledge

According to IFAC (2006), it is important to integrate IT audit concepts in the accounting curriculum. Coe (2006) said that the lack of textbooks and unqualified lecturers are recognized as the main obstacles to the integration of IT auditing concepts in the AIS course.

The empirical findings from regression result (Table 4.55) refer that IT control knowledge has significant (*P*= .078) and negative (β= -.086) influence on AIS course content. Meanwhile, there is a significant (*P*= .007) and positive relationship between these two variables as identified in the correlation test (see Table 4.49). Although the regression result in Table 4.55 shown a significant relationship between IT control knowledge and AIS course content, it is however concluded that this has a negative influence on this relationship. Therefore, there is a need to clarify these contradicting results between regression and correlation findings. According to COFE (2009), the real work of the professional accounting in Iraq was operated widely with the manual

accounting system. In addition, one possible reason is that, in Iraqi HEIs context, the topics related to the IT control knowledge were already included under another course (i.e., audit and control) (Othman, 2009), which may confuse the accounting students, and thus, create an opposite effect instead of the positive influence as it was expected. For this reason, Hypothesis H4-2 is not supported.

5.3.4.3General Information Technology Knowledge

It is argued by IFAC that one of the criteria for evaluating the accounting graduates is their ability to work in an IT environment (Chayeb & Best, 2005). However, Ismail (2009) stated that in general, accounting programs all over the world, have not significantly integrated IT knowledge and skills into the accounting curriculum. This study found that the general IT knowledge has a significant positive influence (P= .001, β=.263) in AIS course content. Therefore, H4-3 is supported (Table 4.55). This reflects the importance of the general IT knowledge in AIS course content.

5.3.4.4General Information Communication Technology Knowledge

Wessels (2005) stated that ICT is seen as one of the key drivers in changing the business environment because it is integrated into almost all aspects of business. According to UN (2003) ICT is an umbrella term that includes any communication device or application, encompassing, radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning.

The results from regression test, which are illustrated in Table 4.55 show that general ICT knowledge has no significant relationship (P= .566, β= .030) with AIS course content. In other words, Hypothesis H4-4 is not supported. These results are parallel with the study conducted by Accascina (2006). The author stated that ICT in the Arab region faces many challenges, namely: (1) human resources that are unfamiliar with the ICT; (2) political situations; (3) language used is primarily English or French; and (4) the infrastructure. In Iraq, Elameer and Idrus (2010) revealed that the lack of ICT infrastructure is so ubiquitous in governmental offices and universities. Therefore, it is not surprising to observe general ICT knowledge has no significant influence on AIS course content in Iraqi HEIs. On the other hand, the correlation test reflected a significant (P= .001) liner relationship between general ICT knowledge and AIS course content.

From the aforementioned discussions, it is clear that Hypothesis H4, which considers IFAC recommendation as one of the critical success factors for the AIS course content in the Iraqi HEIs, is partially supported. Thus, IT competency, IT control knowledge, and the general IT knowledge should be considered in AIS course content in the Iraqi HEIs. The next section discusses the last hypothesis of this study, which is related to the moderating effect of instructors' characteristics.

5.3.5Moderating Effect of Instructors' Characteristics

Many researchers argued that instructors play an important role in any curriculum improvement process (Ismail & Salim, 2005; Clark et al., 1995; Saloojee, 2004). In the same vein, Senik and Broad (2011) revealed that instructors are considered important in

integrating IT knowledge in accounting education. In this study, it was hypothesized that IFAC recommendation as one of the critical success factors in AIS course contents, is moderated by instructors' characteristics. As indicated in Table 4.56, by using split model regression and graphical method[12], it was revealed that the interaction between general ICT knowledge and instructors' characteristics was not significant, while the other interactions, which are IT competency and instructors' characteristics, IT control knowledge and instructors' characteristics, and general IT knowledge and instructors' characteristics, were significant. These findings are consistent with Groomar and Murthy (1996) and Saloojee (2004) who found that the instructors' characteristics have a moderating effect on the relationship between IFAC recommendation and AIS course content. In brief, based on Baron and Kenny(1986) technique for testing moderating variables, it is declared from the three steps [(1) independent variables with dependent variable, (2) moderate variable with dependent variable, and (3) moderate variables and the interaction (independent* moderator) with the dependent] that the second step of the hierarchical regression test (see Table 4.56) that there is no direct relationship (P=.460, β= .041) between instructors characteristics and AIS course content. Meaning that, in this study, instructors characteristics acts as a moderator (see Section 4.9.3). Sharma et al. (1989) also have supported this technique for testing moderating effect. Next sub-sections discuss the result in detail.

5.3.5.1Information Technology Competency

In this study, it was hypothesized that the influence of IT competency on the AIS course content is moderated by instructors' characteristics. The results in Table 4.56 illustrate

[12] Please refer to Appendix D -5

that the relationship was significant (*P*=.001) and negative (β= -.647). These results highlighted the role of the instructors' characteristics on the relationship between IT competency in AIS course content in Iraqi HEIs. The results show that instructors' characteristics change the relationship between IT competency from positive to negative (see Appendix D-4). According to Zikmund et al. (2010, p.492), in some cases, the moderator variable change the nature of the relationship between independent variable and dependent variable. However, in this case, the potential reason that led to this unexpected result may lies in the low level of IT competency of accounting lecturers in the Iraqi HEIs (Al-Jaboree, 2012; Al-Sakaa, 2002). Thus, Hypothesis H5-1 is not supported.

5.3.5.2Information Technology Control Knowledge

This study hypothesized that the influence of IT control knowledge on AIS course content in the Iraqi HEIs is moderated by instructors' characteristics. The results of the hierarchical regression test (as illustrated in Table 4.41) indicate significant positive relationship (*P*=.023, β= .849) between them. This means that the relationship between IT control knowledge and AIS course content is more extensive if the instructors' characteristics have a high IT control knowledge. These results were found to be in line with Othman (2009). The author revealed that there is a need to consider the acquired experience of the instructors in auditing and control in order to include the subjects about auditing and control area in IT environment. Therefore, Hypothesis H5-2 is supported in this study.

5.3.5.3General Information Technology Knowledge

As discussed earlier, Hypothesis H5-3 argues that the influence of general IT knowledge on AIS course content is moderated by instructors' characteristics. The results of the hierarchical regression test that are shown in Table 4.56 indicate significant (*P*= .001) and positive (β= .856) relationship among the aforementioned variables. Therefore, it is important to consider the role of instructors' characteristics to enhance the influence of general IT knowledge on the AIS course content. The results of the current study found to be in the same vein of study Ismail and Salim (2005) highlighted that the level of integration of IT be determined by the acceptance of instructors. This acceptance depends on their knowledge about the IT, which is acquired based on their efforts to develop their own IT knowledge. Based on the above significant (*P*= .001) and positive (β= .856) results, the hypothesis H5-3 is found to be supported in this study.

5.3.5.4General Information Communication Technology Knowledge

In the current study, it was hypothesized in Hypothesis H5-4 that the influence of general ICT knowledge on AIS course content is moderated by instructors' characteristics. The findings from the hierarchical regression test (Table 4.56) illustrate that the relationship was not significant (*P*=.922) and negative (β= -.013). From these results, it is declared that the relationship between AIS course content in the Iraqi HEIs and general ICT knowledge is not influenced by the moderating effect of instructors' characteristics. These results were not surprising based on the real situation of ICT in the Arab countries in general and Iraq in particular (Khoroshilov, 2010). This situation is declared in a report conducted by UNECO in 2011. The report declared that ICT as teaching tools have not

been utilized in Iraqi HEIs because of the Inadequate ICT related infrastructure. In addition, the report revealed that the academic staffs do not have enough experience in ICT, regarding to the situation of the ICT related infrastructure. The insignificant (*P*= .922) and negative (β= - .013) results confirmed that the hypothesis (H5-4) is rejected.

Based on the R^2 result (refer to Table 4.56) it is clear that R^2 value increased from .631 to .854 which according to Baron and Kenney (1986) indicate, that instructors' characteristics enhance the influence of IFAC recommendation (i.e., IT control knowledge and general IT knowledge) on AIS course content in the Iraqi HEIs. Therefore, the hypothesis (H5) is found to be partially supported. Regarding to the above results, it is clear that the hypotheses H5-2 and H5-3 are supported, while the hypothesis (H5-1 and H5-4) are not supported.

5.4Summary

The purpose of this study is to provide evidence concerning the factors that influence AIS course content in the Iraqi HEIs. Iraq faced many hardships over the last 30 years. The hardest time was in the period between 1990 until 2003, which was during the UN and Security Council economic sanctions (Al-Janabi & Urban, 2011). In turn, Iraqi HEIs have a long and hard journey ahead of them before modern AIS course contents recommended by many international bodies, such as IFAC, can be implemented. To assist Iraqi HEIs in this process, two research questions were developed: (1) what are the critical success factors that influence the Iraqi AIS course content?; and (2) Is the influence of IFAC recommendation on AIS course content moderated by instructors' characteristics?. To

answer these questions, a theoretical framework and research hypotheses were developed. Also, a questionnaire was utilized for collecting data from the respondents and the data was analyzed using SPSS V.15 software.

The relationships between AIS course content (dependent variable) and 12 independent variables were examined by using multiple regression analysis; while the hierarchical multiple regressions were conducted to test the role of instructors' characteristics as moderating variable between IFAC recommendation and AIS course content.

From the findings, it was confirmed that the current state of the AIS course content is unacceptable. In addition, it was found that there are a number of variables that influence AIS course content. Those variables are core knowledge, business environment knowledge, interpersonal skills, current technological state, learning approach, IT competency, IT control knowledge, and general IT knowledge. On the other hand, the variables of personal traits, professional bodies, participatory learning and teaching methods, and general ICT knowledge do not have a significant impact on the AIS course content. The results of the instructors' characteristics as a moderating variable between IFAC recommendation and AIS course content relationship, declared that instructors' characteristics enhance the influence of IT control knowledge and general IT knowledge on AIS course content. Although, the results of Hierarchical Regression test confirmed that IT competency have significant relationship but the hypothesis H5-1 was rejected in this study because of the negative manner.

5.5Conclusion

This study concerns AIS course content in the Iraqi HEIs. It includes 12 independent variables (i.e., core knowledge, business environment knowledge, personal traits, interpersonal skills, professional bodies, current technological state, learning approach, participatory learning and teaching methods, IT competency, IT control knowledge, general IT knowledge, and general ICT knowledge). Additionally, instructors' characteristics is included in this study as a moderating variable between IFAC recommendation and AIS course content. By testing the sixteen hypotheses against AIS course content, only nine hypotheses were found to correlate with AIS course content. For instance, there is a significant relationship between AIS course content in the Iraqi HEIs among the accounting lecturers with the core knowledge, business environment knowledge, interpersonal skills, current technological state, learning approach, IT competency, IT control knowledge, and general IT knowledge. Therefore, it is important to consider these variables when the MHESR improve the AIS course content in the Iraqi HEIs. Additionally, this study found that the instructors' characteristics enhance the relationship between IT competency, IT control knowledge, general IT knowledge and the AIS course content. This means that to enhance the influence of IT competency, IT control knowledge, and general IT knowledge in the AIS course content, the Iraqi HEIs should take into consideration the instructors' characteristics. There is no significant relationship between professional bodies, participatory learning and teaching methods, general ICT knowledge and AIS course content. Furthermore, personal traits found in this study significant relationship with AIS course content, but this relationship is negative,

therefore this study concluded that personal traits has not supported AIS course content improvement.

5.6Contributions

This study contributed to the literature of AIS course content in no small measure. For example, this study contributed on both practical and theoretical levels. A detailed explanation of these contributions is provided below.

5.6.1Theoretical Contribution

There are three theoretical contributions of this research. The first contribution of this research towards theory is that it integrates various theories so as to increase the knowledge of AIS course content. Moreover, this study introduces a conceptual framework that is integrated from different studies**.** The second contribution is empirically determining the suitability of various factors and validating the framework in the context of AIS course content. Also, this research used a survey method with items measuring the variables in research framework.

Lastly, this study integrated a new variable to the framework which is instructors' characteristics as moderating variable to enhance the relationship between IFAC recommendation (as independent factor) and AIS course content (as dependent variable). Instructors' characteristics were not included as moderating variable in any previous studies' framework.The methodological contribution, is discussed in the next section.

5.6.2Methodological Contribution

In terms of research methodology, this study has another contribution, which is the development and validation of the survey instrument. As the researcher stated in chapter five, the research instrument was developed based on literature of IS, accounting education, and curriculum studies. Al-Rawashdeh (2011) stated that, in the AIS research field, this effort is considered as a contribution to scientific practice. Straub, Boudreau and Gefen (2004) stressed that researchers who have the ability to involve in further exertion to create and validate instrumentation for established theoretical factors are testing the strength of the factors and theoretical link to measurement change. The authors declared that this practice represents a major contribution to scientific practice in the field. Similarly, Moore and Bendasat (1991) and Davis (1989) provided example of such work on the instrument development and validation, which the authors considered as a major contribution towards the IS field.

On the other hand, the results which were generated using the factor analysis, provided a new assessment for the attributes which can be used for assessing course content in other accounting education fields. Based on the above discussion, it is clear that developing the instrument in IS field is considered as a large contribution to research methodology.

5.6.3Contribution to Academia

There are many researches that have been done on accounting education, but not with AIS course content. Moreover, the researches that have been done are theoretical. Therefore this research fills the gap in the empirical knowledge of AIS course content.

Also, this study is considered as the first attempt to determine the factors that influence AIS course content.

As mentioned in chapters two and three, this research contributes to the literature review by examining new variables that have been never tested before in the previous studies. This variable is instructors' characteristics which represent the moderating variable in this study. Moreover, this research provides empirical evidence that there are significant moderating influence of instructors' characteristics on the relationship between IT competency, IT control knowledge, and general IT knowledge and AIS course content. Although the findings of the research contribute to theory and academia, there are several important limitations. In the next section, the researcher provides the limitations of this study.

5.7Limitationsof the Study

To emulate other researchers, the limitations of this research are offered in this section. Due to the security situation in Iraq, this research focuses on the lecturers as research respondents. However, professionals, recruiters, and students are also important. Therefore, focusing on the lecturers only is considered as a limitation in this study.

The second limitation of this research is that it did not consider variables like culture, governmental policy, and educational system, which are difficult to study in Iraq due to complex political situation. Another limitation of this study is that it emphasized on the AIS course content and not all accounting fields.

The fourth limitation is related to the analysis part especially the use of the hierarchical regression in testing the moderating influence of instructors' characteristics. As it is known, the best way to test the moderating influence is Structural Equation Modeling (SEM). Haier et al. (2010) revealed that to get significant results in SEM, it is important to have a suitable sample size which for this study, should be more than 415 respondents.

However, the above limitations shed light to future improvement in the AIS course content studies and not underrate the value of this study. As long as this study follows a rigorous process and achieves the study objectives, the importance of this study cannot be overlooked.

5.8Suggestions for Future Research

This research focuses on the AIS course content. Future work can extend this study by investigating other variables, such as:

- The influence of governmental policy, especially after the last war, because the government has changed hands many times.
- The influence of governmental policy, especially after the last war, because many governments have been changed.
- The influence of educational system on AIS course content.
- The influence of the AIS course content on AIS effectiveness in terms of developing accountants' skills/ knowledge.

On the other hand, as the findings from this research show that some of the variables have low level of significance, such as core knowledge and other variables are not significant such as professional bodies, further investigation needs to be undertaken. Also, it is important to get views from the students and recruiters when studying views on AIS course content. Moreover, it is good to know whether the three groups share the same perspectives regarding the AIS course content. Therefore, a comparative research is necessary to uncover what are the differences or the similarities between the three groups.

5.9Summary

This chapter discusses the findings that have been outlined in chapter four. Firstly in this chapter, the researcher presents the refined framework that highlights new variables which was found after factor analysis test. In the second part, the researcher discusses the research hypotheses test results, which shows that nine out of 16 alternative hypotheses are accepted. The third part of this chapter consists of the discussion of the findings. The results of this study provide insights into the factors that have significant impacts on AIS course contents in the Iraqi HEIs.Also thesummarizes, theoretical and academic contributions, conclusions, contributions, limitations and recommendations for future research are explained in this chapter.

REFERENCES

Abraham, A. (2006). Teaching and learning in accounting education: Students' perceptions of the linkages between teaching Context, approaches to learning and outcomes. *Faculty of Commerce-Papers*, 210.

Accascina, G., (2006). *Information and communication technology for development in the Arab States*, United Nation Development Programme (UNDP).

Accounting Education Change Commission (AECC) (1990). AECC urges priority for teaching in higher education. *Issues in Accounting Education, 6*(2), 330-331.

Al- Sakaa, Z., AL-Hamadany, K. I., & Al-Taaye, N. H. (2007). *Accounting role in decreasing the risk of e-disclosure to the financial report*, Paper presented at the 5th international scientific conference: About investment climate and the work of electronic banking, 4-5 July, Amman. Retrieved from: www.philadelphia.edu.jo/adfin/conf/.

Al-Arussi, A. S. A. (2008). *Determinants of financial and environmental disclosures on the internet By Malaysian listed companies.*University Utara Malaysia Sintok.

Al-Baraznjee, A. K., & Kader, L. A. (2007). *The relevance of pre-university curriculum with the knowledge of accounting a comparative study between the middle school curriculum in each of the Kurdistan Region and the United Kingdom.* Paper presented at the International Conference on Higher Education in Iraq, 11-13December. Erbil. Iraq.

Albrecht, W. S., & Sack, R. J. (2000). *Accounting education: Charting the course through a perilous future*: American Accounting Association Sarasota, FL.

Al-Busisi, H., & Al-Khafaji, H. (2009). *The quality of university scientific curriculum and techniques used in education to improve the quality of the education process reality and ambition*. Paper presented at the Quality Assurance and Accreditation Our vision for the development of future, Al-Najaf.

Al-Deek, F. F. F. (2010). *Relationship between information quality and decision effectiveness: A Study in the banking Sector In Jordan.*University Utara malaysia Sintok.

Al-Ekachee, B. A., & Al-Zubaidi, a. K. A. (2006).C*auses of low academic achievement the university students in Iraq* Paper presented at the student academic stumble who bears the responsibility, 27-30 March, Al-Shariqa. Retrieved from: www.arab-acrao.org/motamarat/motamarat-27-1.

Al-Fadel, M. (2002). Assessing the role of accounting education in building the professional skills and attitudes developed: Empirical Study to the case of Iraq. *Journal of Al-Turath University College, 2*, 32-50.

Al-Gahtani, S., Hubona, G., & Jijie, W. (2007). Information technology (IT)in Saudi Arabia: Culture and the acceptance and use of IT. *Information & Management, 44* (8), 681-691.

Al-Haialy, W. N. (1996). *Intermediate accounting* (1Ed.). Amman: Dar Haneen Publishing & Distributing.

Al-Hydaree, A. A. (2011). The reality of higher education in Iraq between the challenges and necessary, retrieved from: http://www.ahewar.org/debat/ show.art.asp?aid=287092.

Al-Hubaity, K. (2003). *Requirements of the labor market from graduates of colleges' administration and trade in the public and private sectors standards, skills, and knowledge*. Paper presented at the Arab Forum for the performance development of management and trade colleges in Arab Universities. 11-13 March. Aleppo - Syria.

Al-Humaeery, J. A. (2006). *The absence of the role of professional associations to raise the level of the accounting profession.* Sadat Academy for Administrative Sciences, Egypt.

Al-Jaboree, A. H. (2012). *Tasks of higher education in the curriculum development*. Retrieved from: http: measurement.arabe.pro/t50-topic.

Al-Jalily, M. A., & Taha, A. A. D. (2010). The use of international education standards for professional accountants in developing the accounting curriculum for bachelor stage in Iraq: A model of suggested accounting curriculum for Bachelor stage. *Tanmiat Al-Rafidain, 32*(99), 34-46.

Al-Janabi, S., & Urban, J. E. (2011). *Strategic plan for enhancing higher education computing degree programs in Iraq.* Paper presented at the "Learning Environments and Ecosystems in Engineering Education". Amman- Jordan.

Alonso D. L., & Blázquez E., F. (2009). Are the functions of teachers in e-Learning and Face-to-Face learning environments really different?. *Educational Technology & Society*, *12* (4), 331–343.

Al-Rashad, W. (1998). Build the professional skills in accounting education. *The Arab Journal of Accounting 2*(1), 15-32.

Al-Rawashdeh, A. A. (2011). *Diffusion of XBRL innovation model of adoption and usage*. University Utara Malaysia, Sintok.

AL-Sakaa, Z. (2002). *The current state of accounting education in Iraq and the development requirements*. Paper presented at the first regional conference of the Accounting and Finance Sciences.14-15 December. Mosul. Iraq.

Al-Shawee, M. (2001). Scientific bases on how to improve the level of accounting education. *Journal of Al-Turath University College, 1*, 15-27.

Al-Smadi, A. A.M. (2011). Perception of strategic human resource management among employees of Jordanian private companies. *Journal of Advanced Social Research, 1*, 100-110.

Al-Zeebary, T. H. (2007). *Requirements of the reform of higher education in Kurdistan in Iraq.* Paper presented at the International Conference on Higher Education in Iraq, 11-13 December. Erbil. Iraq.

Al-Zubee, N. F. (2011). *A working paper on the mechanism of development of the educational environment*. Retrieved from. http://alramtha.net/index.php/artical/ 17894.html.

American Accounting Association (AAA) (1986). Committee on the future structure, content and scope of accounting education (The Bedford Committee) (1986) Future accounting education: preparing for the expanded profession. *Issues inAccounting Education, 1*(1), 168–195.

Andrews, C. P., & Wynekoop, J. (2004). A framework for comparing IS core curriculum and requirement for accounting majors. *Journal of Information System Education, 15*(4), 437-445.

Ang, C. L., Davies, M. A., & Finlay, P. N. (2001). An empirical model of IT usage in the Malaysian public sector. *Journal of Strategic Information Systems, 10*(2), 159-174.

Armitage, H. M., & Boritz, A. J. E. (1986). Integrating computers into the accounting curriculum. *Issues in Accounting Education, 1*(1), 86.

Armstrong, J. & Overton, T.S. (1977). Estimating non-response bias in mail surveys. *Journal of Marketing Research, 4*, 396-402.

Arnold, V. & Sutton, S. G. (2007). The impact of enterprise systems on business and audit practice and the implication for university accounting education. *International Journal of Enterprise Information Systems3*(4): 16-28.

Aron, A. & Aron, E. N. (1999). *Statistics for psychology* (2nd Ed.). Upper Saddle River, NJ: Prentice Hall.

AY, M. (2011).Conceptual frameworks of university students regarding accounting. *African Journal of Business Management, 5*(5), 1570-1577.

Baba, H. N. B. (2004). *Corporate social responsiveness and environmental performance of small enterprises: An empirical study.* University Utara Malaysia, Sanitok.

Baddie, E. (2001). *The practice of social research* (9th Ed.). Belmont, CA: Wadsworth Publishing.

Bagranoff, N. A., Simkin, M. G., & Norman, C. S. (2009). *Core concepts of accounting information systems (11 Ed.)*. Australia: John & Wiley Sons.

Bakar, N. A. (2007). English language activities in computer-based learning environment: A case study in ESL Malaysian classroom [Electronic Version]. *GEMA Online Journal of Language Studies,* 7, 33-49. Retrieved from: /www.fpbahasa.ukm.my/linguistics/Gema/Vol7Issue1_Page33_49.pdf.

Barclay, S., Todd, C. Finlay, I., Grande, G., & Wyatt, P. (2002). Not another questionnaire maximizing the response rate, predicting non-response and assessing non-response bias in postal questionnaire studies of GPs. *Family Practice, 19* (1), 105-111.

Barkman, A. (1998) The use of live cases in the accounting information systems course. *Journal of Accounting Education, 16* (3/4), 517-524.

Barley, S. R., & Orr, J. E. (1997). *Between craft and science: Technical work in U.S.* settings. Ithaca, NY: ILR Press.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical Considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Beijerse, R. P. U. (1999). Questions in knowledge management: Defining and conceptualising a phenomenon. *Journal of Knowledge Management, 3*(2), 94-109.

Bhaskar, K. N. (1983). Computers and the choice for accounting syllabuses. *Accounting and Business Research, 13* (50), 83-93.

Biggs, J. B. (1987). Individual and group differences in study processes. *British Journal of Educational Psychology,48,* 266-279.

Blenkin, G. M., Edwards, G., & Kelly, A. V. (1992). *Change and the curriculum*. London: Paul Chapman.

Bolt-Lee, C. & Foster, S. D. (2003). The core competency framework: a new element in the continuing call for accounting change in the United States. *Accounting Education: an international journal, 13*(1), 33–47.

Bonk, C. J., & Smith, G. S. (1998). Alternative instructional strategies for creative and critical thinking in accounting curriculum. *Journal of Accounting Education, 16*(2), 261-293.

Boonmak, S. (2010). *Teaching and learning in accounting information systems for accounting courses*. Paper presented at the 10th Global Conference on Business & Economics. Rome, Italy.

Boritz, J.E. (1999). *The accounting curriculum and IT*, International Federation of Accountants. Retrieved from: http://www.ifac.org/StandardsAndGuidance/ Education/IEG11-Update.html.

Borthick, A.F. & Clark, R. (1987). Research on computing in accounting education: opportunities and impediments. *Issues in Accounting Education,2*(2), 173–192.

Borthick, F. (1996). Helping accountants learn to get the information managers want: The role of the accounting information systems course. *Journal of Information Systems,10*(2), 75-85.

Bourque, L. B., & Fielder, E. P. (1995). *How to conductsself-administered and mail survey*. London: SAGE Publications, Inc.

Bromson, G., Kaidonis, M. A., & Poh, P. (1994). Accounting information systems and learning theory: An integrated approach to teaching. *Accounting Education, 3*(2), 101-140.

Brown, J., James, F., & Balke, T. E. (1983). Accounting curriculum comparison by degree program of schools intending to seek AACSB accreditation. *Issues in Accounting Education,1*, 50-59.

Bruner, J. (1960). *The process of education*, Cambridge: Harvard University Press.

Brynjolfsson, E., & Hitt, L. M. (2000). Beyond computation: information technology, organizational transformation and business performance. *Journal of Economic Perspectives, 14*(4), 23-48.

Bybee, R. W., Buchwald, C. E., Crissman, S., Heil, D. R., Kuerbis, P. J., Matsumoto, C., & McInerney, J. D. (1990). *Science and technology education for the middle years: Frameworks for curriculum and instruction*. Washington DC: National Center for Improving Science Instruction.

Calderon, T. G., Cheh, J. J., & Chatham, M. D. (2002). An examination of current state of accounting information systems education. *The Review Of Business Information Systems, 6*(2), 29-41.

Callaghan, J., Peacock, E., & Savage, A. (2000). Assessment of an accounting information systems curriculum: An analysis of the International Federation of Accountants' International Education Guideline No. 11. *The Review of Accounting Information Systems, 4*(1), 1-12.

Canon, R. & Newble, D. (2000). *A handbook for teachers in universities and colleges*. London: Kogan Page Ltd.

Cappel, J. J. (2002). Entry-level IS Job skills: A survey of employers. *The Journal of Computer Information Systems, 42*(2), 76-82.

Carl, A. (2005). The "voice of the teacher" in curriculum development: A voice crying in the wilderness?. *South African Journal Of Education, 25*(4), 223-228.

Carr, S., & Mathews, M. R. (2004). Accounting curriculum change and iterative programme development: a case study. *Accounting Education, 13*(1), 91-116.

Carr, S., Chua, F., & Perera, H. (2006). University accounting curricula: The perceptions of an alumni group. *Accounting Education: An international journal, 15*(4), 359-376.

Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research: Qualitative and quantitative methods*. Singapore: John Wiley& Sons Ltd.

Chaker, M. N., &Abdullah, T. A. T. (2011). What accountancy skills are acquired at college?.*International Journal of Business and Social Science, 2*(18), 193-199.

Chang, C. J., & Hwang, N.-C. R. (2002). Quests on building IT-relevant accounting curricula. *Journal of Contemporary Accounting, 3*(1), 1-20.

Chang, J., & Hwang, N.C. R. (2003). Accounting education, firm training and information technology: A research note. *Accounting Education, 12*(4), 441-450.

Chayeb, L., & Best, P. (2005). *The Accounting Information Systems Curriculum: Compliance with IFAC Requirements*. Paper presented at the International Conference on Innovation in Accounting Teaching & Learning,Hobart,eprints.qut.edu.au.

Cheh, J. J. (2000). Innovator's dilemma and an association for accounting information system educators. *The Review Of Business Information Systems, 4*(4), 77-98.

Chung, J., & Davis, I. K. (1995). An instructional theory for learner control: Revisited. In M. R. Simonson (Ed.) *Proceedings of the 1995 Annual National Convention of the Association for Educational Communications and Technology,* 72–86. Anaheim, CA: AACE.

Clark, E., Adams, D., Annice, C. Battye, G., Black, S., Bouvin, P., Brooks, R., Cheetham, A., Favre, J.P., Johnston, S. Klein, D., McCormack, C. Thompson, B. and Mansbridge, L. (1995). *The role of information technology and university teaching: University of Canberra Working Party Report*, University of Canberra, Canberra.

Coakes, S. J., Steed, L., & Ong, C. (2009). *SPSS: Analysis without anguish: Version 16 for windows.* Australia: John Wiley & Sons Australia, Ltd.

Coe, M. J. (2006). Integrating IT audit into the AIS course. *The Review Of Business Information System, 10* (1), 105 -119.

Cohen, B. H. (2001). *Explaining psychological statistics* (2nd Ed.). New York: Wiley.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression /correlation analysis for the behavioral sciences,* (3rd Ed). Mahwah, NJ: Lawrence Erlbaum Associates.

Cohen, L., Manion, L., Morrison, K., & Morrison, K. R. B. (2007). *Research methods in education* (6 Ed.). London: Routledge Falmer.

Colet, N. R., & Durand, N. (2004). Working on the bologna declaration: Promoting integrated curriculum development and fostering conceptual change. *International Journal for Academic Development, 9*(2), 167-181.

Collier, P. A., Kaye, G. R., Spaul, B. J., & Williams, B. C. (1990). The use of computer in accounting courses: a new perspective-a comment. *Accounting and Business research, 20* (80), 353-400.

Committee of Financial Expert (COFE). (2009). *Report from COFE to IAM at its meeting in Amman, Jordan* Amman: Committee of Financial Expert. Retrieved from:http://www.iamb.info/.

Considine, B., Parkes, A., Olesen, K., Speer, D., & Lee, M. (2010). *Accounting information system: understanding business process* (3 Ed.). Milton: Johan Wiley & Sons Australia, Ltd.

Cooper, B. (2002). Accountant of the future. *Accounting and Business*, 35 -37.

Cortina, J. M. (1993). Interaction, nonlinearity, and multicollinearity: implications for multiple regression. *Journal of Management, 19*(4), 915-922.

Cougar, J.D., Davis, G.B., Dologite, D.G., Feinstein, D.L., Gorgone, J.T., Jenkins, A.M., Kasper, G.M.,Little, J.C., Longenecker, Jr., H.E. & Valacich, J.S. (1995). IS ' 95: Guideline for undergraduate IS curriculum. *MIS Quarterly, 19*(3), 341-359.

Cranton, P. & King, K.P. (2003). Transformative learning as a professional development goal. *New Directions for Adult and Continuing Education, 98*, 31-37.

Cranton, P. (1996). *Professional development as transformative learning: New perspectives for teachers of adults.* San Francisco, CA: Jossey-Bass Inc.

Creswell., J. W. (2008). *Educational research planning, conducting, and evaluating quantitative and qualitative research* (3 Ed.). USA: Pearson Education International.

Daggett, P. D., & Liu, W. Y. (1997). Prepared to perform? Employers rate work force readiness of new grads. *Journal of Career Planning & Employment, 57*(3), 52-56.

Dahawy, K., Merino, B. D., & Conover, T. L. (2002). The conflict between IAS disclosure requirement and the secretive culture in Egypt. *Advances in International Accounting, 15*(1), 203-228.

Dahawy, K., Tooma, E., & Kamel, S. (2005). The use of IT in teaching accounting in Egypt the case of BeckerConviser. *Communications of the IIMA, 5*(3), 25-34.

Dalal, N. P. (1994). Higher-order thinking in MIS. *Journal of computer information systems, 34*(4), 26-30.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 3*(3), 319-340.

Davis, J. R., & . Leitch, R. A. (1988). Accounting information systems courses and curricula: new perspectives. *Journal of Information Systems, 2*(2), 153-166.

De Santisteban, AV. (2005). Sanctions, war, occupation and the De-development of education in Iraq. *International Review of Education, 51*, 59–71.

Deppe, L. A., Sonderegger, E. O., Stice, J. D., Clark, D. C., & Streuling, G. F. (1991). Emerging competencies for the practice of accountancy. *Journal of Accounting Education 9*(2), 257-290.

DeVaus, D. A. (1986). *Surveys in social research* (4 Ed.). London: UCL Press Ltd.

Dillman, D. A. (1978). *Mail and telephone surveys: The total design method*. New York: John Wiley & Sons.

Dillon, T. W., & Kruck, a. S. E. (2008). Identifying employer needs from accounting information systems prograrams. *Journal of Information systems Education, 19*(4), 403 - 409.

Doll, R. C. (1989), *Curriculum improvement: Decision making and process*. Boston: Allyn and Bacon.

Donor Committee for Enterprise Development (DCED) (2008), *Supporting Business Environment Reforms: Practical Guidance for Development Agencies (*8^{Ed}*)*. Retrieved from :http://www.enterprise-development.org/resources /items.asp?cat= Guidelines.

Dull, R. B., & Gelinas, J.U. J. (2008). *Accounting information systems*, (7Ed) . Mason, OH: Thomson South-Western.

Dundar, H. D., & Lewisb, D. R. (1999). Equity, quality, and efficiency: Effects of reform in Turkish higher education. *Higher Education Policy, 12*, 343 - 366.

Elameer, A. S. F., & Idrus, R. M. (2010). The readiness for an e- learning system in the university of Mustansiriyah (UoMust) Baghdad-Iraq. *Malaysian Journal of Educational Technology, 10*(2), 31-41.

Elliott, R. K. (1992), the Third wave breaks on the shores of accounting. *Accounting Horizons, 6*(2), 61-85.

Emery, J., Crump, C., & Bors, P. (2003). Reliability and validity of two instruments designed to assess the walking and bicycling suitability of sidewalks and roads. *American Journal of Health Promotion, 18*(1), 38-46.

Fatemi, A. H., Pishghadam, R., & Asghari, A. (2012). Attribution Theory and Personality Traits among EFL Learners. *International Journal of Linguistics, 4*(2), 229-243.

Fayol H. (1949). *General and industrial management*. New York: Pitman Publishing.

Field, S., & Hoffman, A. (1994). Development of model for self-determination. *Career Development for Exceptional Individuals, 17*(2), 159-169.

Feshbach, S., Weiner, B., & Bohart, A. (1996). *Personality* (4_{th} ed). Lexington, Massach-usetts: D. C. Heath and Company.

Finch, C. R., & Crunkilton, J. R. (1999). *Curriculum development in vocational and technical education*. Boston: Allyn and Bacon.

Fordham, D. R. (2005), New roles for AIS courses: A surprising finding from a case study. *Journal Of Information systems, 19*(1), 113-129.

Frederickson, J. R., & Pratt, J. (1995). A model of the accounting education process. *Issues in Accounting education, 10*(2), 229-246.

Friedman, J. N., Goldman, R. D., Srivastava, R., & Parkin, P. C. (2004). Development of a clinical dehydration scale for use in children between 1 and 36 months of age. *The Journal of Pediatrics, 145*(2), 201-207.

Fuchs, M., Höpken, W., Mirski, P., Lembacher, A. & Ainedter, B. (2007). E-tourism curriculum development a destination management organization perspective. *Information and Communication Technologies in Tourism, 13,* 523-535.

Galbraith, J. K. (2007). *The new industrial state.* New Jersey: Princeton University Press.

Garfield, R., Dresden, E., & Boyle, A. J. S. (2003). Health care in Iraq. *Nearing Outlook, 51*(4), 171-177.

Gay, L. R. & Diehl, P.L. (1992). *Research methods for business and management*. New Jersey: Prentice Hall international, Inc.

Gelinas, U. J., & Dull, R. B. (2009). *Accounting information system*. 8^{th} . Canada: Nelson Education, Ltd.

Gibbons, C., Dempster, M., & Moutray, M. (2009). Index of sources of stress in nursing students: a confirmatory factor analysis. *Journal of Advanced Nursing, 65*(5), 1095-1102.

Gogan, J., Smith-David, J., Eining, M., Fedorowicz, J., & Porter, L. (1999*). Rebirth of accounting information systems curricula*. Paper presented at the Americas Conference on Information Systems (AMCIS), USA.

Goodhue, D. L., & Thompson, R. L.,(1995). Task-technology fit and individual performance. *MIS Quarterly,19* (2), 213-236.

Gorsuch, R. L. (1983). *Factor analysis* (2nd Ed.). Hillsdale, NJ: Erlbaum.

Grant, P. (2007). *Popularity versus leadership: the impossible challenge for Australian universities.* Paper presented at the 18th Australasian Conference on Information Systems, 5–8 December, Toowoomba.

Gravetter, F. J., & Wallnau, L. B. (2009). *Statistics for the behavioral sciences* (8 Ed.). Belmont, USA: Wadsworth: Cengage learning.

Groomer, S. M., & Murthy, a. U. S. (1996). An empirical analysis of the accounting information systems course. *Journal Of Information Systems, 10*(2), 103-127.

Grossman, G. M., Onkol, P. E., & Sands, M. (2007). Curriculum reform in Turkish teacher education: Attitudes of teacher educators towards change in an EU candidate nation. *International Journal of Education Development, 27*(2), 138 - 150.

Guba, E. & Lincoln, Y. (1994). *Competing paradigms in qualitative research. In N. Denzin& Y. Lincoln (Eds.), Handbook of qualitative research*(105-117). Thousand Oaks: Sage.

Guilford, J. P., & Christensen, P. R. (1973). The one-way relation between Creative Potential and IQ. *Journal of Creative Behavior, 7*(4), 247-252.

Gulf Cooperation Council Accounting & Auditing organization. (2003). General rules for continuing professional education. August 2003. Retrieved from: http://www.gccaao.org/edr.html.

Haghighi, A. M., Vakil, R., & Wetiba, J. K. (2006). Reverse-traditional/hands-on: An alternative method of teaching statistics. *Applications and Applied Mathematics (AAM): An International Journal, 1*(1), 62-82.

Hair, J. F. Black, W. C., Babin, B. J., & Anderson, R. E (2010). *Multivariate data analysis*, (7Ed). Englewood Cliffs, New Jersey: Prentice Hall.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2006). *Multivariate data analysis* (6 Ed.). New Jersey: Pearson Prentice.

Hair, J. F., Money, A., Page, M., &Samouel, P. (2007). *Research methods for business*. New York: John Wiley& Sons, Ltd.

Hall, J. A. (2004), *Accounting information system* (4 Ed.). USA: Thomson.

Hall, J. A. (2008). *Accounting information systems* (6th Ed.). Mason, OH: South-Western.

Harb, I. (2008). *Higher education and the future of Iraq*. Washington: United States Institute of Peace. Retrieved from:http://dspace.cigilibrary.org/jspui /handle/ 123456789/15128.

Harris, M. (1989). *Fashion me a People: Curriculum in the Church*. Louisville: Westminster Johan Knox Press.

Harrison, D. (1994). *Designing, writing and implementing courses for an IT-integrated professional accounting program in accounting education for the 21st century: The global challenges*. International accounting section, American Accounting Association. USA.

Harvey, L., Mason, S., &Ward, R. (1995). *The role of professional bodies in higher education quality monitoring*. Birmingham,Quality in Higher Education Project.

Harwood, E.M. (1999). Student perceptions of the effects of classroom assessment techniques (CATs). *Journal of Accounting Education, 17* (4), 51-70.

Havelka, D., & Merhout, J. W. (2009). Toward a theory of information technology professional competence. *The Journal of Computer Information Systems, 50*(2), 106-116.

Heagy, C. D., & McMickle, P. L. (1988). An empirical investigation of the accounting systems course: Academic practice versus practitioner needs. *Issues in Accounting Education, 3*(1), 96-107.

Healy, M.J.R. (1984). The use of R^2 as a measure of goodness of fit. *Journal of the royal statistical society, Series A (Genera*l), 147(4), 608-609.

Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.

Hlavac, J. (2011). Sociolinguistic profiles of users and providers of lay and professional interpreting services: The experiences of a recently arrived Iraqi language community in Melbourne. *The International Journal for Translation & Interpreting, 3*(2), 1-32.

Hoffman, A., & Field, S. (1995). Promoting self-determination through effective curriculum development, international in school and clinic. *Journal of Special Education, 37*(1), 174-183.

Hugh, C. (1995). *Introduction to research methods and statistics in psychology* (2 Ed.), London: Hodder &Stoughton Educational.

Hutchinson, P.D., White, C.G. and Daigle, R.J. (2004). Advances in Accounting Information Systems and International Journal of Accounting Information Systems: First Ten Volumes (1992-2003). *International Journal of Accounting Information Systems, 5*, 341-365.

Ingram, R. W. (1988). *Computer integration into the accounting curriculum: Case studies*. Coopers & Lybrand Foundation, American Accounting Association. Accounting Education Series, Vol. No. 8.

International Accounting Education Standards Board (IAESB)) (2010). *Handbook of international education pronouncements*. Retrieved from: www.ifac.org (accessed on 27 January 2011).

International Federation of Accountants (1998). *Competence-Based approaches to the professional preparation of accountants* .New York: IFAC.

International Federation of Accountants, Education Committee (IFAC Education Committee). (2003a). *International Education Guideline 11: Information Technology for Professional Accountants*. New York, IFAC.

International Federation of Accountants, Education Committee (IFAC Education Committee). (2003b). *International Education Paper IEP 2: towards competent Professional Accountants*. New York: IFAC.

International Federation of Accountants, Education Committee (IFAC) (2006). *Proposed international education practice statement 2.1: Information technology for professional accountants,* International Accounting Education Standards Board.

International Federation of Accountants. (2006). Updated guidance for professional accountants on IT. *Accountancy Ireland, 38*(5), 20.

Iraq Higher Education Organizing Committee. (2007). *International Conference for Higher Education in Iraq- final report.* Erbil: Higher Education Commission of Iraq-London.

Ismail, N. A. (2004). *AIS Alignment in Small and Medium Sized Firms.* Loughborough University. UK.

Ismail, N. A. (2009). Accounting information system: Education and research agenda. *Malaysian Accounting Review, 8*(1), 63-80.

Ismail, N. A. (Ed.). (2006). *Accounting Information Systems: Teaching and Research Agenda, CeRIA Accounting Seminar, The Survival of Accounting Profession: Research Agenda, UiTM Dungun.* Terengganu-Malaysia.

Ismail, N. A., & Salim, a. B. (2005). Perceptions of accounting academicians toward the issue of Information technology integration into the accounting curriculum. *Jurnal penyelidikan Pendidikan*, 7, 75-88.

Jackling, B., Cooper, B. J., Leung, P., & Dellaportas, S. (2007). Professional accounting bodies' perceptions of ethical issues causes of ethical failure and ethics education. *Managerial Auditing Journal, 22*(9), 928-944.

Jain, T. R., Trehan, M., & Trehan, R. (2006). *Business environment.* Delhi: Prince Print Process.

Janicki, T. N., Lenox, T., Logan, R., & Woratschek, a. C. (2008). Information system technology employer needs survey: Analysis by curriculum topic. *Information Systems Education Journal, 6*(18), 1-15.

Jarnagin, B. D. (2006). Incorporating financial accounting research into the accounting curriculum. *Journal of College Teaching & Learning, 3*(10), 39-52.

Johanson, R. A., and Wichern, D. W. (2007). *Applied multivariate statistical analysis* (6th Ed.). NJ: Pearson Education International.

Johns, A. (1995). Competency standards for professional accountants in Australia and New Zealand. *Accounting Education: an international journal, 4*(1), 37-42.

Johns, A. (2002). *Higher education at the crossroads.* Australia: Higher education Crossroads.

Kaiesr, H. F. (1974). An index of factorial simplicity. *Psychometrika, 39* (1), 31-36.

Kallos, D. (2003). *Teachers and teacher education in Sweden: recent developments* Paper presented at the International Meeting "La formazione iniziale degli insegnanti in Europa, Bologna, Italy.

Kämäräinen, P., & Streumer, J. (1998). Curriculum development, new learning environments and transfer of innovations in Europe. *CEDEFOP Vocational Education and Training–the European research field. Background Report, 2.*

Kavanagh, M. H., & Drennan, A. L. (2008). What skills and attributes does an accounting graduate need? Evidence from student perceptions and employer expectations. *Accounting and Finance, 48*, 279 -300.

Kashash, H., & Al-Mosawee, A. (2009). *The performance of university students and its impact in determining the efficiency of institutions of higher education*. Paper presented at the first conference for Quality Assurance and Accreditation at the University of Kufa, Kufa- Iraq.

Kaye, G. R. (1985). Teaching strategies in computers and accounting. *British Accounting Review, 17*(1), 22-36.

Keefe, J. W. (1979). Learning style: An overview. NASSP's *student learning styles: Diagnosing and proscribing programs* (1-17). Reston, VA. National Association of Secondary School Principals.

Kennan M.A., Willard P., D.C., K., & Wilson, C. S. (2008). IS knowledge and skills sought by employers: A content analysis of Australian IS early career online Job advertisements. *The Australian Journal of Information System (AJIS), 15*(2), 1-21.

Kerr, A. W., Hall, H. K., & Kozub, S. A. (2003). *Doing Statistics with SPSS*. Thousand Oaks, CA: Sage Publishing Ltd.

Khoroshilov, A. (2010). *UNESCO Teacher Development Policies and Programmes Including ICT*. Paper presented at the ICT in Teacher Education: Policy, Open Educational Resources and Partnership, St. Petersburg, Russian Federation.

Kimble Ed.D, C. (May, 1999). *The impact of technology on learning:Making sense of the research.*Retrieved from Policy Brief. Aurora, CO: Mid-continent Regional Educational Laboratory Online. Retrieved from:www.mcrel.org/pdf/ /5983PI PBImpa ctTechnology.pdf.

Kliebard, H. M. (1989). Problems of definition in curriculum. *Journal of Curriculum and Supervision, 5*(1), 1-5.

Kline, P. (1979). *Psychometrics and psychology*. London: Academic Press.

Kolb, D. A., Rubin, I. M. and McIntyre, J. M. (1974) *Learning and problem solving: On the management and the learning process*, in H. A. Simon (Ed.). Englewood Cliffs, NJ: Prentice-Hall.

Kosugi. R, Hamanaka. Y, Hori. Y &Nakajima,Y (2007). *University student and their employment- consideration from the viewpoint of supporting the transition to work and human resource development- summary*. HLPT research report. NO. 78 1-12. Retrieved from http://www.jil.go.jp/english/reports/documents/jilpt-research/no78.pdf.

Krejcie, R.V. & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*, 607-610.

Kumar, R. (1996). *Research methodology: A step-by-step guide for beginners*, London: Sage Publications Ltd.

Laufer, D., & Watkins, L.(1990). The effect of experiential accounting work experience on student performance in intermediate accounting courses. *Developments in Business Simulation & Experiential Exercises, 17*, 105-108.

Lawrence, G. D. (1969). Bruner: Instructional theory or curriculum theory?. *Theory into Practice, 8*(1), 18.

Lee, D. M. S., Trauth, E. M., & Farwell, D. (1995). Critical skills and knowledge requirements of IS professionals: A joint academic/industry investigation. *MIS Quarterly, 19*(3), 313-340.

Lee, S., & Fang, X. (2008). Perception gaps about skills requirement for enter-level IS professionals between recruiters and students: An exploratory study. *Information Resources Management Journal, 21*(3), 39-62.

Lee, S., Koh, S., Yen., D. C., & Tang, H. (2002). Perception gaps between IS academics and IS practitioners: An exploratory study. *Information and Management, 40*, 51-61.

Leedy, P. D., & Ormrod, J. E. (2005). Practical research: Planning and design (8th Ed). Upper SaddleRiver, NJ: Prentice Hall.

Lightfoot, J. M. (1999). Fads verses fundamentals: The dilemma for information system curriculum design. *Journal of Education for Business, 75*(1), 43-50.

Lin, S.Y & Sneed, J. (2005). University foodservice managers' and employees' perceptions of food safety training and managers' comparison of student and full-time employee's food safety practices.*Journal of Food Service Management and Education Archives,1*,1-14

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong S. (1999). Sample size in factor analysis. *Psychological Methods, 4*, 84-99.

Macdonald, J. B. (1965). *Educational models for instruction-introduction*. In J. B. Macdonald & R.R. Robert (Eds), *Theories of instruction* (p. 6).Washington D.C.: Association for Supervision and Curriculum Development.

Mamidi. M.R. & S., Ravishankar (1989*) Curriculum development and educational Technology*. New Delhi: Sterling Publishers Private Ltd.

Manochehr, N. N. (2006). The Influence of learning styles on learners in e-Learning environments: an empirical study. *Computers In Higher Education Economics Review, 18*, 10-14.

Marzano, R. (2003). W*hat works in schools: Translating research into action.* United States of America: Library of Gangers Cataloging.

Mathematical Sciences Education Board (MSEB). (2004). *On evaluating curricular effectiveness: Judging the quality of K-12 mathematics evaluations*. Washington DC: The National Academies Press.

Matteson, M.T., Ivancevich, J.M. & Smith, S.V. (1984). Relation of type a behaviourto performance and satisfaction among sales personnel. *Journal of Vocational Behaviour*, 25, 203-214.

McKelvie, S. J. (1978). Graphic rating scale-How many categories?. *British Journal of Psychology, 69*, 185-202.

McMickle, P. L. (1989). Accounting systems: Past, present and future, *The Accounting Systems Journal, 1*(1), 1-3.

McMurtrey, M. E., Downey, J. P., Zeltmann, S. M., & Friedman, W. H. (2008). Critical skill sets of entry-level IT professionals: An empirical examination of perceptions from field personnel. *Journal of Information Technology Education*, 7, 101-12.

McNaught, C. (2002). Adopting technology should mean adapting it to meet learning needs. *On the horizon, 10*(4), 14–18.

Meer, G. V., & Adams, A. M. (1996). Accounting information system curriculum: An Empirical analysis of the views of New Zealand-based accounting academic and practitioner. *Accounting Education, 5*(4), 283-295.

Mezirow, J. (2000). *Learning as transformation: Critical perspectives on a theory in progress*. San Francisco: Jossey-Bass.

Mgaya, K. V., & Kitindi, E. G. (2009). Essential skills needed by accounting graduates in a developing country: The views of practicing accountants and accounting educators in Botswana. *International Journal of Accounting, Auditing and Performance Evaluation, 5*(3), 329-351.

Miles, J., & Shevlin, M. (2001). *Applying regression and correlation* (1 Ed.), USA: Sage Publications Ltd.

Milus, S. (2004). The Institutions need for comprehensive auditing strategies. *Information Systems Control Journal, 6*, 1-6.

Ministry of Higher Education and Scientific Research. (2009). *Curriculum development.*
Ministry of Higher Education and Scientific Research. (2010). *Curriculum.*
Mock, T. J., Pincus, K. V., & Ander, J. M. (1991). A system approach to accounting curriculum development. *Issues in Accounting Education, 6*, 178-192.
Mohammad, M. I. (2007). *Curricula in the Iraqi universities between theory and practice.* Paper presented at the International Conference on Higher Education in Iraq, 11 – 13 December. Erbil.Iraq.
Moore, G. & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research, 2*(3), 192-222.
Mounce, P. H., Mauldin, D. S., & and Braun, R. L. (2004). The importance of relevant practical experience among accounting faculty: An empirical analysis of students' perceptions. *Issues in Accounting Education, 19*(4), 399-411.
National Agency for Higher Education Sweden. (2003), *Higher Education in Iraq*. Swedish. Retrieved from: http://www.hsv.se/download /18.539a949110 f3d5914ec800077777/isbn.
National Council of Teachers of Mathematics. (2006). *Curriculum focal points for Prekindergarten through grade 8 Mathematics*. United States of America: Library of Congress Cataloging.
National Institute of Standard and Technology. (2010). *NIST/SEMATECH e-handbook of statistical methods.* Retrieved from www.itl.nist.gov/div898/handbook.
Navaneedhan, C. G. (2011). Reflective teaching pedagogy as innovative approach in teacher education through open and distance learning. *Journal of Media and Communication Studies, 3*(12), 331-335.
Nelson, R. R. (1991). Educational needs as perceived by IS and end-user personal: A survey of knowledge and skills requirements. *MIS Quarterly*, *15*(4), 503-525.
Neo, M. (2005). Engaging students in group-based co-operative learning-a Malaysia perspective. *Education Technology & Society, 8*(4), 220-232.
Noll, C. L., & Wilkins, M. (2002). Critical skills professionals: A model for curriculum development. *Journal of Information Technology Education, 1*(3), 143-154.
Norris, G. (2004). *Informing curriculum development through research.* Paper presented at the 4th Asia Pacific Interdisciplinary Research in Accounting Conference, Singapore.
Nunnally. J. C. (1978). *Psychometric theory*. New York: McGraw-Hill.
O'Donovan, B. C. (1996). A framework for integrating the understanding of information systems into the accounting curriculum. *Accounting Education, 5*(1), 1-15.
Ojanen, S. (1993). *A process in which personal pedagogical knowledge is created through the teacher education experience*. Paper presented at the International Conference in Teacher Education, Tel-Aviv, Israel.
Olakunke, A. O. (2003). *Research methods in social sciences*. (2 Ed.). Norway: E-Book press.
Oliver, P.F.(1982). *Developing the curriculum. Boston*: Little Brown.
Othman, A. M. (2009). *Principles of audit and control*. Saida: Aldar Alnmothgy.

Paas, L. & Creech, H. (2008).*How ICTs can support education for sustainablecurrent uses and trends*. Paper prepared with the support of the Province of Manitoba and
Presented to Manitoba Education, Citizenship and Youth. Winnipeg, Manitoba, Canada.
Pallant, J. (2001). *A step by guide to data analysis using SPSS*. Philadelphia, USA: Open University Press, McGraw-Hill Education.
Pallant, J. (2007). *SPSS survival manual*. (3Ed) . Glasgow, Britain: Bell & Bain Ltd.
Pathak, J. (2004). Information Technology Auditing and Cybercommerce: A risk perspective. *Information Systems Control Journal, 6*, 21-26.
Petrocelli, J. V. (April 2003). Hierarchical multiple regression in counseling research: Common problems and possible remedies. *Measurement and Evaluation in Counseling and Development,* 36, 9-22.
Phillips, J.A. (2001). *Technology in teaching and learning: Changing theoretical perspectives influencing research methods*. Proceedings of the International Conference on Qualitative Research. 25-26 October, 34-40. University of Malaya. Kuala Lumpur.
Pihlajamäki, J., Gylling, H., Miettinen, T. A., & Laakso, M. (2004). Insulin resistance is associated with increased cholesterol synthesis and decreased cholesterol absorption in normoglycemic men. *Journal of Lipid Research, 45*, 507-512.
Potter, B. & Johnston, C. (2006). The effect of interactive on-line learning systems on student learning outcomes in accounting, *Journal of Accounting Education, 24,* 16-34.
Previts, G. J. (1991). Accounting education: the next horizon. *Journal of Accountancy, 172*(4), 35 - 36.
Ramadan, A. M. (2011). The importance of curriculum in Iraq and Kurdistan Regin. *Sout Alkhar*. Retrieved from: http://www.sotakhr.com /2006/ index.php? id=13211#.
Roger, E. (2003). *Diffusion of innovations* (5 Ed.). New York: Free Press.
Romney, M. B., & Steinbart, P. J. (2009). *Accounting Information Systems* (11th). Upper Saddle River, NJ: Pearson Prentice Hall.
Romney, M. B., & Steinbart, P. J. (2003). *Accounting Information Systems* (9 Ed.). Prentice Hall, New Jerssy: business publishing.
Ruebling, C. E., Clarke, N. A., Kayona, F. A., & Stow, S. B. (2007). *Redesigning schools for success: implementing small learning communities and teacher collaboration*. Arizona: The Center for School Redesign.
Rush, D. E., Lawter, W. L., Thomason, J. T., & Atkisson, L. (1976). Essential components for effective curriculum development. *Peabody Journal of Education*, *53*(4), 296 - 298.
Saloojee, R. (2004), *Effects of engagement in reform-based practice on a college instructor's conceptions of mathematics.* Paper presented at the twenty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Toronto: OISE/UT.
Saville, H. (2007). International education standards for professional accountants (IESs). *Accounting Education: An international journal, 16*(1), 107-113.
Scandura, J. M. (1996). Role of instructional theory in authoring effective and efficient technologies. *Computers in Human behavior, 12*(2), 313-328.
Sciulli, N., & Sims, a. R. (2008). Public sector accounting education in Australian universities. *Asian Review of Accounting, 16*(3), 246-262.

Sekaran, U. (2000). *Research methods for business: A skill-building approach*. USA: John Willey Sons, Inc.

Sekaran, U., & Bougie, R. (2010). *Research methods for business* (5 Ed.). UK, Haddington, East Lothian: John Wile & Sons Ltd.

Senik, R., & Broad, M. (2008). Perceived factors influencing information technology (IT) skills development in undergraduate accounting programme. *International Journal of Economics and Management, 2*(2), 307-322.

Senik, R., & Broad, M. (2011). Information technology skills development for accounting graduates: Intervening conditions. *International Education Studies, 4*(2), 105-110.

Shanks, A. (2006). A *critical policy analysis of the crossroads Review: Implications for higher education in regional Western Australia.* Murdoch University, Australia.

Sharma, S., Durand, R. M., & Gur-Arie, O. (1981). Identification and analysis of moderator variables. *Journal of Marketing Research, 18*(3), 291-300.

S-ims-ek, H., & Yildirim, A. (2001). *The reform of pre-service teacher education in Turkey in: Sultana, R. (Ed.), Challenge and Change in the Euro-Mediterranean Region: Case Studies in Educational Innovation.* New York: Peter Lang Inc.

Sin, S., & Reid, A. (2005). *Developing generic skills in accounting: Resourcing and reflecting on trans-disciplinary research and insights*. Paper presented at the Australian Association for Research Education Annual Conference, Sydney, NSW, 27 November.

Speed, R. (1994). Regression type techniques and small samples: A guide to good practice. *Journal of Marketing Management, 10*, 89-104.

Sproull, N. L. (1995). *Handbook of research methods: A guide for practitioners and students in the social sciences*. USA: The Scarecrow Press, Inc.

Stevens, R. G. (1956). A motivationprogramme to increase the effectiveness of accounting courses. *The Accounting Review, 31*(4), 666_671.

Stewart, K. L., & Felicetti, L. A. (1992). Learning styles of marketing majors. *Educational Research Quarterly,15*(2), 15-23.

Stone, D. N. (2002). Researching the revolution: Prospects and possible for the Journal of information systems. *Journal of Information Systems, 16* (1), 1-6.

Straub, D., Boudreau, M., & Gefen, D. (2004). Validation guidelines for ispositivist research. *Communications of the Association for Information System, 13*(24), 380-427.

Strong, J. M., Portz, K., & Busta, B. (2006). A first look at the accounting information system emphasis at one university: An exploratory analysis. *The Review of Business Information Systems, 10*(2), 29-39.

Sudman, S., & Bradburn, N. M. (1982). *Asking questions: A practical guide to questionnaire design* (1st Ed.). London: Jossey-Bass Publishers.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate analysis* (5th Ed.). Bosten: Allyn and Bacon.

Taha, A. (2007). *Development of curriculum for the accounting department of the college of administration and economics at the University of Mousl, according to*

international standards of education for professional accountants. University of Mosul, Mousl, Iraq.

Taha, A. A. D. (2009). *The role of targeted development of accounting education in deepening the connection between academics and professionals*. Paper presented at the conference of the Role of self-potentials in promotes the comprehensive development. 19-20 November, Tikrit, Iraq.

Tang, H-L., Lee, S., & Koh, S. (2000). Educational gaps as perceived by IS educators: A survey of knowledge and skill requirements. *Journal of ComputerInformation Systems, 41* (2), 76-84.

Tanner, D., & Tanner, L. (1980). C*urriculum development: Into Practice* (2 Ed.). New York: Macmillan.

Taylor, P. (2004). *How participatory can processes of curriculum development impact on the quality of teaching and learning in developing countries?.* Paper commissioned for the EFA Global Monitoring Report 2005, The Quality Imperative.

Tella, A., & Adu, A. E. O. (2009). Information communication technology (ICT) and curriculum development: The challenges for education for sustainable development. *Indian Journal of Science and Technology, 2*(3), 55-59.

The Association to Advance Collegiate Schools of Business (AACSB). (2009). *Eligibility procedures and standards for accounting accreditation.* South Harbour Island: The Association to Advance Collegiate Schools of Business.

The Government of the Republic of Iraq. (1999). *The economic sanctions imposed on Iraq*. Retrieved from: www.unhchr.ch/Huridocda/Huridoca.nsf/.

Theuri, P. M., & Gunn, A. R. (1998). Accounting information systems course structure and employer systems skills expectations. *Journal of Accounting Education, 16*(1), 101-121.

Toffler, A. (1980). *The third wave*. Toronto, CN: Bantam Books.

Trauth, E. M., Farwell, D., & Lee, D. M. S. (1993). The IS expectation gap: Industry expectation versus academic preparation. *MIS Quarterly, 17*(3), 293 - 307.

Tyler, R. W. (1949). *Basic principles of curriculum and instruction*. Chicago: University of Chicago Press.

United Nations (UN). (1990). *Resolution 661 (1990)*. Retrieved from: www.un.org.

United Nations (UN). (2003). *Information and communication technology development indices.* Paper presented at the United Nations Conference on Trade and development New York and Geneva.

United Nations Educational Scientific and Cultural Organization (UNESCO). (2005). *Round table on the revitalization of higher education in Iraq- conclusions and proposal for action.* Paris. Available at, portal.unesco.org/education/en/files/.

United Nations Educational Scientific and Cultural Organization (UNESCO). (2011). *UNESCO country programming document for the republic of Iraq*: UNESCO.Geneva.Available at: http://unesdoc.unesco.org/images/0021 /002136/213680E .pdf.

United Nations Educational Scientific and Cultural Organization International Project on Technical and vocational education (UNEVOC). (1993). *Curriculum development in technical and vocational education, international Workshop*. Turin, Italy: the ILO International Training Centre.

United Nations Educational Scientific and Cultural Organization International Project on technical and vocational education (UNEVOC). (1994), *Regional Training Seminar on Technical and Vocational Education Curriculum Development in the Arab States Amman*: UNESCO Regional Office for Education in the Arab States (UNEDBAS).

United Nations Office of the High Commissioner for Human Rights. (September 2000). *The Human Rights Impact of Economic Sanctions on Iraq*. Background paper, prepared by the Office of the High Commissioner for Human Rights for the meeting of the Executive Committee on Humanitarian Affairs. Geneva. Available at:http://www.humanitarianinfo.org/sanctions/handbook/docs_ handbook/ HR_ im_es_iraq.pdf.

Vatanasakdakul, S. & C. Aouny (2009). *I don't like IT: exploring challenges in Accounting Information Systems Education.* Americas Conference on Information Systems (AMCIS), USA, AIS Electronic Library (AISeL).

Vatanasakdakul, S., & Aoun, C. (2011). Why don't accounting students like AIS?. *International Journal of Educational Management, 25*(4), 328-342.

Vermetten, Y. J., Lodewijks, H. G., & Vermunt, J. D. (1999). Consistency and variability of learning strategies in different university courses. *Higher Education, 37*, 1-21.

Vermunt, J. D. (1996). Metacognitive, cognitive and affective aspects of learning styles and strategies: A phenomenographic analysis. *Higher Education, 31*, 25-50.

Vermunt, J. D. (1998). The regulation of constructive learning processes. *British Journal of Educational Psychology, 68*, 149-171.

Wampold, B. & Freund, R. D. (1987). Use of multiple regression in counseling psychology research: A flexible data- analysis strategy. *Journal of Counseling Psychology, 34*, 372-382.

Wasley, R. S. (1963). A revitalized accounting curriculum. *The Accounting Review, 38*(1), 151-153.

Weiner, B. (1986). *An Attributional Theory of Motivation and Emotion*. New York: Springer-Verlag.

Weiner, B. (2000). Intrapersonal and interpersonal theories of motivation from an attributional perspective. *Educational Psychology Review*, *12*(1), 1-14.

Weiss, M. (1987), Transformers, *CIO 1*(1), 34- 41.

Wessels, P.L. (2005). Critical information and communication technology (ICT) skills for professional accountants. *Meditari Accountancy Research,13*(1), 87-103.

Westrup, J. (2010). Participative and transformative postgraduate learning and teaching. *New Community Quarterly, 7*(4), 31-32.

Whitefield, D. & Kloot, A. L. (2006). Personal and interpersonal skills. *Asian Review of Accounting*, *14*(1/2), 101-121.

Wierstra, R. F. A., Kanselaar, G., Linden, J. V. D., Lodewijks, H. G. L. C., & Vermunt, J. D. (2003). The impact of the university context on European students' learning approaches and learning environment preferences. *Higher education, 45*, 503-523.

Willits, S. D. (2010). Will more liberal arts courses fix the accounting curriculum? *Journal of Accounting Education, 28*(1), 13-25.

Windeknecht, K., Kehoe, J., & Tennent, B. (2005). *Flexible teaching and learning in accounting: innovate, investigate and improve.* Paper presented at the

International Conference on Innovation in Accounting Teaching and Learning, Hobart, Tasmania.

Wn, F. H. (1983). Teaching accounting information systems: A synthesis. *Issues in Accounting Education, 1*, 132-145.

Womble, M. N. (1994). Graduates assess needed skills and knowledge for an information systems program in small colleges. *Journal of Information Systems Education, 6*(1), 12-17.

Wyhe, G. V. (1994). *Straggle for status a history of accounting education.* New York: Garland Publication Inc.

Yaffe, J. (1989). MIS education: A 20th century disaster. *Journal of Systems Management,40*(4), 10-13.

Young, D., & Lee, S. (summer, 1996). The relative importance of technical and interpersonal skills for new information systems personnel. *Journal of Computer Information Systems, 36*(4), 66-71.

Zaid, K. A. (1996). *A framework to evaluate accounting education*. Paper presented at the 7th Symposium in the development of accounting education.4-5December Al-Riyadh, Kingdomof Saudi Arabia. Retrieved from: www.ksu.edu.sa /sites/KSU Arabic/Students/FemaleStds/OleshahCenter/CollegesAndDeps/AdminScienceCollege/DeptCollege/acc/acc-seminar/ Pages/seminar7.

Zikmund, W. G. (2000). *Exploring marketing research and business research methods.* USA: Cengage Learning.

Zikmund, W. G. (2003). *Business research methods* (7 Ed.). USA: Thomson South-Western Inc.

Zikmund, W. G., Badin, B. J., Carr, J. C., & Griffin, M. (2010), *Business research methods* (8 Ed.). USA: Thomson South-Western Inc.

APPENDIX

Appendix A

Appendix A-1

Questionnaire Development

Employers' Needs

1- Knowledge (managerial and technical)

1. ability to deliver both the technical and soft skills to a learner (UNEVCO, 1993).
2. ability to gain knowledge of specific business functional areas within the organization (Lee & Fang, 2008)
3. adequate planning, management and decision-making supported software applications (Tang, Lee & Koh, 2001).
4. necessary office suites applications (Tang, Lee & Koh, 2001).
5. relevant programming languages (Tang, Lee & Koh, 2001).
6. effective communication enabling applications that can support knowledge sharing (Tang, Lee & Koh, 2001).
7. training component that can develop the learners to be future knowledge facilitator (Noll & Wilkins, 2002).

2- Business Environment Knowledge

1. ability to gain knowledge of specific industries (Lee & Fang, 2008).
2. ability to gain knowledge of specific organizations (Lee & Fang, 2008).
3. ability to gain knowledge of general business environment (Lee & Fang, 2008)
4. adequate knowledge of organizational ethics.
5. ability to relate AIS accounting organization environment (Noll & Wilkins, 2002).

3- Personal and Interpersonal Skills

1. necessary skills that will make it flexible for the learner to change from one job to another (UNEVCO, 1993).
2. necessary skills for impacting self-determination and motivation (Hoffman and Field., 1995, Rush et al, 1976; Lee & Fang, 2008).

3. ability to exhibit a good creative thinking skill (Lee & Fang, 2008).
4. ability to exhibit a good critical thinking skill (Lee & Fang, 2008).
5. ability to exhibit a good team skill (Lee & Fang, 2008).
6. ability to exhibit a good interpersonal communication skill (Lee & Fang, 2008).
7. ability to exhibit a good interpersonal behavior skill (Tang, Lee & Koh, 2001)
8. ability to exhibit a good international communication ability (Tang, Lee & Koh, 2001)
9. soft skills for developing interpersonal relationship (Noll & Wilkins, 2002)
10. the effective project management skills (Noll & Wilkins, 2002)

Professional Bodies

1. Ability to attract young generation to acquire required professional skills and knowledge (UNEVCO, 1993).
2. Ability to offer open access to knowledge without any constraint (UNEVCO, 1993).
3. Goals definition (Tyler, 1949).
4. Strict adherence to the set standards (MSEB, 2004)
5. Ability to support information creation and design (IFAC Guideline, 2005).
6. Ability to change accounting competitive environment (IFAC Guideline, 2005).

Learning Environment

1- Current Technological state

1. incorporate all available resources in to the learning environment (Rush et al., 1976).
2. introduce necessary technologies capable of stimulating the students to learn (Rush et al., 1976)
3. Adequate number of computer hardware must be provided (Azizi & Salim, 2005)

4. Adequate application software capable of integrating IT to AIS course content (Azizi & Salim, 2005).

5. There is need to ensure network satisfaction (Azizi & Salim, 2005).

2- Learning approach

1. Making an AIS course content to be related to a real accounting life experience (Tyler, 1949)

2. Presenting the learning experiences in an organized manner is essential in developing AIS course content (Tyler, 1949)

3. present a reliable means of evaluating learning outcomes (Tyler, 1949)

4. Ability to manage time effectively is an important factor (MSEB, 2004)

5. give the students the freedom to choose their learning styles (Rush et al., 1976)

3- Participatory learning and teaching method

1. Making AIS course content to be student the centered of the learning process (Rush et al., 1976)

2. Good student – teacher interaction is important in developing AIS curriculum (Rush et al., 1976)

3. Achieve good interaction between lecturer and student (Rush et al., 1976).

4. Encourage the teachers to facilitate learning rather than exerting control on students (Rush et al., 1976)

5. support collaborative learning for enabling peer assistance (Rush et al., 1976)

IFAC Recommendation

3- IT competency

1. Including many IT-related courses will enable the graduates to acquire necessary IT knowledge and skills (Azizi & Salim, 2005).

2. The kind of IT contents that are applicable in the information system operations (IFAC Guideline, 2005).

3. In developing AIS course content, making AIS graduates to possess required IT competency to gain the professional membership should be given ultimate consideration (IFAC Guideline, 2005).

4. The Integration IT-based teaching and learning approach to achieve learner the acceptable IT competency

2- IT control knowledge

1. applicable to information system management and control (IFAC Guideline, 2005).

2. incorporate intelligent system for mimicking professional accountants (IFAC guideline, 2005).

3. Inclusion of IT component in an AIS course content can be used to change the competitive environment where the professional accountants operate (IFAC guideline, 2005).

4. Inclusion of IT component in an AIS course content can be used to change the nature of accounting activities (IFAC guideline, 2005).

5. IT knowledge/skills should be integrated in to all major areas of AIS course content (Ismai & Salim, 2005).

3- General IT knowledge

1. be able to integrate required IT knowledge/skills in to all major areas of the AIS course contet (Ismail & Salim, 2005).

2. applicable to information production and information system development (IFAC Guideline, 2005)

3. Inclusion of IT component in an AIS course development will offer the accounting graduate the necessary skill to analyze IT investments appropriately (IFAC guideline, 2005).

4. Able to provide the accounting graduate with necessary skill to communicate effectively about IT-related topics (IFAC guideline, 2005).

5. Able to provide the accounting graduate the necessary skill to manage organizational change effectively (IFAC guideline, 2005).

6. interest with the communication aspect of IT (IFAC Guideline, 2005).

7. Interest with the IT architecture aspect (IFAC Guideline, 2005).

8. Interest with the system acquisition and development process aspect (IFAC Guideline, 2005).
9. Stressed well with the management aspect of IT (IFAC Guideline, 2005).
10. Stressed well with IT strategy aspect (IFAC Guideline, 2005).
11. interest with the IT Auditing aspect (Coe, 2006; Milus, 2004).
12. Provide adequate lecturers and textbook to support the content (Coe, 2006)
13. Evaluate by the experts to assess the performance of students using information technology (Chayeb & Best, 2005)

Instructor's Characteristics

1. The potentials of a teacher to facilitate learning in an IT environment (Rush et al., 1976)
2. Lecturer must know the importance of IT in developing courses (Azizi & Salim, 2005)
3. lecturer acceptance to learn the essential skills related to IT (Azizi & Salim, 2005).
4. stressed on the clear definition of lecturer's role in development process (Saloojee, 2004).
5. Provide adequate teaching skills that can support the IT-based curriculum (Tang, Lee & Koh, 2001).
6. The technological inclination of an AIS.
7. Academic position of an AIS instructor.(Grroomer& Murthy,1996)
8. The Academic qualifications of an AIS instructor.(Grroomer& Murthy,1996)
9. The Years of experience of an AIS instructor.(Grroomer& Murthy,1996)
10. The Contribute to scientific research by the AIS instructor.(Grroomer& Murthy,1996).

AIS course content

1- Its ability to attract young generation to acquire necessary skills in the profession (UNEVCO (1993).

2- Its ability to discharge both the technical and coping skills required of the learners (UNEVCO (1993).

3- Its ability to provide the learners with basic skills which will enable them to switch from one work area to another whenever when such case arises (UNEVCO (1993).

4- Its ability to guarantee open access to all without any constraints (UNEVCO (1993).

5- Self-determination is identified as a key element of any development process (Hoffman & Field., 1995).

6- Its ability to establish learning experiences (Tyler, 1949).

7- The capacity in organizing learning experiences (Tyler, 1949).

8- Its capability of evaluation the learning outcomes (Tyler, 1949

Appendix A-2

The Final Questionnaire

UNIVERSITI UTARA MALAYSIA
COLLEGE OF BUSINESS (COB)
06010 UUM SINTOK
KEDAH DARUL AMAN
MALAYSIA
Tel: 009647701775200
E-mail: Naseem_d2003@yahoo.com

SURVEY QUESTIONNAIRE MEASURING THE CRITERIA

OF AIS CURRICULUM DEVELOPMENT IN IRAQ

(30 minutes is required to fill out this survey)

General Information

This study is a PhD research to determine the factors of AIS curriculum development in Iraq. It is hoped that the outcome of the study will be of immense benefit to the development of AIS curriculum in the Iraq. Your willingness to answer the questionnaire is highly appreciated since such act will contribute to the quality of the research.

Instruction

It is extremely recommended that you complete the questionnaire personally for the objectivity of the data. You are expected to choose the answer that represents your opinion. Your answer plays a significant role in the success of this study and you are assured that such will be treated with **utmost confidentiality**. (Please tick (✓) in the appropriate box). Finally, the researcher requests your comments, suggestions and/or criticisms that is useful to this survey.

Thanks for participating in this survey

Sincerely

Researcher
Naseem Yousif Hanna
College of Business (COB)
University Utara Malaysia

Supervisor
Dr. Mohamad Hisyam Selamat
College of Business (COB)
University Utara Malaysia

Part (1): Respondent Information

Please, Tick (√) as appropriate in the below:

1- Respondents' specification

AIS specification ( ) Teaching AIS subject ( ) Interested in AIS research ( )

Teaching other accounting subject ( )

2- Respondents' Academic Ranking:

Assistant Researcher ( ) Assistant Lecturer ( ) Lecturer ( )

Assistant Professor ( ) Professor ( )

3- Respondent gender

Male ( ) female ( )

4- Respondents' age

20 - 29 ( ) 30- 39 ( ) 40 – 49 ( ) 50 – 59 ( ) over 60 ( )

5- Respondents' Educational Level

Bachelor ( ) Master of Science ( ) Doctorate of philosophy ( )

6- Respondents' period spent in teaching AIS course

Never ( ) less 1 year ( ) 2-5 ( ) 6-10 ( ) above 10 years ( )

7- Respondent position

Do you have position?

Yes ( ) No ( )

If (yes), what is your position? .....

Part (2): Current State of AIS Curriculum

The current AIS curriculum in Iraq ….

Please check (√) in the space that you can see it is suitable to the current situation about the AIS curriculum in Iraq

1.	**is able to deliver a good flow of idea**	**Yes ( )**	**No ( )**
2.	contains basic AIS knowledge	Yes ( )	No ( )
3.	is able to deliver required personal skills	Yes ( )	No ( )
4.	is able to deliver required interpersonal skills	Yes ( )	No ( )
5.	is able to deliver good communication skills	Yes ( )	No ( )
6.	is able to deliver both organizational and business knowledge	Yes ( )	No ( )
7.	is able to deliver required accounting knowledge	Yes ( )	No ( )
8.	is able to deliver required IT knowledge	Yes ( )	No ( )
9.	is able to deliver required technical skills	Yes ( )	No ( )
10.	is able to deliver required soft skills	Yes ( )	No ( )
11.	is in line with the professional body's requirements	Yes ( )	No ( )
12.	supports the current world learning environment	Yes ( )	No ( )
13.	supports the current world learning approach	Yes ( )	No ( )

Part (3): The Main Part

Section (A): Employer's Needs

Please check (√) in the space provided using the following scale.

1) Disagree	**2)** Slightly disagree	**3)** Indisposed	**4)** Slightly Agree	**5)** Agree

1- Core Knowledge

A good AIS course content should include ……

No	*FACTORS*	*1*	*2*	*3*	*4*	*5*
1	ability to deliver both the technical and soft skills to a learner					
2	ability to gain knowledge of specific business functional areas within the organization					
3	adequate planning, management and decision-making supported software applications					
4	include necessary office suites applications					
5	relevant programming languages					
6	effective communication enabling applications that can support knowledge sharing					
7	training component that can develop the learners to be future knowledge facilitator					

2- Business Environment Knowledge

A good AIS course content should include…….

No	*FACTORS*	*1*	*2*	*3*	*4*	*5*
1	ability to gain knowledge of specific industries					
2	ability to gain knowledge of specific organizations					
3	ability to gain knowledge of general business environment					
4	adequate knowledge of organizational ethics					
5	The ability to relate AIS and accounting organization environment					

3- Personal and Interpersonal Skills

A good AIS course content should include……..

No	***FACTORS***	*1*	*2*	*3*	*4*	*5*
1	necessary skills that will make it flexible for the learner to change from one job to another					
2	necessary skills for impacting self determination and motivation					
3	ability to exhibit a good creative thinking skill					
4	ability to exhibit a good critical thinking skill					
5	ability to exhibit a good team skill					
6	ability to exhibit a good interpersonal communication skill					
7	ability to exhibit a good interpersonal behavior skill					
8	ability to exhibit a good international communication ability					
9	soft skills for developing interpersonal relationship					
10	the effective project management skills					

Section (B): Professional Bodies

Please check (√) in the space provided using the following scale.

1) Disagree	**2)** Slightly disagree	**3)** Indisposed	**4)** Slightly Agree	**5)** Agree

In this area a good AIS course content should include……

No	***FACTORS***	*1*	*2*	*3*	*4*	*5*
1	Ability to attract young generation to acquire required professional skills and knowledge					
2	Ability to offer open access to knowledge without any constraint					
3	Goals definition					
4	Strict adherence to the set standards					
5	Ability to support information creation and design					
6	Ability to change accounting competitive environment					

Section (C): Learning environment

Please check (√) in the space provided using the following scale.

1) Disagree	**2)** Slightly disagree	**3)** Indisposed	**4)** Slightly Agree	**5)** Agree

1- Current Technological state

To ensure a good AIS course content it is important to include its ability to ….

No	*FACTORS*	*1*	*2*	*3*	*4*	*5*
1	incorporate all available resources in to the learning environment					
2	introduce necessary technologies capable of stimulating the students to learn					
3	Provide adequate number of computer hardware must be provided in developing a good AIS course content					
4	Provide adequate application software capable of integrating IT to AIS course content should be well stressed while developing AIS curriculum					
5	ensure network satisfaction					

2- Learning approach

To achievea good AIS course content Should be characterized by…….

No	*FACTORS*	*1*	*2*	*3*	*4*	*5*
1	Making an AIS course content to be related to a real accounting life experience					
2	Presenting the learning experiences in an organized manner					
3	present a reliable means of evaluating learning outcomes					
4	Ability to manage time effectively					
5	give the students the freedom to choose their learning style					

3- Participatory learning and teaching method

The best AIS course content should be …..

No	*FACTORS*	*1*	*2*	*3*	*4*	*5*
1	Making AIS course content to be student the centered of the learning process					
2	Achieve good interaction between lecturer and student					
3	Provide a clear definition of student's role in the learning process					
4	Encourage the teachers to facilitate learning rather than exerting control on students					
5	support collaborative learning for enabling peer assistance					

Section (D): International Federation of Accounting Recommendation

Please check (√) in the space provided using the following scale

1) Disagree	**2)** Slightly disagree	**3)** Indisposed	**4)** Slightly Agree	**5)** Agree

.

1- IT competency

To achieve a good AIS course content it is important to include …….

No	*FACTORS*	*1*	*2*	*3*	*4*	*5*
1	many IT-related subjectswhich are enable the graduates to acquire necessary IT knowledge and skills					
2	The kind of IT contents that are applicable in the information system operations					
3	required IT competency to gain the professional membership					
4	The Integration IT-based teaching and learning approach to achieve learner the acceptable IT competency					

2- IT control knowledge

The kind of IT content to be considered in the AIS course content should be …

No	*FACTORS*	*1*	*2*	*3*	*4*	*5*
1	applicable to information system management and control					
2	incorporate intelligent system for mimicking a professional accountants					
3	Inclusion of IT component in an AIS course content can be used to change the competitive environment where the professional accountants operate					
4	Inclusion of IT component in an AIS course content can be used to change the nature of accounting activities					
5	IT knowledge/skills should be integrated in to all major areas of AIS course content					

3- General IT knowledge

A good AIS course content considered to be……

No	*FACTORS*	*1*	*2*	*3*	*4*	*5*
1	able to integrate required IT knowledge/skills in to all major areas of the AIS course content					
2	applicable to information production and information system development					
3	Inclusion of IT component in an AIS course development will offer the accounting graduate the necessary skill to analyze IT investments appropriately					
4	Able to provide the accounting graduate with necessary skill to communicate effectively about IT-related topics					
5	Able toprovide the accounting graduate the necessary skill to manage organizational change effectively					
6	interest with the communication aspect of IT					
7	Interest with the IT architecture aspect					
8	Interest with the system acquisition and development process aspect					
9	Stressed well with the management aspect of IT					
10	Stressed well with IT strategy aspect					
11	interest with the IT Auditing aspect					
12	Provide adequate lecturers and textbook to support the content					
13	Evaluate by the experts to assessthe performance of studentsusing information technology					

Section (E): Instructors' characteristics

Please check (√) in the space provided using the following scale.

1) Disagree	**2)** Slightly disagree	**3)** Indisposed	**4)** Slightly Agree	**5)** Agree

A good AIS course content considering IFAC Recommendation achieved through

No	*FACTORS*	*1*	*2*	*3*	*4*	*5*
1	The potentials of a lecturer to facilitate learning in an IT environment					
2	Lecturer must know the importance of IT in developing courses					
3	lecturer acceptance to learn the essential skills related to IT					
4	stressed on the clear definition of lecturer's role in development process					
5	Provide adequate teaching skills that can support the IT-based curriculum					
6	The technological inclination of an AIS					
7	Academic position of an AIS instructor					
8	The Academic qualifications of an AIS instructor					
9	The Years of experience of an AIS instructor					
10	The Contribute to scientific research by the AIS instructor					

Section (F): AIS course content

Please check (√) in the space provided using the following scale.

1) Disagree	**2)** Slightly disagree	**3)** Indisposed	**4)** Slightly Agree	**5)** Agree

No	*FACTORS*	*1*	*2*	*3*	*4*	*5*
1	Its ability to attract young generation to acquire necessary skills in the profession					
2	Its ability to discharge both the technical and coping skills required of the learners					
3	Its ability to provide the learners with basic skills which will enable them to switch from one work area to another whenever such case arises					
4	Its ability to guarantee open access to all without any constraints					
5	Self-determination is identified as a key element of any development process					
6	Its ability to establish learning experiences					
7	The capacity in organizing learning experiences					
8	Its capability of evaluation the learning outcomes					

Part (4): suggestion

Opinion, Suggestions and Criticism

……

……

……

……

Appendix A-3

Final Questionnaire Design (Arabic)

جامعة الشمال(أوتارا) الماليزية- كلية الاعمال
ولاية قدح – ماليزيا
البريد الالكتروني: Naseem_d2003@yahoo.com
الهاتف: 009647504135913
0060175747586

استمارة استبانة
لتحديد العوامل المؤثرة على تطوير مناهج
نظم المعلومات المحاسبية
في مؤسسات التعليم العالي في العراق

معلومات عامة :

هذه الدراسة هي بحث دكتوراه , يهدف البحث الى تحديد العوامل التي تؤثر على تطوير المناهج الدراسية في نظم المعلومات المحاسبية في العراق . ومن المؤمل ان تكون نتائج الدراسة ذات فائدة كبيرة في تطوير المنهج الدراسية في مجال نظم المعلومات المحاسبية في العراق. يتمنى الباحث ان تملا الاستمارة بكل موضوعية وهذا سيسهم بكل تأكيد في تطوير المناهج.

تعليمات :

يرجى وضع علامة (✓) في المربع الذي يمثل اجابتك وأخيرا اذا كانت لديكم اية تعليقات او اضافات يمكنكم اضافتها الى الحقل الاخير من هذه الاستمارة .

شكرا لكم لمشاركتكم في هذا الاستبيان

الباحث	المشرف
نسيم يوسف حنا	**د. محمد هشام سلامات**
كلية الاعمال	كلية الاعمال
جامعة الشمال(اوتارا) الماليزية	جامعة الشمال(اوتارا) الماليزية

القسم الثامن: تطوير المناهج الدراسية لنظم المعلومات المحاسبية

الرجاء وضع علامة(✓) في الفراغ الذي يمثل اجابتك

ت	الاسئلة	1	2	3	4	5
1	قابلية المنهج على توليد جيل جديد لديه المهارات المهنية المطلوبة					
2	قابلية المنهج في اطلاق المهارات التقنية المطلوبة لدى الطلبة الخريجيين					
3	قابلية المنهج في توفير خريجين يحملون مهارات اساسية تؤهلهم للانتقال من مجال عمل الى اخر ضمن اختصاصاتهم					
4	قابلية المنهج على ضمان الوصول الى الجميع دون اية قيود					
5	أن التحديد الذاتي يعد العنصر المفتاحي لاي عملية تطوير					
6	قابلية المنهج في تثبيت الخبرات التعليمية					
7	مدى تنظيم المنهج للخبرات التعليمية المكتسبة					
8	قدرة المنهج في تقييم مخرجات التعليم					

القسم التاسع: المقترحات

اذا كانت لديك اية مقترحات اضافية او اراء برجى تدوينها ادناه:

.....

.....

....

تعاريف مهمة

المنهج الدراسي: هو الموجه الذي يجب اتباعه في التعليم ويتضمن كل المعارف الواجب تلقيها من قبل الطالب وباشراف التدريسي.

نظم المعلومات المحاسبية : مجموعة من اثنين او اكثر من المكونات المترابطة والتي تتفاعل مع بعضها البعض لتوليد واستغلال المعلومات المحاسبية على نحو يتسم بالفاعلية والكفاءة.

احتياجات الموّظفين(مدراء الشركات وغيرهم من اصحاب العمل) : ويقصد بها المهارات المعرفة الضرورية التي يمكن ان من خلالها قبول المتقدمين من خريجي قسم المحاسبة لشغل وظيفة.

المعرفة الجوهرية: ويشير هذا المصطلح الى المعرفة الاساسية التي يجب ان يتمتع بهاالمتقدم لشغل وظيفة وعلى وجه الخصوص في مجال انظمة المعلومات المحاسبية

المعرفة ببيئة الاعمال : و يقصد بهذا المصطلح المعرفة المتعلقة بالمنظمة و الصناعة التي تنتمي اليها المنظمة لما لهذه المعرفة من اهمية في تحديد مسار الانظمة المحاسبية المتبعة داخل الوحدة (وحدة خدمية – تجارية – صناعية – حكومية – قطاع مختلط- خاصة.....)

المنظمات المهنية : ويقصد بها المنظمات التي تعنى بمهنة المحاسبة وتنظم عملها وتصدر التعليمات التي تطور عمل المهنة .

البيئة التعليمية: ويشير المصطلح الى مجموعة الظروف والمؤثرات الداخلية والخارجية والتي لها تأثير على الفرد المتعلم.

المدخل التعليمي : وهو ادماج الخبرات المكتسبة في الحياة المهنية ضمن المنهج الدراسي لغرض الافادة من تلك الخبرات شريطة ان يكون هذا الدمج بشكل منظم وعلمي مدروس لغرض تقييم النتائج.

التعليم وطريقة التدريس: ويمثل هذا التفاعل بين الطلاب والتدريسي و دور التدريسي في تسهيل العملية التعليمية

المعرفة بتكنولوجيا المعلومات: ويشير هذا المصطلح الى المعارف والمهارات الاساسية التي يتطلب وجودها عند الخريجين وخاصة في مجال نظم المعلومات المحاسبية

ان تطوير مناهج نظم المعلومات المحاسبية اعتمادا على تكنولوجيا المعلومات يتحقق من خلال.....

ت	الاسئلة	غير متفق بشدة 1	غير متفق 2	لا رأي لي 3	متفق 4	متفق بشدة 5
1	اعداد امكانات التدريسي لتسهيل التعلم في بيئة تكنولوجيا المعلومات					
2	ادراك الاكاديميين اهمية تكنولوجيا المعلومات في تطوير المناهج					
3	رغبة الاكاديمي في تعلم المهارات الاساسية في مجال تكنولوجيا المعلومات بدا من الاكاديميين					
4	التأكيد على توضيح دور الاكاديميين					
5	توفر المهارات الكافية لدى الاكاديميين					
7	اسهام الموقع الاداري للاكاديمي في تطوير المناهج					
8	توفير المؤهلات التعليمية للاكاديمي لانجاح تطوير المناهج					
9	وجود اكاديميين لهم سنوات خبرة في العمل					
10	اتقان الاكاديمي لاستخدام الاساليب التكنولوجية					
11	قيام الاكاديمي بالابحاث العلمية					

3 - المعرفة العامة بتكنولوجيا المعلومات

ان التطوير الجيد لمناهج نظم المعلومات المحاسبية في هذا المجال يتطلب أن.....

ت	الاسئلة	غير متفق بشدة 1	غير متفق 2	لا رأي لي 3	متفق 4	متفق بشدة 5
1	تكون قادرة على دمج تكنولوجيا المعلومات المطلوبة والمعرفة والمهارات في كل المجالات الرئيسية لمناهج نظم المعلومات المحاسبية					
2	تتضمن انتاج المعلومات وتطوير نظام المعلومات					
3	يوفر خريجين لديهم المهارات اللازمة لتحليل الاستثمارات في مجال تكنولوجيا المعلومات بشكل مناسب					
4	يوفر خريجين لديهم المهارات اللازمة للتواصل بفعالية حول المواضيع المتعلقة بتقنية المعلومات					
5	يوفر خريجين لديهم المهارات اللازمة في مجال الأدارة و التغيير التنظيمي وبشكل فعال					
6	يؤكد على الاتصالات في ظل تكنولوجيا المعلومات					
7	تهتم بتكنولوجيا الهندسة المعمارية للحاسوب كأحد جوانب تكنولوجيا المعلومات					
8	تهتم بكيفة الحصول على التكنولوجيا وتطويرها(شراء البرامج والاجهزة)					
9	تهتم بألادارة في مجال تكنولوجيا المعلومات					
10	تهتم بأستراتيجيات تكنولوجيا المعلومات كأحد جوانب تكنولوجيا المعلومات					
11	تهتم بكيفية تدقيق المعلومات في ظل التكنولوجيا					
12	توفر الكتب المنهجية و الكادر التدريسي					
13	توفر خبراء لتقييم اداء الطلاب باستخدام تكنولوجيا المعلومات					

(10)

القسم الاول: المعلومات العامة

ضع علامة () في المكان المناسب للاجابتك:

الاختصاص :

( ) نظم معلومات محاسبية ( ) يدرس المادة

( ) باحث في نظم معلومات محاسبية ( ) تدريس مواضيع اخرى

الجنس :

( ) **ذكر** ( ) **انثى**

العمر:

( ) 20- 29 ( ) 30-39 ( ) 40 – 49 ( ) 50 – 59 ( ) اكبر من60

التحصيل الدراسي :

( ) بكالوريوس ( ) ماجستير ( ) دكتوراه

المستوى الاكاديمي:

( ) مساعد باحث ( ) مدرس مساعد ( ) مدرس

( ) استاذ مساعد ( ) استاذ

الفترة الي قضاها المستجيب في تدريس مادة نظم المعلومات المحاسبية:

( ) لم يدرسها ( ) اقل من سنة ( ) من 2-5 سنوات

( ) من 6-10 سنوات ( ) اكثر من 10 سنوات

المنصب :

هل لديك موقع مسؤولية؟

( ) نعم ( ) لا

اذا كانت الاجابة بـــ(نعم) فماهو نوع المسؤولية التي تحملها ؟

.....

(3)

القسم الثاني : واقع الحال

الرجاء وضع علامة(✓) في الفراغ الذي يمثل اجابتك

ان منهج نظم المعلومات المحاسبية الحالي يتصف بالقدرة على نقل ....

1	الافكار الملائمة للحاضر	نعم(.....)	لا (.....)
2	المعرفة الاساسية بنظم المعلومات المحاسبية	نعم (.....)	لا (.....)
3	المهارات الشخصية المطلوبة	نعم (.....)	لا (.....)
4	المهارات الشخصية الخاصة المطلوبة	نعم (.....)	لا (.....)
5	مهارات اتصال جيدة الى الطلبة	نعم (.....)	لا (.....)
6	المعرفة في مجالي الاعمال والمنظمات	نعم (.....)	لا (.....)
7	المعرفة المحاسبية المطلوبة الى الخريجيين	نعم (.....)	لا (.....)
8	المعرفة في مجال تكنولوجيا المعلومات	نعم (.....)	لا (.....)
9	المهارات التقنية	نعم (.....)	لا (.....)
10	المهارات المتعلقة بالبرامجيات الجاهزة	نعم (.....)	لا (.....)
11	متطلبات المنظمات المهنية	نعم (.....)	لا (.....)
12	الافكار المتعلقةبالبيئة التعليمية العالمية	نعم (.....)	لا (.....)
13	المتطلبات الداعمة للانسجام مع المدخل العلمي العالمي	نعم (.....)	لا (.....)

القسم السادس: المعرفة بمجال تكنولوجيا المعلومات

1 - التأهيل في مجال تكنولوجيا المعلومات

ان تطوير مناهج نظم المعلومات المحاسبية في هذا المجال يجب ان يتضمن.....

ت	الاسئلة	1	2	3	4	5
1	عدد من المواضيع الخاصة بمجال تكنولوجيا المعلومات لزيادة المهارات والمعرفة لدى الخريجين					
2	امكانية تطبيق محتوى تكنولوجيا المعلومات في عمليات نظم المعلومات					
3	تأهيل الخريجين في مجال تكنولوجيا المعلومات لمساعدتهم في الانتساب في الجمعيات المهنية العالمية					
4	تحقيق مستوى معرفة مقبول من الناحية التكنولوجية للمتعلم في بداية حياته العملية					

2 - المعرفة في مجال الرقابة في ظل تكنولوجيا المعلومات

لتطوير مناهج نظم المعلومات المحاسبية في هذا المجال يجب ان ....

ت	الاسئلة	غير متفق بشدة 1	غير متفق 2	لا رأي لي 3	متفق 4	متفق بشدة 5
1	تكون قابلة للتطبيق في مجال نظام المعلومات عن الادارة والرقابة					
2	يتضمن معلومات عن الانظمة الذكية لمحاكاة (تأدية عمل) المحاسبين في مجال الرقابة والتدقيق					
3	يساعد في تغيير البيئة التنافسية لعمل المحاسبين					
4	يساعد في تغيير طبيعة الانشطة المحاسبية					
5	تدرج المهارات والمعرفة في كل المجالات الرئيسية لمناهج نظم المعلومات المحاسبية					

3 -التعليم وطريقة التدريس

ان افضل تطوير لمناهج نظم المعلومات المحاسبية يجب ان....

ت	الاسئلة	غير متفق بشدة 1	غير متفق 2	لا رأي لي 3	متفق 4	متفق بشدة 5
1	يجعل الطالب محور المنهج الدراسي					
2	يحقق التفاعل الجيد بين الطالب –الاستاذ					
3	يوضح دور الطالب في العملية التعليمية					
4	تشجيع المعلمين على تسهيل عملية التعلم بدلا من ممارسة الرقابة على الطلاب					
5	يشجع التعليم التعاوني(العمل كمجاميع) بين الطلاب					

(8)

القسم الثالث: احتياجات اصحاب العمل(الموظّفين)

1 - المعرفة الجوهرية

ان التطوير الجيد لمناهج نظم المعلومات المحاسبية يجب ان يتضمن.....

ت	الاسئلة	غير متفق بشدة 1	غير متفق 2	لا رأي لي 3	متفق 4	متفق بشدة 5
1	القدرة على تقديم كل المهارات التقنية اللازمة للمتعلم					
2	القدرة على اكساب المتعلم المعرفة في المجالات التجارية المتعلقة بالمنظمة					
3	القدرة على التخطيط وصنع القرارات والادارة ودعم البرامجيات الجاهزة					
4	التطبيقات المكتبية اللازمة					
5	لغات البرمجة ذات الصلة					
6	التواصل الفعال للتطبيقات التي تدعم تبادل المعرفة					
7	اضافة عنصر التدريب الذي يوفر الخبرات العملية					

2- المعرفة المتعلقة ببيئة الاعمال:

ان افضل تطوير في مناهج نظم المعلومات المحاسبية يجب ان يتضمن .....

ت	الاسئلة	غير متفق بشدة 1	غير متفق 2	لا رأي لي 3	متفق 4	متفق بشدة 5
1	المعرفة الضرورية في قطاعات محددة					
2	القدرة على اكتساب المعرفة حول بعض المنظمات ذات الطبيعة الخاصة					
3	القدرة على اكتساب المعرفة العامة ببيئة الاعمال					
4	القدرة على اكتساب المعرفة حول الاخلاقيات المتعلقة بالمنظمات في بيئة الاعمال					
5	الربط بين نظم المعلومات المحاسبية و المحاسبة في بيئة الوحدة الاقتصادية					

(5)

1 - المهارات الشخصية :

ان عملية تطوير مناهج نظم المعلومات يجب ان يشمل على .....

ت	الاسئلة	غير متفق بشدة 1	غير متفق 2	لا رأي لي 3	متفق 4	متفق بشدة 5
1	المهارات اللازمة والتي تكسب الفرد القدرة على التكيف مع الوظائف التي قد ينتقل الفرد فيها داخل الوحدة الاقتصادية					
2	المهارات والدوافع اللازمة لإتخاذ القرارات بشكل شخصي					
3	تنمية التفكير الابداعي لدى الافراد					
4	تنمية التفكير النقدي لدى الافراد					
5	تنمية القدرات في العمل كفريق					
6	تنمية مهارات الاتصال بين الافراد					
7	المهارات المتعلقة بالسلوك					
8	تنمية المهارت في مجال الاتصالات الدولية					
9	تنمية المهارات في مجال تطوير العلاقات بين الاشخاص					
10	المهارات المتعلقة بالادارة الفعالة للمشروع					

القسم الرابع: المنظمات المهنية

ان التطوير الجيد لمناهج نظم المعلومات المحاسبية في هذا المجال يجب ان يتضمن.....

ت	الاسئلة	غير متفق بشدة 1	غير متفق 2	لا رأي لي 3	متفق 4	متفق بشدة 5
1	اكساب الخريجين المهارات والمعرفة المهنية					
2	حرية الوصول الى المعرفة دون اية قيود					
3	تحديداللاهداف الممكن الوصول اليها					
4	الالتزام بالمعايير المهنية الموضوعة					
5	التأكيد على المقدرة في انشاء المعلومات والتصميم لنظم المعلومات حسب حاجة الوحدة الاقتصادية					
6	التأكيد على القدرة على تغيير البيئة التنافسية للمحاسبة					

(6)

القسم الخامس: البيئة التعليمية

1 - وضع الحالي التكنولوجيا

لضمان افضل تطوير لمناهج نظم المعلومات المحاسبية في هذا المجال يجب ان يتوفر فيها .....

ت	الاسئلة	غير متفق بشدة 1	غير متفق 2	لا رأي لي 3	متفق 4	متفق بشدة 5
1	القدرة على ادماج جميع الموارد المتاحة في البيئة التعليمية					
2	ادخال التكنولوجيا اللازمة والقادرة على حفز الطلاب التعلم					
3	عدد كاف من اجهزة الحاسوب المتطورة					
4	البرامجيات الجاهزة المناسبة والقادرة على دمج تقنية المعلومات بنظم المعلومات المحاسبية					
5	التطبيقات المتعلقة بإستخدام شبكة الانترنيت					

2 -المدخل التعليمي:

لغرض تحقيق التطوير الجيد لنظم المعلومات المحاسبية ينبغي ان تتصف بـــ---

ت	الاسئلة	غير متفق بشدة 1	غير متفق 2	لا رأي لي 3	متفق 4	متفق بشدة 5
1	الربط بين مناهج نظم المعلومات المحاسبية و الواقع العملي والخبرة					
2	تقديم الخبرات التعليمية بشكل منظم					
3	تقديم وسيلة يمكن الاعتماد عليها لتقييم نتائج التعلم					
4	تطويرالقدرة على ادارة الوقت بفعالية					
5	اعطاء الحرية للطلاب في اختيار الاسلوب المتبع في التعلم					

(7)

Appendix B

Appendix B -1

The Frequency of the Respondent Information

1- TYPE of Respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Assistant Lecturer	10	28.6	28.6	28.6
	Lecturer	5	14.3	14.3	42.9
	SeniorLecturers	20	57.1	57.1	100.0
	Total	35	100.0	100.0	

2- Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	27	77.1	77.1	77.1
	Female	8	22.9	22.9	100.0
	Total	35	100.0	100.0	

3- Age

		Frequency	Percent	Valid Percent
Valid	25-29	5	14.3	14.3
	30-39	20	57.1	57.1
	40-49	5	14.3	14.3
	50-59	4	11.4	11.4
	OVER 60	1	2.9	2.9
	Total	35	100.0	100.0

4- Education

		Frequency	Percent	Valid Percent
	Undergraduate	2	5.7	5.7
	MSc	23	65.7	65.7
	PHD	10	28.6	28.6
	Total	35	100.0	100.0

5- Position

		Frequency	Percent	Valid Percent
Valid	Yes	10	28.6	28.6
	No	25	71.4	71.4
	Total	35	100.0	100.0

Appendix B-2

The Frequency Test of the Current State of AIS Course Content

1- Is able to deliver a good flow of idea

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	40.0	40.0	40.0
	No	21	60.0	60.0	100.0
	Total	35	100.0	100.0	

2- Contains basic AIS knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	62.9	62.9	62.9
	No	13	37.1	37.1	100.0
	Total	35	100.0	100.0	

3- Is able to deliver required personal skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	17.1	17.1	17.1
	No	29	82.9	82.9	100.0
	Total	35	100.0	100.0	

4- Is able to deliver required interpersonal skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	20.0	20.0	20.0
	No	28	80.0	80.0	100.0
	Total	35	100.0	100.0	

5- Is able to deliver good communication skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	54.3	54.3	54.3
	No	16	45.7	45.7	100.0
	Total	35	100.0	100.0	

6- Is able to deliver both organizational and business knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	62.9	62.9	62.9
	No	13	37.1	37.1	100.0
	Total	35	100.0	100.0	

7- Is able to deliver required accounting knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	20	57.1	57.1	57.1
	No	15	42.9	42.9	100.0
	Total	35	100.0	100.0	

8- Is able to deliver required IT knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	11.4	11.4	11.4
	No	31	88.6	88.6	100.0
	Total	35	100.0	100.0	

9- Is able to deliver required technical skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	14.3	14.3	14.3
	No	29	82.9	82.9	97.1
	9	1	2.9	2.9	100.0
	Total	35	100.0	100.0	

10- Is able to deliver required soft skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	22.9	22.9	22.9
	No	27	77.1	77.1	100.0
	Total	35	100.0	100.0	

11- Is in line with the professional body's requirements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	11.4	11.4	11.4
	No	31	88.6	88.6	100.0
	Total	35	100.0	100.0	

12- Supports the current world learning environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	5.7	5.7	5.7
	No	33	94.3	94.3	100.0
	Total	35	100.0	100.0	

13- Supports the current world learning approach

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	8.6	8.6	8.6
	No	32	91.4	91.4	100.0
	Total	35	100.0	100.0	

Appendix B-3

Reliability for Pilot Test

1- Core Knowledge

Reliability Statistics

Cronbach's Alpha	No. of Items
.723	7

Item Statistics

	Mean	Std. Deviation	N
CK1	4.34	.684	35
CK2	4.17	.822	35
CK3	4.43	.558	35
CK4	4.11	1.105	35
CK5	3.89	1.183	35
CK6	3.91	.887	35
CK7	3.89	1.323	35

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CK1	24.40	14.306	.503	.685
CK2	24.57	14.017	.436	.692
CK3	24.31	15.810	.282	.722
CK4	24.63	12.005	.541	.661
CK5	24.86	11.597	.544	.661
CK6	24.83	13.146	.535	.668
CK7	24.86	12.597	.322	.737

2- Business Environment

Reliability Statistics

Cronbach's Alpha	N of Items
.830	5

Item Statistics

	Mean	Std. Deviation	N
BE1	4.20	.759	35
BE2	3.86	1.033	35
BE3	4.26	.780	35
BE4	4.40	.695	35
BE5	4.51	.702	35

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
BE1	17.03	6.264	.724	.769
BE2	17.37	6.299	.429	.876
BE3	16.97	6.205	.715	.771
BE4	16.83	6.558	.718	.775
BE5	16.71	6.681	.667	.788

3- Personal and Interpersonal Skills

Reliability Statistics

Cronbach's Alpha	N of Items
.860	10

Item Statistics

	Mean	Std. Deviation	N
PIS1	4.34	.684	35
PIS2	4.14	.772	35
PIS3	4.20	.719	35
PIS4	3.94	.938	35
PIS5	4.31	.676	35
PIS6	4.00	.804	35
PIS7	4.20	.901	35
PIS8	4.09	.853	35
PIS9	4.20	.759	35
PIS10	4.26	.852	35

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PIS1	37.34	23.291	.694	.838
PIS2	37.54	22.255	.753	.831
PIS3	37.49	23.492	.621	.843
PIS4	37.74	23.903	.388	.865
PIS5	37.37	23.652	.643	.842
PIS6	37.69	23.928	.478	.854
PIS7	37.49	24.198	.376	.865
PIS8	37.60	23.012	.562	.847
PIS9	37.49	23.375	.598	.844
PIS10	37.43	22.017	.700	.835

4 - Professional Bodies

Reliability Statistics

Cronbach's Alpha	No. of Items
.751	6

Item Statistics

	Mean	Std. Deviation	N
PB1	3.91	1.121	35
PB2	4.09	.951	35
PB3	4.09	.887	35
PB4	4.06	.684	35
PB5	4.11	.676	35
PB6	4.20	.868	35

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PB1	20.54	9.550	.226	.809
PB2	20.37	8.770	.479	.720
PB3	20.37	7.711	.787	.628
PB4	20.40	9.776	.498	.718
PB5	20.34	9.585	.557	.706
PB6	20.26	8.726	.565	.695

5- Current Technological State

Reliability Statistics for CTS

Cronbach's Alpha	N of Items
.731	5

Item Statistics

	Mean	Std. Deviation	N
CTS1	4.03	1.098	35
CTS2	4.34	.725	35
CTS3	4.57	.558	35
CTS4	4.11	.832	35
CTS5	4.34	.873	35

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CTS1	17.37	4.417	.607	.642
CTS2	17.06	6.350	.423	.710
CTS3	16.83	7.205	.303	.744
CTS4	17.29	5.387	.607	.639
CTS5	17.06	5.408	.555	.659

6- Learning Approach

Reliability Statistics for LP

Cronbach's Alpha	N of Items
.719	5

Item Statistics

	Mean	Std. Deviation	N
LA1	4.43	.698	35
LA2	4.31	.718	35
LA3	4.09	.818	35
LA4	4.17	.568	35
LA5	3.89	1.105	35

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
LA1	16.46	5.550	.468	.678
LA2	16.57	5.370	.507	.663
LA3	16.80	4.753	.604	.619
LA4	16.71	5.916	.484	.681
LA5	17.00	4.353	.434	.722

7- Participatory Learning and Teaching Method

Reliability Statistics for PLTM

Cronbach's Alpha	N of Items
.719	5

Item Statistics

	Mean	Std. Deviation	N
PLTM1	4.14	.912	35
PLTM2	4.31	.796	35
PLTM3	4.00	.939	35
PLTM4	4.03	.985	35
PLTM5	3.91	.981	35

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PLTM1	16.26	7.432	.363	.715
PLTM2	16.09	7.081	.556	.647
PLTM3	16.40	6.600	.536	.647
PLTM4	16.37	6.417	.538	.645
PLTM5	16.49	6.963	.414	.698

8- Information Technology Competency

Reliability Statistics for ITC

Cronbach's Alpha	N of Items
.758	4

Item Statistics

	Mean	Std. Deviation	N
ITC1	4.34	.968	35
ITC2	4.34	.906	35
ITC3	4.31	.832	35
ITC4	4.29	.957	35

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ITC1	12.94	4.350	.622	.662
ITC2	12.94	4.408	.676	.634
ITC3	12.97	5.087	.538	.712
ITC4	13.00	5.118	.408	.782

9- Information Technology Control Knowledge

Reliability Statistics for

Cronbach's Alpha	N of Items
.803	5

Item Statistics

	Mean	Std. Deviation	N
ITCK1	4.14	.974	35
ITCK2	4.26	.741	35
ITCK3	4.09	.981	35
ITCK4	4.40	.775	35
ITCK5	4.40	.695	35

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ITCK1	17.14	6.185	.574	.774
ITCK2	17.03	6.558	.740	.724
ITCK3	17.20	5.871	.648	.747
ITCK4	16.89	6.869	.603	.762
ITCK5	16.89	7.810	.418	.811

10- General Information Technology Knowledge

Reliability Statistics

Cronbach's Alpha	N of Items
.900	11

Item Statistics

	Mean	Std. Deviation	N
GITK1	4.31	.676	35
GITK2	4.20	.759	35
GITK3	4.17	.891	35
GITK4	4.09	.853	35
GITK5	4.00	.907	35
GITK6	3.97	.891	35
GITK7	4.06	1.027	35
GITK8	4.23	.731	35
GITK9	4.20	.797	35
GITK10	4.14	.733	35
GITK11	4.14	.944	35
GITK12	4.31	.796	35
GITK13	4.06	.998	35

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
GITK1	41.20	36.341	.763	.886
GITK2	41.31	36.810	.612	.892
GITK3	41.34	34.761	.711	.886
GITK4	41.43	36.252	.588	.894
GITK5	41.51	34.845	.686	.888
GITK6	41.54	35.961	.587	.894
GITK7	41.46	35.138	.561	.897
GITK8	41.29	37.857	.515	.897
GITK9	41.31	36.163	.649	.890
GITK10	41.37	36.240	.707	.888
GITK11	41.37	34.652	.673	.889
GITK12	44.89	65.810	.734	.922
GITK13	45.14	63.655	.708	.922

11- Instructors'' Characteristics

Reliability Statistics

Cronbach's Alpha	No. of Items
.929	12

Item Statistics

	Mean	Std. Deviation	N
IC1	3.94	.998	35
IC2	3.86	1.115	35
IC3	4.06	1.083	35
IC4	4.14	.810	35
IC5	4.14	.845	35
IC6	4.11	.993	35
IC7	4.14	1.004	35
IC8	4.06	1.083	35
IC9	4.09	1.011	35
IC10	4.29	.825	35

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
IC1	45.26	65.726	.569	.928
IC2	45.34	62.408	.697	.923
IC3	45.14	62.244	.732	.921
IC4	45.06	66.467	.667	.924
IC5	45.06	65.879	.680	.924
IC6	45.09	63.669	.711	.922
IC7	45.06	66.408	.520	.930
IC8	45.14	61.067	.809	.918
IC9	45.11	61.751	.828	.917
IC10	44.91	65.492	.731	.922

11- AIS Curriculum Development

Reliability Statistics

Cronbach's Alpha	No. of Items
.881	8

Item Statistics

	Mean	Std. Deviation	N
AISCD1	4.21	.978	34
AISCD2	4.21	.808	34
AISCD3	4.15	.657	34
AISCD4	4.18	.716	34
AISCD5	4.09	.900	34
AISCD6	4.18	.834	34
AISCD7	4.24	.855	34
AISCD8	4.21	.845	34

Item-Total Statistics

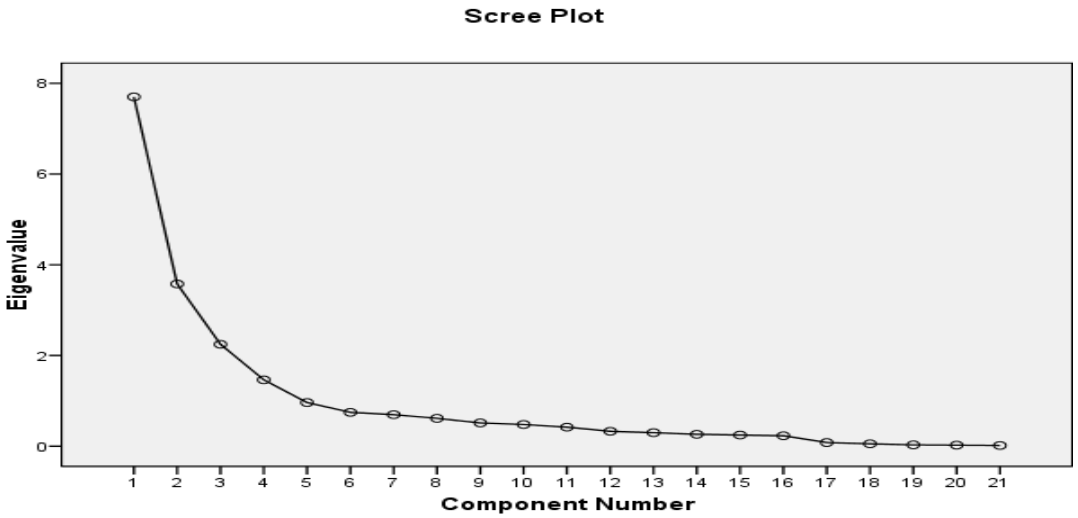
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
AISCD1	29.24	17.761	.650	.868
AISCD2	29.24	19.034	.622	.869
AISCD3	29.29	19.790	.658	.868
AISCD4	29.26	20.079	.542	.877
AISCD5	29.35	17.750	.727	.858
AISCD6	29.26	18.443	.689	.862
AISCD7	29.21	18.350	.681	.863
AISCD8	29.24	18.731	.633	.868

Appendix C

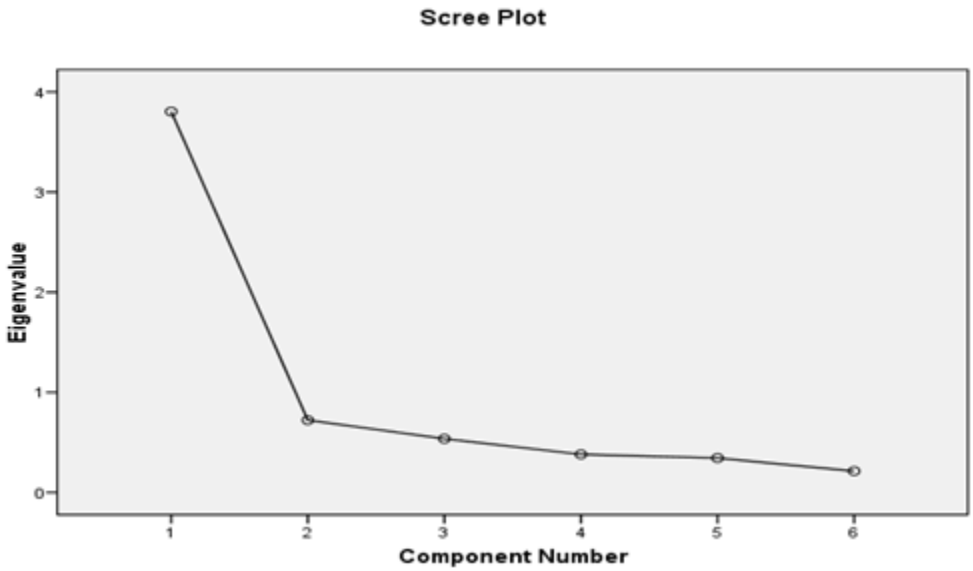
Factor Analysis Figures

Employers' Needs

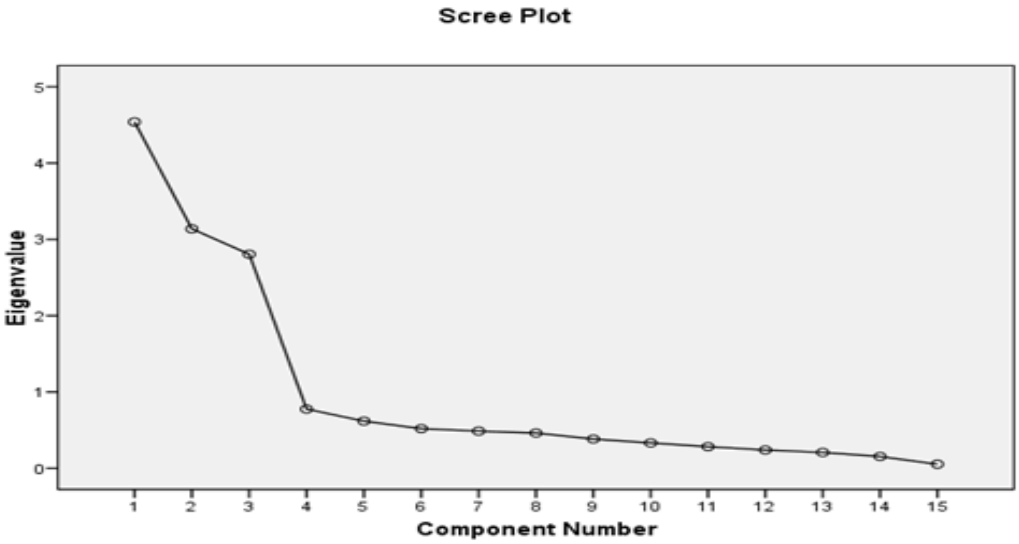
Scree Plot For Employers' Needs



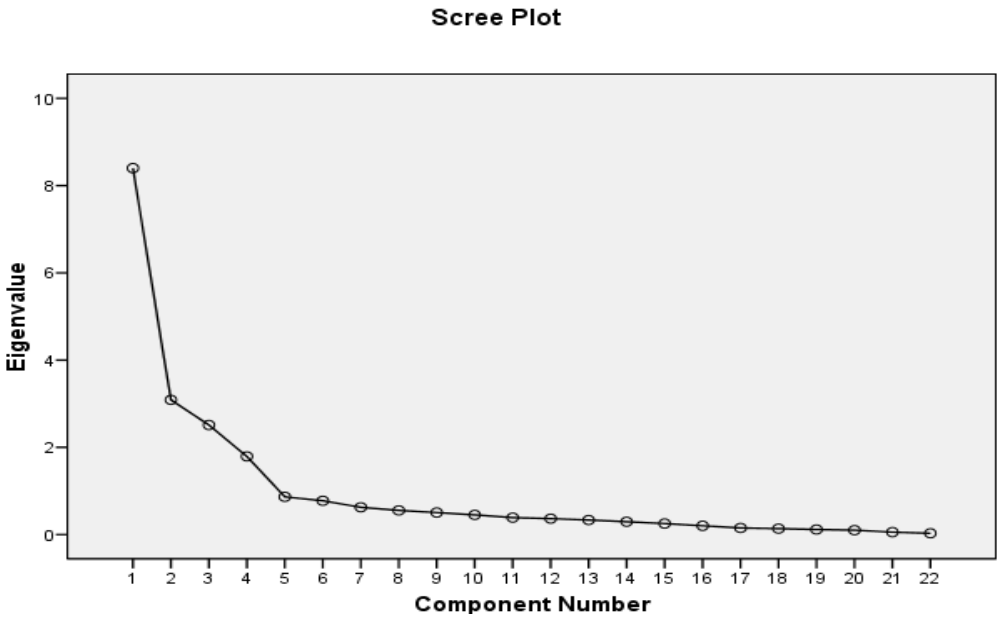
Professional Bodies



Learning Environment

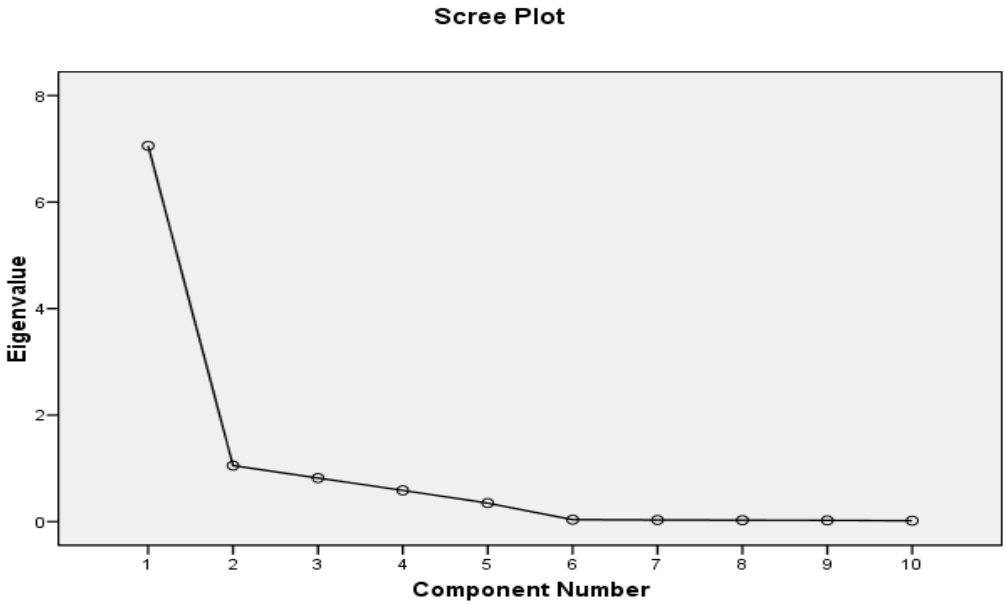


IFAC Recommendation

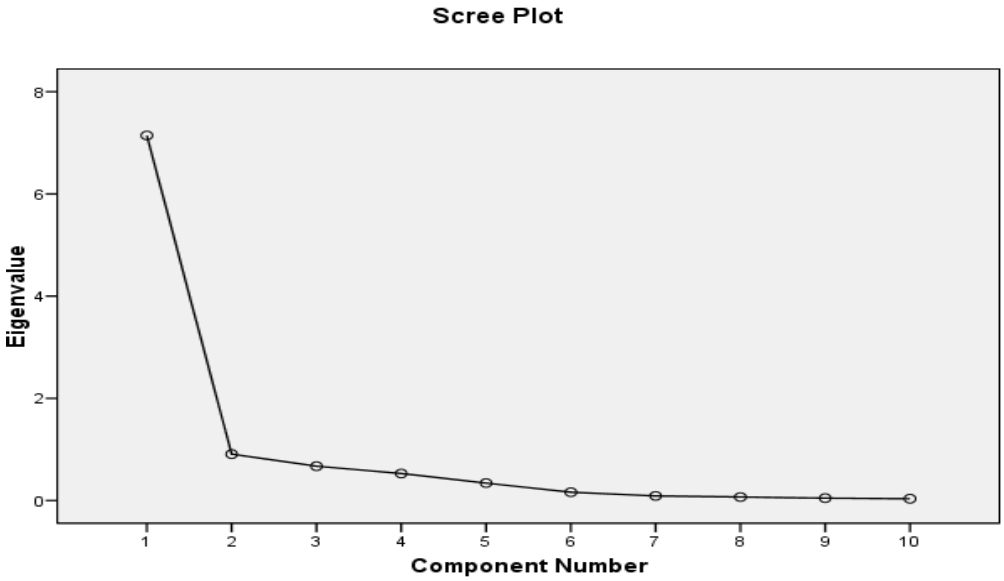


Instructors' Characteristics

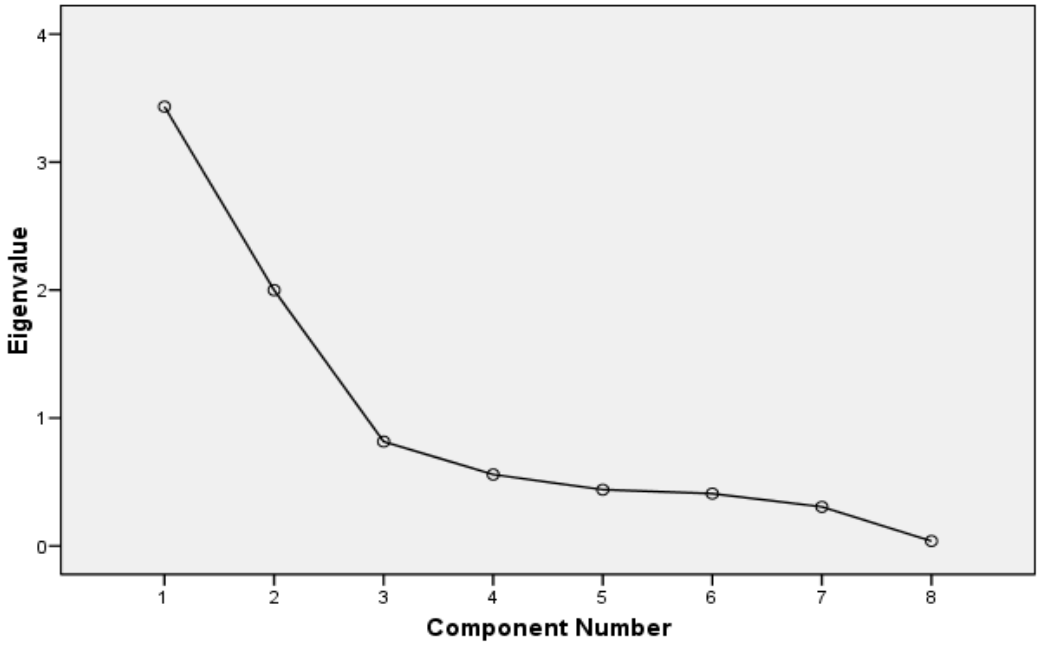
(First Attempt)



(Second Attempt)



Accounting Information System Course Content



Appendix D

Appendix D-1

The First Attempt for Regression Analysis

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	GICTK, PB, PS, PLTM, ITCK, BE, ITC, GITK, CK, LA, CTS, IPS(a)	.	Enter

a All requested variables entered.
b Dependent Variable: AISCD

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.906[a]	.821	.803	.21992	.821	46.264	12	121	.000

a. Predictors: (Constant), GICTK, PB, PLTM, PS, ITCK, BE, ITC, GITK, CK, LA, CTS, IPS
b. Dependent Variable: AISCD

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.850	12	2.237	46.264	.000(a)
	Residual	5.852	121	.048		
	Total	32.701	133			

a Predictors: (Constant), GICTK, PB, PLTM, PS, ITCK, BE, ITC, GITK, CK, LA, CTS, IPS
b Dependent Variable: AISCD

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta	Tolerance	VIF	B	Std. Error
1	(Constant)	.294	.270		1.089	.278		
	CK	.041	.036	.055	1.147	.253	.643	1.555
	BE	.014	.035	.017	.390	.697	.763	1.311
	PS	-.151	.037	-.195	-4.113	.000	.658	1.520
	IPS	.459	.075	.463	6.088	.000	.255	3.914
	PB	.003	.047	.003	.070	.944	.885	1.129
	CTS	.206	.050	.256	4.097	.000	.379	2.640
	LA	.017	.058	.022	.294	.769	.260	3.850
	PLTM	-.003	.032	-.004	-.097	.923	.809	1.236
	ITC	.106	.035	.150	3.030	.003	.607	1.647
	ITCK	-.073	.044	-.085	-1.660	.100	.569	1.756
	GITK	.193	.035	.271	5.554	.000	.619	1.615
	GICTK	.079	.032	.114	2.461	.015	.684	1.462

a Dependent Variable: AISCD

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions												
		(Constant)	CK	BE	PS	IPS	PB	CTS	LA	PLTM	ITC	ITCK	GITK	GICTK	(Constant)	CK
1	1	12.766	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.043	17.143	.00	.03	.05	.00	.00	.03	.01	.01	.03	.06	.07	.04	.03
	3	.035	19.158	.00	.04	.04	.02	.00	.00	.06	.01	.23	.03	.07	.00	.00
	4	.030	20.732	.00	.01	.02	.43	.00	.00	.01	.00	.05	.03	.00	.08	.05
	5	.024	23.021	.01	.01	.05	.02	.01	.04	.03	.07	.01	.14	.00	.03	.18
	6	.022	23.891	.00	.06	.01	.05	.00	.00	.03	.03	.01	.20	.00	.40	.08
	7	.020	25.524	.00	.12	.28	.01	.00	.03	.01	.00	.53	.01	.02	.03	.01
	8	.018	26.709	.00	.16	.00	.00	.01	.03	.01	.00	.00	.17	.02	.21	.45
	9	.015	28.978	.01	.47	.43	.05	.00	.01	.00	.02	.01	.02	.05	.05	.10
	10	.012	32.475	.02	.04	.11	.09	.01	.21	.00	.12	.00	.19	.21	.02	.05
	11	.007	41.419	.03	.04	.00	.00	.10	.03	.62	.03	.11	.14	.40	.04	.00
	12	.004	58.320	.58	.00	.01	.22	.15	.45	.22	.19	.02	.00	.16	.08	.00
	13	.003	62.125	.34	.02	.00	.09	.71	.16	.02	.52	.00	.02	.00	.02	.05

a Dependent Variable: AISCD

Casewise Diagnostics(a)

Case Number	Std. Residual	AISCD	Predicted Value	Residual
134	3.016	4.38	3.7118	.66317

a Dependent Variable: AISCD

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.9182	4.7343	3.5541	.44931	134
Residual	-.63630	.66317	.00000	.20976	134
Std. Predicted Value	-3.641	2.627	.000	1.000	134
Std. Residual	-2.893	3.016	.000	.954	134

a Dependent Variable: AISCD

Appendix D-2

The Second Attempt for Regression AnalysisDetails

Collinearity Diagnostics[a]

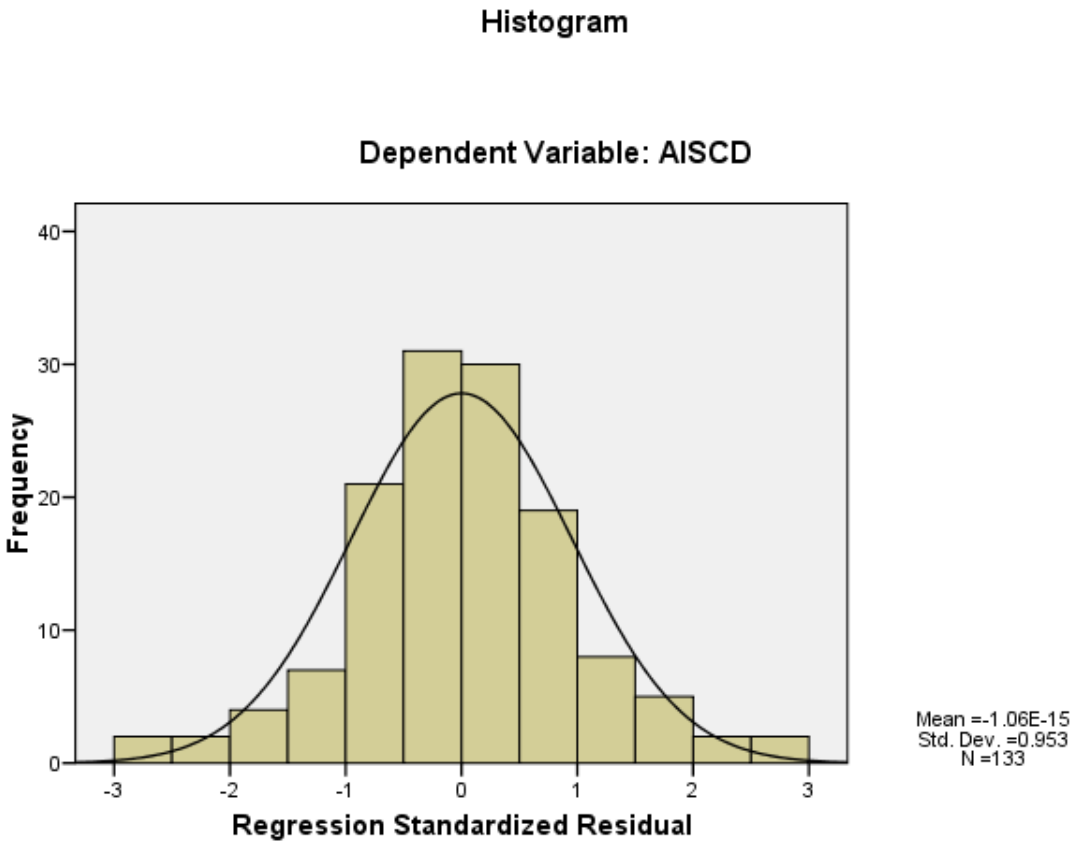
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions												
				(Constant)	CK	BE	PS	IPS	PB	CTS	LA	PLTM	ITC	ITCK	GITK	GICTK
1	1	12.754	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.045	16.787	.00	.00	.29	.01	.00	.01	.00	.01	.07	.08	.01	.01	.03
	3	.040	17.916	.00	.08	.04	.01	.00	.01	.05	.00	.05	.00	.13	.03	.00
	4	.031	20.375	.01	.00	.06	.43	.00	.01	.00	.01	.00	.04	.01	.07	.02
	5	.025	22.730	.01	.02	.25	.03	.01	.02	.04	.01	.35	.02	.00	.02	.06
	6	.022	23.948	.01	.03	.13	.01	.00	.05	.03	.00	.20	.21	.00	.22	.00
	7	.021	24.622	.01	.00	.00	.00	.01	.04	.00	.11	.18	.03	.00	.30	.09
	8	.019	26.190	.00	.01	.03	.01	.01	.03	.00	.00	.00	.15	.00	.15	.65
	9	.016	28.090	.00	.81	.17	.11	.00	.00	.01	.00	.00	.07	.04	.01	.03
	10	.013	31.937	.01	.01	.03	.09	.01	.18	.01	.16	.01	.20	.35	.00	.01
	11	.007	42.358	.02	.02	.00	.01	.31	.01	.50	.03	.11	.19	.24	.01	.00
	12	.004	54.636	.03	.01	.01	.28	.54	.04	.36	.59	.01	.01	.17	.18	.05
	13	.004	59.302	.90	.01	.00	.01	.11	.81	.01	.07	.02	.00	.04	.00	.05

a. Dependent Variable: AISCD

Residuals Statistics(a)

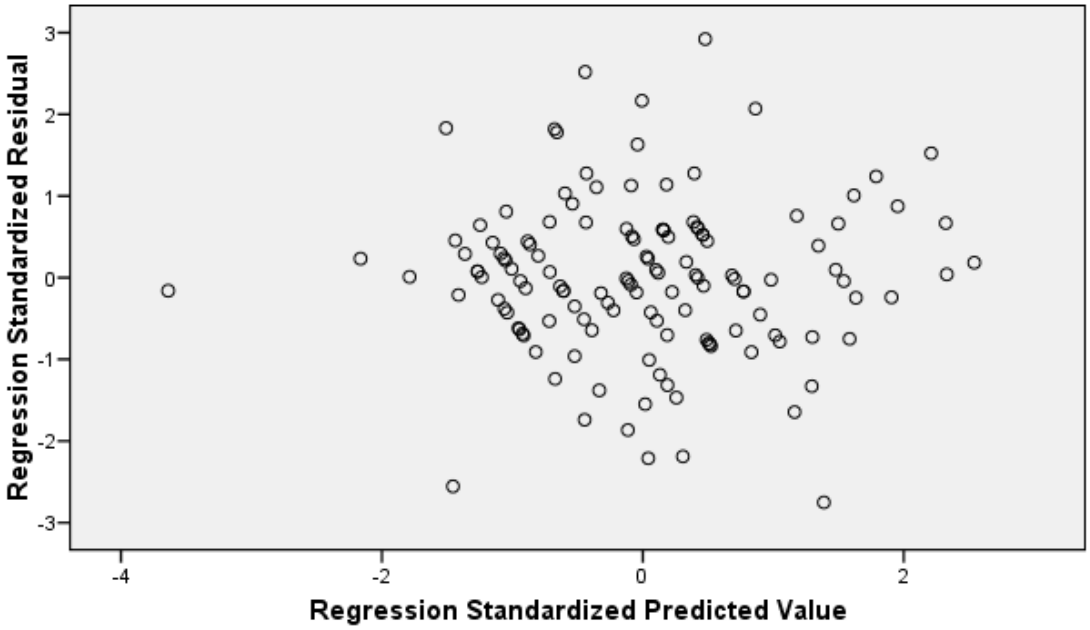
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.9078	4.7122	3.5592	.45391	133
Std. Predicted Value	-3.638	2.540	.000	1.000	133
Standard Error of Predicted Value	.036	.113	.062	.015	133
Adjusted Predicted Value	1.9221	4.7059	3.5569	.45342	133
Residual	-.56394	.59890	.00000	.19540	133
Std. Residual	-2.752	2.922	.000	.953	133
Stud. Residual	-2.836	3.082	.005	1.007	133
Deleted Residual	-.61585	.66595	.00233	.21831	133
Stud. Deleted Residual	-2.924	3.198	.006	1.020	133
Mahal. Distance	3.128	39.299	11.910	6.505	133
Cook's Distance	.000	.113	.009	.019	133
Centered Leverage Value	.024	.298	.090	.049	133

a Dependent Variable: AISCD



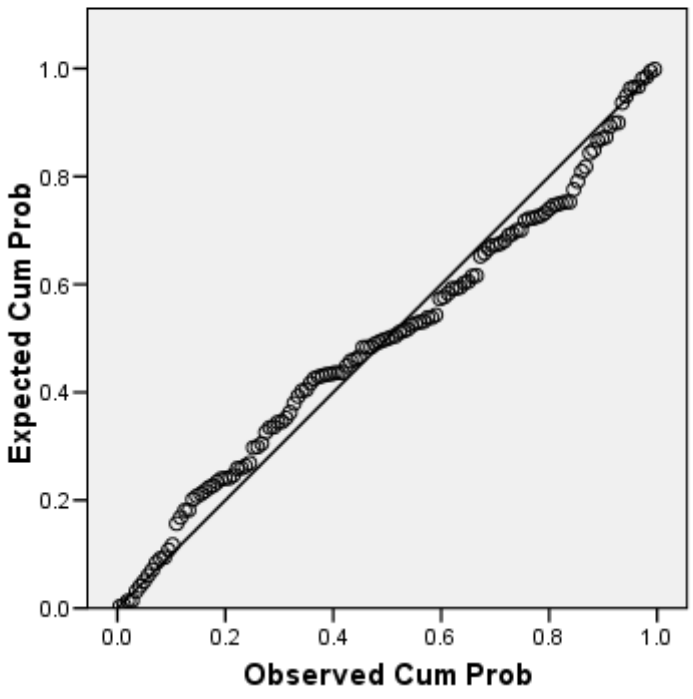
Scatterplot

Dependent Variable: AISCD



Normal P-P Plot of Regression Standardized Residual

Dependent Variable: AISCD



Appendix D-3

The First Attempt for Hierarchical Multiple Regression

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	GICTK, ITCK, GITK, ITC(a)	.	Enter
2	IC(a)	.	Enter
3	ITCxIC ITCKxIC, GICTK.AxIC	.	Enter

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.790[a]	.624	.612	.30775	.624	53.091	4	128	.000
2	.791[b]	.626	.611	.30812	.002	.697	1	127	.405
3	.947[c]	.896	.889	.16483	.270	80.196	4	123	.000

a. Predictors: (Constant), GICTK, ITCK, GITK, ITC

b. Predictors: (Constant), GICTK, ITCK, GITK, ITC, IC

c. Predictors: (Constant), GICTK, ITCK, GITK, ITC, IC, GITK.AxIC, ITCKxIC, ITCxIC, nnn

d. Dependent Variable: AISCD

ANOVA(d)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.114	4	5.028	53.091	.000(a)
	Residual	12.123	128	.095		
	Total	32.237	132			
2	Regression	20.180	5	4.036	42.512	.000(b)
	Residual	12.057	127	.095		
	Total	32.237	132			
3	Regression	28.895	9	3.211	118.171	.000(c)
	Residual	3.342	123	.027		
	Total	32.237	132			

a Predictors: (Constant), GICTK, ITCK, GITK, ITC
b Predictors: (Constant), GICTK, ITCK, GITK, ITC, IC
c Predictors: (Constant), GICTK, ITCK, GITK, ITC, IC, GITK.AxIC, ITCKxIC, ITCxIC,
d Dependent Variable: AISCD

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta	Tolerance	VIF	B	Std. Error
1	(Constant)	.734	.225		3.263	.001		
	ITC	.250	.044	.354	5.658	.000	.753	1.329
	ITCK	.100	.045	.122	2.192	.030	.954	1.048
	GITK	.345	.043	.487	7.974	.000	.788	1.269
	GICTK	.071	.044	.103	1.630	.106	.740	1.352
2	(Constant)	.865	.274		3.153	.002		
	ITC	.248	.044	.351	5.602	.000	.751	1.332
	ITCK	.096	.046	.118	2.109	.037	.947	1.056
	GITK	.345	.043	.488	7.977	.000	.788	1.270
	GICTK	.071	.044	.103	1.637	.104	.740	1.352
	IC	-.033	.039	-.046	-.835	.405	.988	1.012
3	(Constant)	.974	.390		2.496	.014		
	ITC	.492	.075	.697	6.585	.000	.075	13.303
	ITCK	-.020	.050	-.025	-.403	.687	.222	4.498
	GITK	.255	.127	.360	2.003	.047	.026	38.392
	GICTK	-.008	.024	-.012	-.354	.724	.707	1.415
	IC	-.219	.104	-.307	-2.109	.037	.040	25.109
	ITCxIC	-.113	.021	-.824	-5.522	.000	.038	26.390
	ITCKxIC	.013	.014	.083	.918	.361	.104	9.607
	GITK.xIC	.146	.008	.957	17.827	.000	.293	3.416
	GICTKxIC	.016	.035	.118	.465	.643	.013	75.820

a Dependent Variable: AISCD

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.734	.225		3.263	.001		
	ITC	.250	.044	.354	5.658	.000	.753	1.329
	ITCK	.100	.045	.122	2.192	.030	.954	1.048
	GITK	.345	.043	.487	7.974	.000	.788	1.269
	GICTK	.071	.044	.103	1.630	.106	.740	1.352
2	(Constant)	.865	.274		3.153	.002		
	ITC	.248	.044	.351	5.602	.000	.751	1.332
	ITCK	.096	.046	.118	2.109	.037	.947	1.056
	GITK	.345	.043	.488	7.977	.000	.788	1.270
	GICTK	.071	.044	.103	1.637	.104	.740	1.352
	IC	-.033	.039	-.046	-.835	.405	.988	1.012
3	(Constant)	.974	.390		2.496	.014		
	ITC	.492	.075	.697	6.585	.000	.075	13.303
	ITCK	-.020	.050	-.025	-.403	.687	.222	4.498
	GITK	.255	.127	.360	2.003	.047	.026	38.392
	GICTK	-.008	.024	-.012	-.354	.724	.707	1.415
	IC	-.219	.104	-.307	-2.109	.037	.040	25.109
	ITCxIC	-.113	.021	-.824	-5.522	.000	.038	26.390
	ITCKxIC	.013	.014	.083	.918	.361	.104	9.607
	GITK.AxIC	.146	.008	.957	17.827	.000	.293	3.416
	GICTKxIC	.016	.035	.118	.465	.643	.013	75.820

a. Dependent Variable: AISCD

Collinearity Diagnostics (a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions									
				(Constant)	ITC	ITCK	GITK	GICTK	IC	ITCxIC	ITCKxIC	GITK.AxIC	GICTKxIC
1	1	4.920	1.000	.00	.00	.00	.00	.00					
	2	.030	12.885	.02	.09	.52	.19	.04					
	3	.022	15.094	.00	.56	.00	.63	.03					
	4	.018	16.501	.00	.33	.02	.10	.87					
	5	.011	21.404	.97	.02	.46	.08	.06					
2	1	5.880	1.000	.00	.00	.00	.00	.00	.00				
	2	.045	11.444	.00	.08	.00	.05	.04	.56				
	3	.028	14.399	.01	.03	.63	.17	.02	.07				
	4	.021	16.601	.00	.52	.03	.66	.03	.01				
	5	.018	18.054	.00	.34	.01	.08	.88	.00				
	6	.008	27.772	.99	.03	.32	.04	.03	.36				
3	1	9.741	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.096	10.050	.00	.00	.01	.00	.03	.00	.00	.01	.03	.00
	3	.057	13.080	.00	.00	.03	.00	.00	.00	.00	.03	.00	.00
	4	.045	14.686	.00	.01	.00	.00	.00	.00	.01	.00	.01	.01
	5	.023	20.498	.01	.01	.03	.00	.15	.01	.01	.03	.04	.00
	6	.019	22.432	.01	.01	.00	.00	.39	.01	.00	.00	.19	.00
	7	.013	26.938	.00	.00	.01	.00	.41	.00	.01	.03	.64	.00
	8	.003	54.897	.07	.01	.54	.03	.01	.05	.00	.46	.00	.02
	9	.001	84.863	.11	.64	.34	.00	.00	.06	.66	.40	.08	.00
	10	.000	186.102	.80	.32	.04	.96	.00	.86	.29	.03	.00	.97

a Dependent Variable: AISCD

Casewise Diagnostics(a)

Case Number	Std. Residual	AISCD	Predicted Value	Residual
18	3.784	4.88	4.2512	.62377

a Dependent Variable: AISCD

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.8231	4.6760	3.5592	.46787	133
Residual	-.38183	.62377	.00000	.15911	133
Std. Predicted Value	-3.711	2.387	.000	1.000	133
Std. Residual	-2.317	3.784	.000	.965	133

a Dependent Variable: AISCD

Appendix D-4

The Second Attempt for Hierarchical Multiple Regression

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	ITCK ITC(a) GITK, , GICTK,	.	Enter
2	IC(a)	.	Enter
3	ITCxIC ITCKxIC, GICTK.AxIC	.	Enter

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.794[a]	.631	.619	.29784	.631	54.188	4	127	.000
2	.795[b]	.632	.618	.29837	.002	.549	1	126	.460
3	.924[c]	.854	.844	.19083	.222	46.508	4	122	.000

a. Predictors: (Constant), GICTK, ITCK, ITC, GITK

b. Predictors: (Constant), GICTK, ITCK, ITC, GITK, IC

c. Predictors: (Constant), GICTK, ITCK, ITC, GITK, IC, GITKxIC, ITCxIC, GICTKxIC, ITCKxIC

d. Dependent Variable: AISCD

ANOVA(d)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.227	4	4.807	54.186	.000(a)
	Residual	11.266	127	.089		
	Total	30.492	131			
2	Regression	19.276	5	3.855	43.305	.000(b)
	Residual	11.217	126	.089		
	Total	30.492	131			
3	Regression	26.050	9	2.894	79.486	.000(c)
	Residual	4.443	122	.036		
	Total	30.492	131			

a Predictors: (Constant), GICTK, ITCK, ITC, GITK
b Predictors: (Constant), GICTK, ITCK, ITC, GITK, IC
c Predictors: (Constant), GICTK, ITCK, ITC, GITK, IC, GITKxIC, ITCxIC, GICTKxIC, ITCKxIC
d Dependent Variable: AISCD

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.831	.225		3.687	.000		
	ITC	.189	.038	.297	5.027	.000	.831	1.203
	ITCK	.098	.044	.122	2.227	.028	.977	1.024
	GITK	.389	.042	.563	9.316	.000	.796	1.256
	GICTK	.061	.040	.091	1.535	.127	.828	1.207
2	(Constant)	.731	.263		2.778	.006		
	ITC	.184	.038	.290	4.830	.000	.809	1.236
	ITCK	.096	.044	.120	2.183	.031	.974	1.026
	GITK	.388	.042	.562	9.286	.000	.796	1.256
	GICTK	.063	.040	.094	1.582	.116	.824	1.213
	IC	.031	.042	.041	.741	.460	.965	1.036
3	(Constant)	2.093	.940		2.228	.028		
	ITC	.361	.029	.570	12.411	.000	.566	1.765
	ITCK	-.407	.203	-.505	-2.002	.047	.019	53.330
	GITK	.343	.028	.496	12.112	.000	.711	1.406
	GICTK	.016	.161	.024	.101	.920	.021	48.643
	IC	-.474	.246	-.624	-1.922	.057	.011	88.274
	ITCxIC	-.087	.009	-.647	-9.716	.000	.269	3.711
	GITKxIC	.128	.010	.856	13.505	.000	.297	3.361
	ITCKxIC	.121	.052	.849	2.309	.023	.009	113.183
	GICTKxIC	-.004	.040	-.031	-.099	.922	.012	80.894

a. Dependent Variable: AISCD

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	IC	.041[a]	.741	.460	.066	.965	1.036	.796
	ITCxIC	.063[a]	1.026	.307	.091	.772	1.295	.740
	GITKxIC	.334[a]	6.865	.000	.522	.900	1.111	.782
	ITCKxIC	.060[a]	.749	.455	.067	.459	2.179	.459
	GICTKxIC	.072[a]	.878	.382	.078	.435	2.297	.420
2	ITCxIC	.054[b]	.843	.401	.075	.706	1.416	.706
	GITKxIC	.360[b]	7.007	.000	.531	.801	1.249	.763
	ITCKxIC	.063[b]	.112	.911	.010	.009	108.461	.009
	GICTKxIC	.418[b]	.865	.389	.077	.013	79.969	.013

a. Predictors in the Model: (Constant), GICTK, ITCK, ITC, GITK

b. Predictors in the Model: (Constant), GICTK, ITCK, ITC, GITK, IC

c. Dependent Variable: AISCD

Collinearity Diagnostics[a]

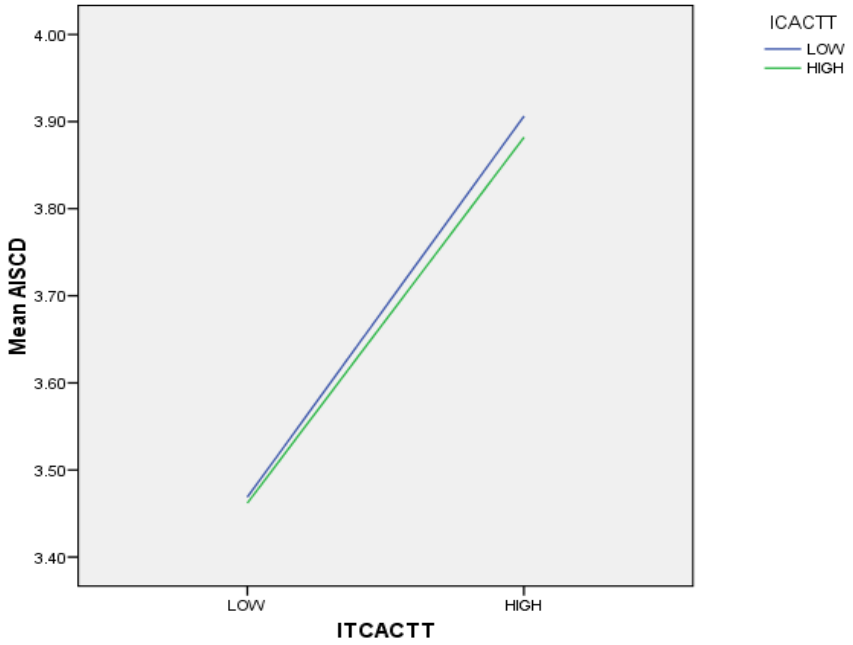
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions									
				(Constant)	ITC	ITCK	GITK	GICTK	IC	ITCxIC	GITKxIC	ITCKxIC	GICTKxIC
1	1	4.912	1.000	.00	.00	.00	.00	.00					
	2	.032	12.388	.02	.35	.44	.04	.02					
	3	.025	13.983	.00	.61	.08	.21	.29					
	4	.021	15.245	.00	.01	.00	.72	.54					
	5	.010	22.088	.97	.03	.48	.03	.14					
2	1	5.884	1.000	.00	.00	.00	.00	.00	.00				
	2	.036	12.818	.01	.16	.13	.12	.10	.24				
	3	.028	14.408	.00	.46	.20	.05	.10	.20				
	4	.023	16.034	.00	.37	.41	.09	.12	.24				
	5	.021	16.686	.00	.01	.00	.72	.54	.00				
	6	.008	27.581	.98	.00	.26	.03	.14	.32				
3	1	9.729	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.083	10.855	.00	.00	.00	.00	.00	.00	.08	.06	.00	.00
	3	.061	12.678	.00	.07	.00	.07	.00	.00	.01	.03	.00	.00
	4	.045	14.680	.00	.01	.00	.02	.00	.00	.02	.01	.00	.01
	5	.033	17.134	.00	.32	.00	.03	.00	.00	.05	.07	.00	.00
	6	.022	20.942	.00	.03	.00	.38	.00	.00	.02	.00	.00	.00
	7	.019	22.663	.01	.01	.00	.40	.00	.00	.02	.01	.00	.00
	8	.009	33.720	.00	.57	.00	.00	.00	.00	.79	.78	.00	.00
	9	.000	181.541	.01	.00	.33	.10	.70	.01	.01	.03	.32	.69
	10	.000	308.744	.99	.00	.66	.00	.29	.99	.00	.00	.67	.30

a. Dependent Variable: AISCD

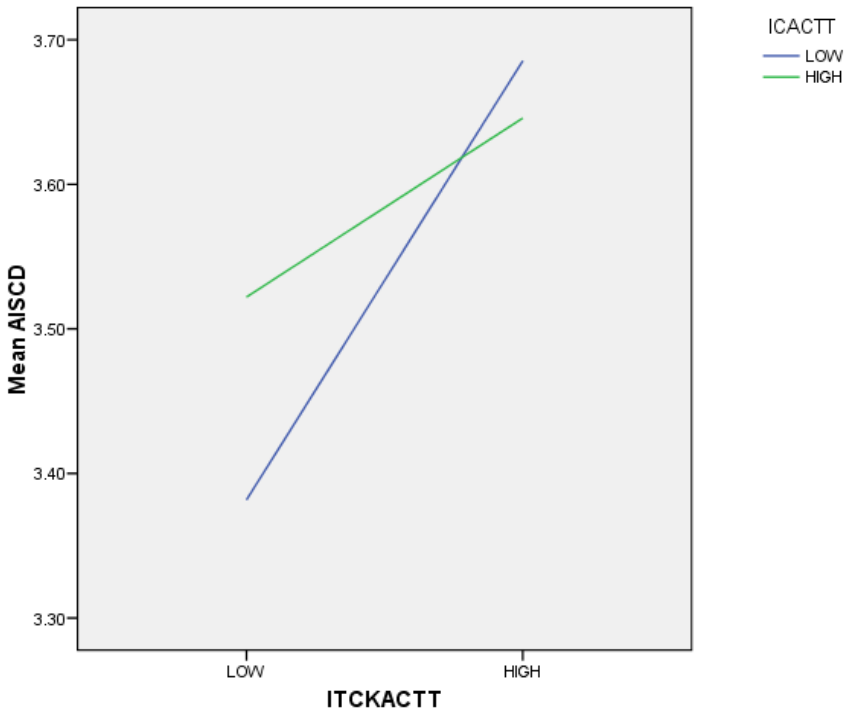
Appendix D-5

The Second Attempt for Hierarchical Multiple Regression Graph for the Significant Relationship

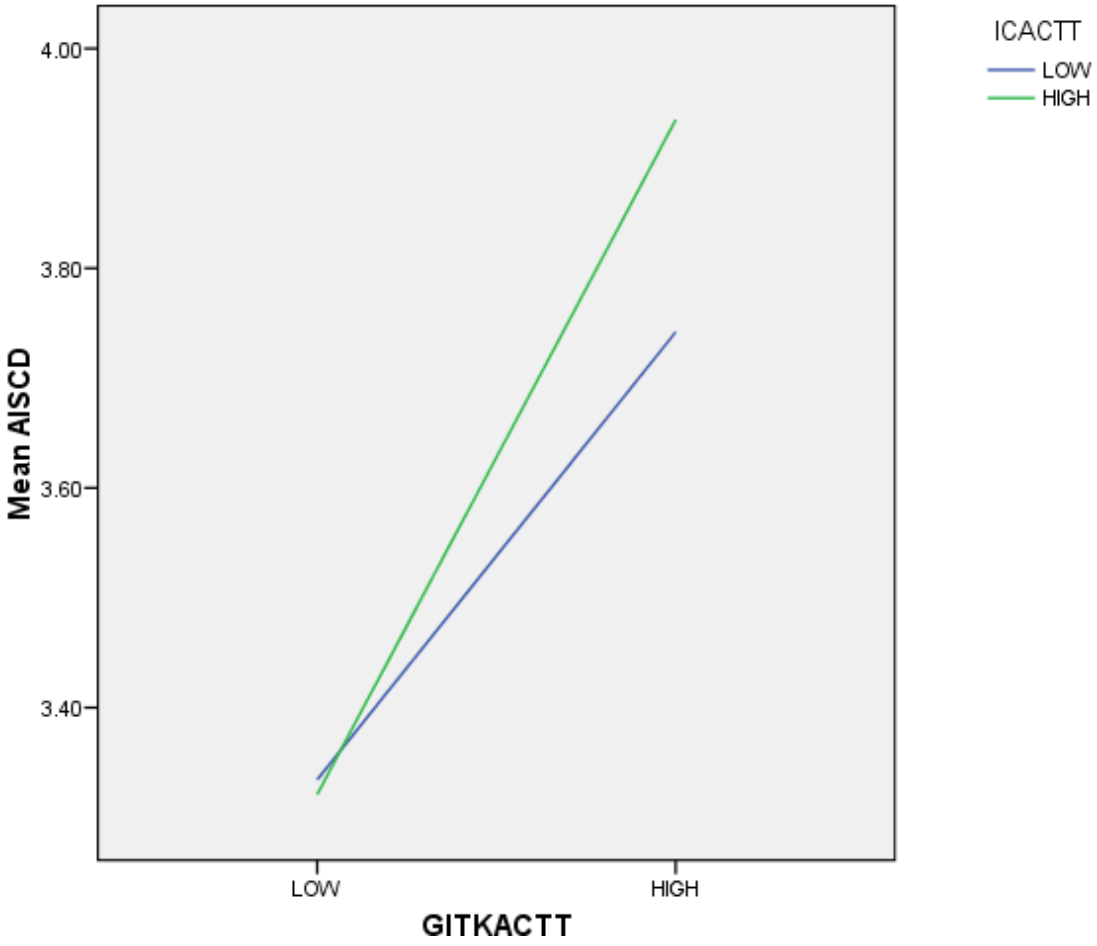
1- Information Technological Competency Graph



2- Information Technological Control Knowledge Graph



3- General Information Technological Knowledge Graph



Appendix E

Appendix E-1

A Letter from Universiti Utara Malaysia for Collecting Data purposes

UNIVERSITI UTARA MALAYSIA

06010 UUM Sintok, Kedah Darul Aman, Malaysia. Tel: 604 - 928 4000

R. No. : 44256
USD : 210

College of Business

"KEDAH SEJAHTERA"

UUM/COB/A-3 (91886)

September 23, 2010

TO WHOM IT MAY CONCERN

Dear Sir/Madam

DATA COLLECTION
PROGRAMME : Doctor of Philosophy
LECTURER : Dr. Mohamad Hisyam Selamat

This is to certify that the following is a postgraduate student from the College of Business, Universiti Utara Malaysia. He is pursuing the above mentioned course which requires him to undertake an academic study at any organisation. The details are as follows:

NO.	NAME	MATRIC NO.
1.	Naseem Yousif Hanna	91886

In this regard, I hope that you could kindly provide assistance and cooperation for him to succesfully complete the assignment given. All the information gathered will be strictly used for academic purposes only.

Your cooperation and assistance is very much appreciated.

Thank you.

"ILMU BUDI BAKTI"

Yours faithfully,

ROSLEE BIN MARDAN
Assistant Registrar
College of Business

c.c - Student's File (91886)

Cultural Attache
AUTHENTICATION
Kuala Lumpur
Number : 423
Date : 11/10/2010
EMBASSY OF THE REPUBLIC OF IRAQ
Embassy of the Republic of Iraq
Kuala Lumpur
Cultural Bureau
We approve the validity of the seal and the signature. The Dept. Is NOT responsible for its contents
THE ADVISOR

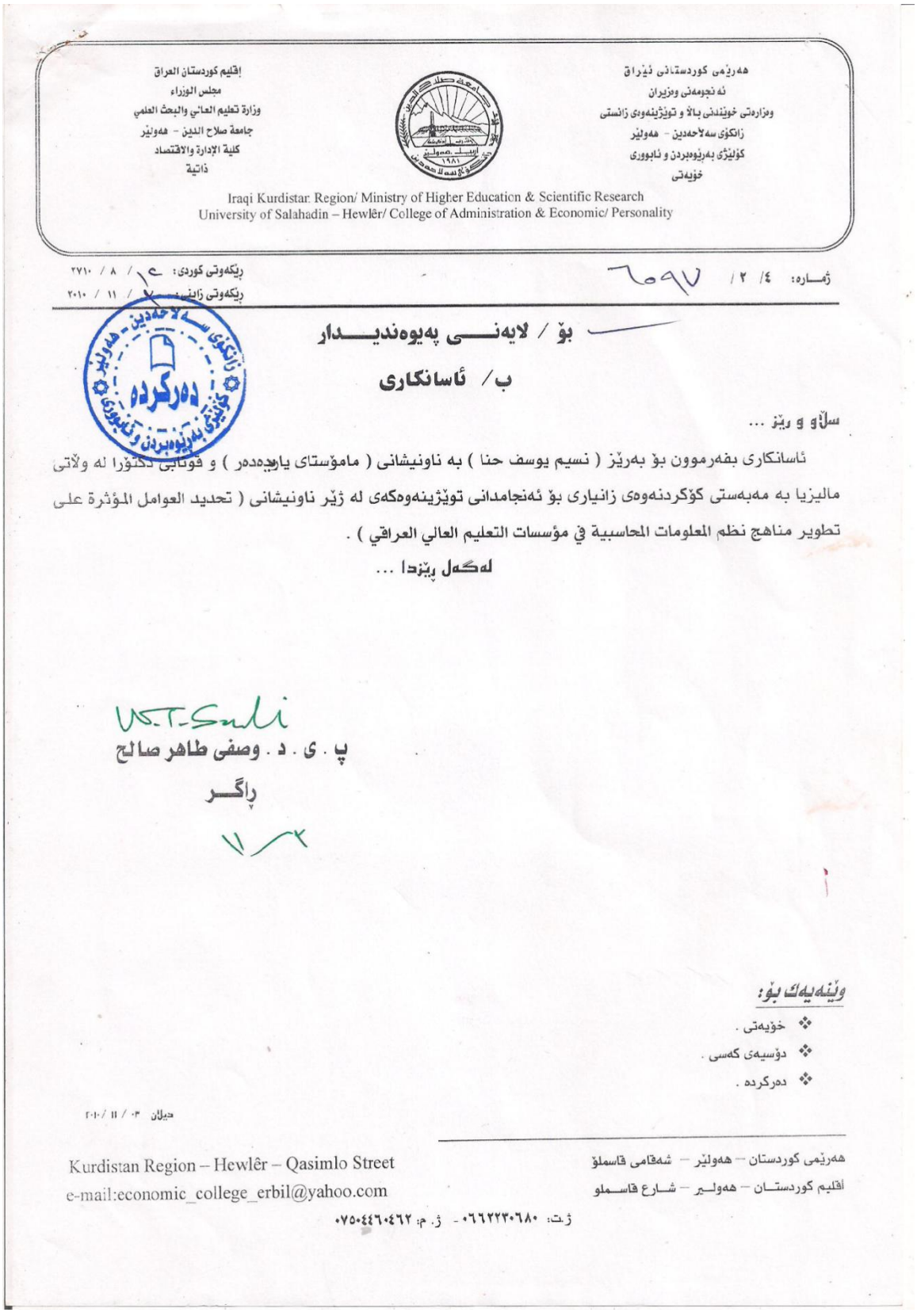
This is to certify that the signature appears on this document/Certificate/ Marriage Certificate/Birth Certificate is that of Mr. Roslee Mardan from University Utara ..... who is ..... Malaysia.

MINISTRY OF FOREIGN AFFAIRS * MALAYSIA *
MOHD. SYAHRIWI MD. ARIFFIN @ MD. RIPIN
Executive Officer
Consular Division
Ministry of Foreign Affairs
Putrajaya Malaysia
TELAH DI BAYAR RM
NO. RESIT
11 OCT 2010

QUALITY SYSTEM SIRIM MS ISO 9001 : 2008 REG. NO. AR 2471
UKAS
MSC MALAYSIA Status Institution

Appendix E-2

A Letter from College of Administration and Economic-University of Salahadin for Collecting Data purposes



هەرێمی کوردستانی ئێراق
نەخجەمەنی وەزیران
وەزارەتی خوێندنی بالا و تویژینەوەی زانستی
زانکۆی سەلاحەدین - هەولێر
کۆلێژی بەڕێوەبردن و ئابووری
خۆیەتی

إقليم كوردستان العراق
مجلس الوزراء
وزارة تعليم العالي والبحث العلمي
جامعة صلاح الدين - هەولێر
كلية الإدارة والاقتصاد
ذاتية

Iraqi Kurdistan Region/ Ministry of Higher Education & Scientific Research
University of Salahadin – Hewlêr/ College of Administration & Economic/ Personality

ژمارە: ٤/ ٢/ ٦٥٩٧

رێکەوتی کوردی: ٢٧١٠ / ٨ / ١٤
رێکەوتی زاینی: ٢٠١٠ / ١١ / ٧

بۆ / لایەنی پەیوەندیدار

ب/ ئاسانکاری

سڵاو و ڕێز ...

ئاسانکاری بفەرموون بۆ بەڕێز (نسیم یوسف حنا) بە ناونیشانی (ماموستای یاریدەدەر) و قوتابی دکتۆرا لە وڵاتی ماڵیزیا بە مەبەستی کۆکردنەوەی زانیاری بۆ ئەنجامدانی تویژینەوەکەی لە ژێر ناونیشانی (تحديد العوامل المؤثرة على تطوير مناهج نظم المعلومات المحاسبية في مؤسسات التعليم العالي العراقي) .

لەگەل ڕێزدا ...

پ . ی . د . وصفی طاهر صالح

ڕاگر

وێنەیەک بۆ:
- خۆیەتی .
- دۆسیەی کەسی .
- دەرکردە .

دیلان ٠٣ / ١١ / ٢٠١٠

هەرێمی کوردستان – هەولێر – شەقامی قاسملۆ
إقليم كوردستان – هەولێر – شارع قاسملو

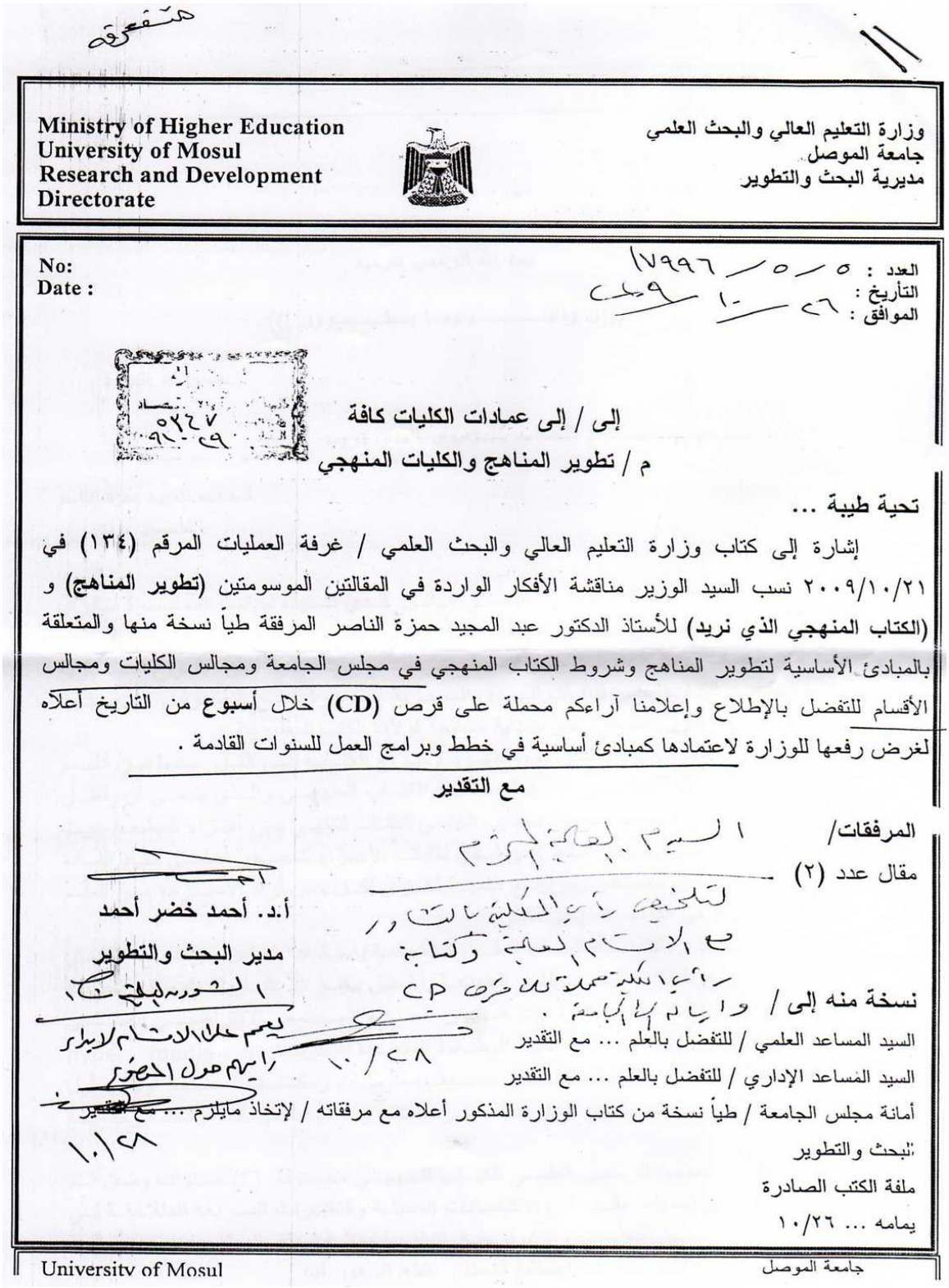
ژ.ت: ٠٦٦٢٢٣٠٦٨٠ - ژ.م: ٠٧٥٠٤٤٦٠٤٦٢

Kurdistan Region – Hewlêr – Qasimlo Street
e-mail:economic_college_erbil@yahoo.com

دەرکردە

Appendix E-3

A Governmental Document form MHESR in Iraq about Curriculum Development (2009)



Ministry of Higher Education
University of Mosul
Research and Development
Directorate

وزارة التعليم العالي والبحث العلمي
جامعة الموصل
مديرية البحث والتطوير

No:
Date :

العدد : ٥/٥/٧٩٩٦
التأريخ :
الموافق :

إلى / إلى عمادات الكليات كافة
م / تطوير المناهج والكليات المنهجي

تحية طيبة ...

إشارة إلى كتاب وزارة التعليم العالي والبحث العلمي / غرفة العمليات المرقم (١٣٤) في ٢٠٠٩/١٠/٢١ نسب السيد الوزير مناقشة الأفكار الواردة في المقالتين الموسومتين **(تطوير المناهج)** و **(الكتاب المنهجي الذي نريد)** للأستاذ الدكتور عبد المجيد حمزة الناصر المرفقة طياً نسخة منها والمتعلقة بالمبادئ الأساسية لتطوير المناهج وشروط الكتاب المنهجي في مجلس الجامعة ومجالس الكليات ومجالس الأقسام للتفضل بالإطلاع وإعلامنا آراءكم محملة على قرص **(CD)** خلال **أسبوع** من التاريخ أعلاه لغرض رفعها للوزارة لاعتمادها كمبادئ أساسية في خطط وبرامج العمل للسنوات القادمة .

مع التقدير

أ.د. أحمد خضر أحمد
مدير البحث والتطوير

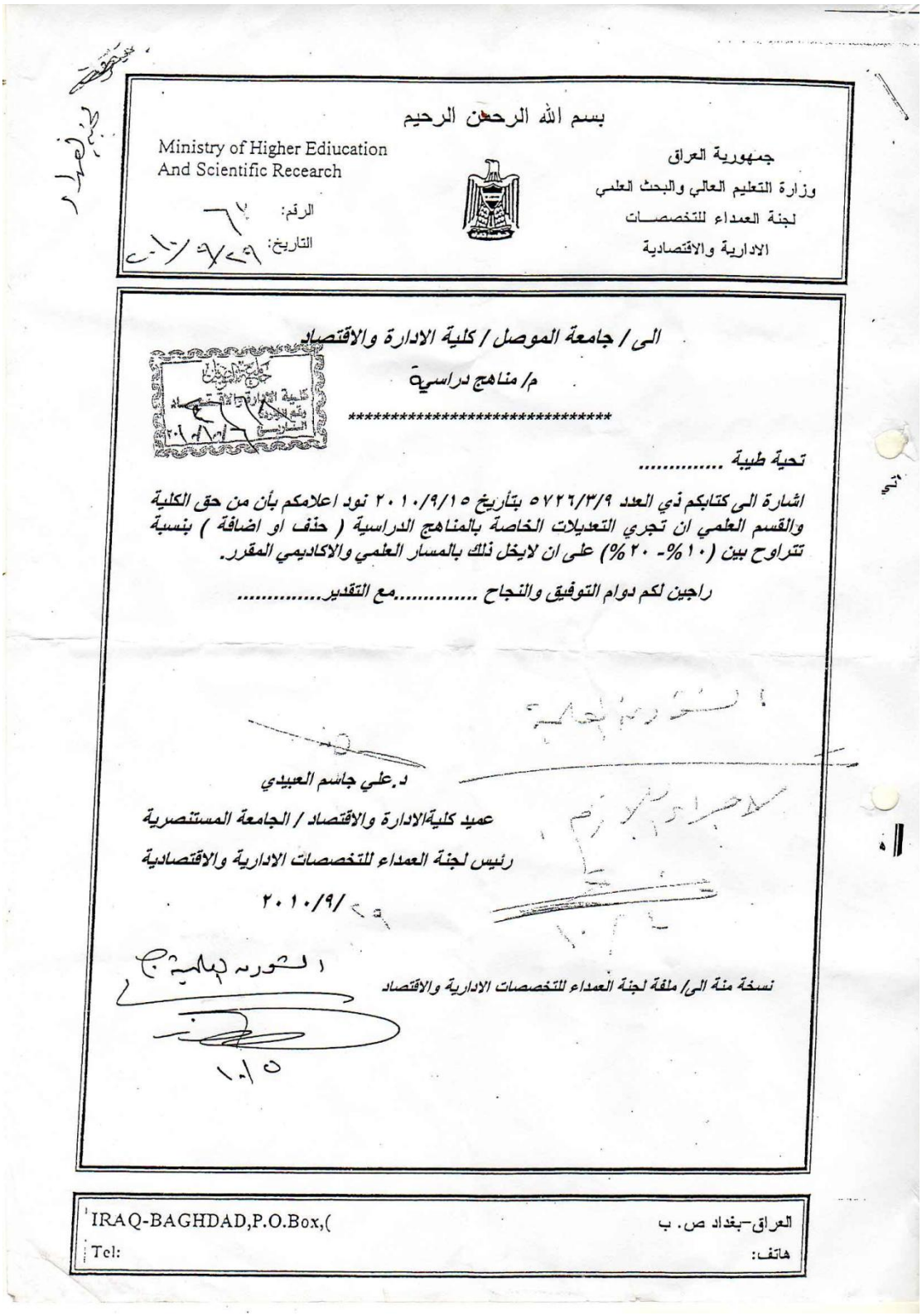
المرفقات/
مقال عدد (٢)

نسخة منه إلى /
السيد المساعد العلمي / للتفضل بالعلم ... مع التقدير
السيد المساعد الإداري / للتفضل بالعلم ... مع التقدير
أمانة مجلس الجامعة / طياً نسخة من كتاب الوزارة المذكور أعلاه مع مرفقاته / لإتخاذ مايلزم ... مع التقدير
البحث والتطوير
ملفة الكتب الصادرة
يمامه ... ١٠/٢٦

University of Mosul
جامعة الموصل

Appendix E-4

A Governmental Document form MHESR in Iraq about Curriculum Development (2010)



بسم الله الرحمن الرحيم

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
لجنة العمداء للتخصصات
الادارية والاقتصادية

Ministry of Higher Ediucation
And Scientific Recearch

الرقم:
التاريخ:

الى / جامعة الموصل / كلية الادارة والاقتصاد

م/ مناهج دراسية

****

تحية طيبة .....

اشارة الى كتابكم ذي العدد ٥٧٢٦/٣/٩ بتأريخ ٢٠١٠/٩/١٥ نود اعلامكم بأن من حق الكلية والقسم العلمي ان تجري التعديلات الخاصة بالمناهج الدراسية (حذف او اضافة) بنسبة تتراوح بين (١٠%- ٢٠%) على ان لايخل ذلك بالمسار العلمي والاكاديمي المقرر.

راجين لكم دوام التوفيق والنجاح .....مع التقدير.....

د.علي جاسم العبيدي

عميد كليةالادارة والاقتصاد / الجامعة المستنصرية

رئيس لجنة العمداء للتخصصات الادارية والاقتصادية

٢٠١٠/٩/

نسخة منة الى/ ملفة لجنة العمداء للتخصصات الادارية والاقتصاد

IRAQ-BAGHDAD,P.O.Box,(
Tel:

العراق–بغداد ص. ب
هاتف: