

CONCERNS AND PROFESSIONAL DEVELOPMENT NEEDS OF FACULTY AT KING  
ABDUL-AZIZ UNIVERSITY IN SAUDI ARABIA IN ADOPTING ONLINE TEACHING

by

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AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

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Department of Curriculum and Instruction  
College of Education

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Manhattan, Kansas

2013

## **Abstract**

The purpose of this study was to investigate concerns regarding the adoption of online teaching as expressed by faculty and instructors in six departments in the College of Arts and Humanities at King Abdulaziz University. Additionally, it investigated faculty professional development needs in adopting online teaching. The data in this study were obtained from 147 faculty members (response rate 63.9%). A non-experimental, cross-sectional survey design was used, incorporating the Stages of Concern Questionnaire. The data were analyzed using quantitative measures (descriptive data analysis and inferential analysis). This study utilized the Concerns Based Adoption Model as its theoretical framework.

King Abdulaziz University faculty Stages of Concerns findings showed a mean score percentile of 87% of them as Unconcerned. The Informational stage showed a mean score percentile of 72%, and the Personal stage was the third highest with a mean score percentile of 70%. Refocusing, Collaboration, and Management were the fourth, fifth, and sixth highest stages of concern. The Consequence stage was the lowest stage of concern. The Stages of Concern Questionnaire had concerns that were generally aligned to nonusers or users who sometimes implement parts of online teaching.

The data analysis regarding the participants' personal characteristics indicated that their concerns in adopting online teaching were not influenced by their age, country of graduation, or years of teaching experience. A statistically significant difference was found in the participant concerns in adopting online teaching by gender,  $p < .05$ . The significance differences were found in stage one (Informational) ( $p < .05$ ), stage two (Personal) ( $p < .01$ ), and stage six (Refocusing) ( $p < .001$ ). Likewise, the data analysis regarding the participants' contextual characteristics indicated that their concerns in adopting online teaching were not influenced by their department

or academic rank. A statistically significant difference was found in the participants' concerns in adopting online teaching based on administrative support,  $p < .05$ . The significances were found in stages zero (Unconcerned) ( $p < .05$ ) and three (Management) ( $p < .01$ ). The data analysis regarding the technographic characteristics also indicated a statistically significant influence of participants' prior instructional technology use and technology-related professional development on their use of technology in teaching. The significance values were .000, .006, .009, and .030.

The study concludes with recommendations for King Abdulaziz University regarding faculty adoption of online teaching and recommendations for future studies focused on professional development programs and the adoption of online teaching in King Abdulaziz University as well as in other Saudi universities.

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Approved by:

Major Professor  
Dr. Rosemary Talab

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The study concludes with recommendations for King Abdulaziz University regarding faculty adoption of online teaching and recommendations for future studies focused on professional development programs and the adoption of online teaching in King Abdulaziz University as well as in other Saudi universities.

# Table of Contents

List of Figures .....	xiii
List of Tables .....	xv
Acknowledgements .....	xviii
Dedication.....	xx
Chapter 1 - Introduction .....	1
Chapter Overview .....	1
The Growth of Online Learning in the United States .....	1
Online Learning in Saudi Arabia .....	3
Theoretical Framework - Concerns-Based Adoption Model .....	12
The Concerns Based Adoption Model’s Underlying Assumptions .....	13
Statement of the Problem .....	15
Purpose of the Study .....	16
Significance of the Study.....	17
Research Questions and Null Hypotheses .....	18
Delimitation of the Study .....	19
Definition of Terms.....	20
Abbreviations.....	22
Overview .....	22
Chapter 2 - Review of the Literature.....	23
Chapter Overview .....	23
Fuller’s Levels of Concerns.....	23
Concerns-Based Adoption Model.....	24
Concerns Based Adoption Model Elements .....	25
Stages of Concern.....	25
Innovation Configuration.....	28
Levels of “Use” of the Innovations .....	28
Selected Personal Characteristics of Faculty Members.....	30
Age.....	30

Gender.....	33
Country of Graduation.....	34
Years of Teaching Experience .....	35
Selected Contextual Characteristics of Faculty Members .....	36
Administrative Support of Technology .....	36
College/Department Association.....	37
Academic Rank .....	37
Selected Technographic Characteristics of Faculty Members .....	38
Prior Instructional Technology Use.....	38
Technology-Related Professional Development.....	39
Attitudes Toward Teaching with Technology.....	39
Example of Concerns-Based Adoption Model Use .....	40
Online Learning .....	41
Advantages of Online Learning .....	43
Online Teaching in Higher Education .....	44
Higher Education in Saudi Arabia .....	46
King Abdulaziz University and Online Teaching.....	47
Chapter Summary .....	51
Chapter 3 - Methodology .....	52
Chapter Overview .....	52
Research Questions .....	52
Research Design.....	53
Research Setting.....	54
Selecting the Population .....	55
Protection of Human Subjects .....	56
Data Collection Methods .....	57
Survey Preparation .....	57
Stages of Concern Questionnaire .....	59
External Validity .....	60
Internal Validity .....	60
Reliability.....	61

Survey Administration.....	62
Data Analysis .....	63
Quantitative Measures .....	63
Independent Variables .....	63
Dependent Variables.....	63
Descriptive Statistics .....	64
Inferential Statistics .....	65
Reliability.....	67
Validity .....	67
Ethical Considerations.....	68
Chapter 4 - Data Analysis and Findings.....	69
Chapter Overview .....	69
Research Questions and Null Hypotheses .....	70
Descriptive Statistics .....	71
Characteristics of the Respondents.....	71
Personal Characteristics .....	71
Age.....	72
Gender.....	72
Country of Graduation .....	73
Years of Teaching Experience .....	74
Contextual Characteristics .....	75
Administrative Support of Technology .....	75
Department Association.....	80
Academic Rank .....	81
Technographic Characteristics .....	81
Prior Instructional Technology Use.....	82
Technology-Related Professional Development .....	86
Attitudes toward Teaching with Technology .....	91
Stages of Concern.....	94
SoC Analysis .....	96
Quantitative Measures .....	97

Research Question One.....	98
Test Results of Null Hypotheses: .....	99
Research Question Two.....	101
Test Results of Null Hypotheses: .....	102
Research Question Three .....	105
Test Results of Null Hypotheses: .....	106
Chapter Summary .....	119
Chapter 5 - Summary, Conclusion, and Recommendations for Future Studies .....	123
Chapter Overview .....	123
Summary.....	124
Personal Characteristics.....	124
Contextual Characteristics .....	125
Technographic Characteristics .....	126
Stages of Concern (SoC).....	127
Quantitative Measures .....	127
Research Question One.....	127
Research Question Two.....	128
Research Question Three .....	128
Conclusions.....	129
Research Question One.....	129
Research Question Two.....	131
Research Question Three .....	133
Recommendations for King Abdulaziz University.....	135
Recommendations for Future Studies .....	138
References .....	141
Appendix A - KSU IRB Approval.....	155
Appendix B - Letter of Consent.....	156
Appendix C - Southwest Educational Development Laboratory License Agreement.....	158
Appendix D - The Survey.....	160
Appendix E - The Arabic Survey.....	169
Appendix F - Support Letters .....	177

Appendix G - Petherbridge's Permission.....	180
Appendix H - Yidana's Permission .....	181
Appendix I - Letters in Arabic.....	182
Appendix J - KSU IRB Training Certificates.....	184

## List of Figures

Figure 1.1. Total and Online Enrollment in Degree-granting Postsecondary Institutions: Fall 2002 - Fall 2011 .....	2
Figure 1.2. Online Education is Critical to the Long-term Strategy of my Institution: Fall 2002 - Fall 2011 .....	2
Figure 1.3. Barrier Factors.....	11
Figure 2.1. The Environment’s Three Diagnostic Dimensions .....	25
Figure 2.2. Correlation Coefficients for Stages of Concern and Demographic Variables.....	30
Figure 2.3. Computer Integration Mean Scores by Age .....	32
Figure 2.4. Type of Courses Based on Proportion of Content Delivered Online .....	43
Figure 2.5. Proportion Reporting Learning Outcomes in Online Education as Inferior Compared to Face-to-face: 2003 - 2012.....	44
Figure 2.6. Cost Comparisons of Traditional, Blended, and Virtual online teaching Models .....	45
Figure 2.7. EMES Main Page .....	49
Figure 2.8. CENTRA interface .....	50
Figure 3.1. Coefficients of Internal Reliability for Each Stage of SoCQ.....	61
Figure 4.1. Age Range of the Participants.....	72
Figure 4.2. Gender of the Participants.....	73
Figure 4.3. Countries from which Last Degree Was Obtained.....	74
Figure 4.4. Teaching Experience of the Participants .....	75
Figure 4.5. Administrative Support Department Level.....	77
Figure 4.6. Administrative Support College Level.....	78
Figure 4.7. Administrative Support Vice-Presidents & Above Level .....	79
Figure 4.8. Department Association of the Participants.....	80
Figure 4.9. Academic Rank of the Participants .....	81
Figure 4.10. Online Teaching Systems Use .....	83
Figure 4.11. Computer-Technology Related Professional Development Hours .....	84
Figure 4.12. Formal Training in Adopting Online Teaching .....	85
Figure 4.13. Grant Support for Adopting Online Teaching .....	86

Figure 4.14. Access to Personnel Assistant .....	86
Figure 4.15. Technology-Related Professional Development 1 of 2 .....	88
Figure 4.16. Technology-Related Professional Development 2 of 2 .....	89
Figure 4.17. Formal Training on Obtaining a Grant to Support LMS use .....	90
Figure 4.18. Formal Training on Obtaining a Grant to Develop Online Courses .....	91
Figure 4.19. Faculty Attitudes Toward Teaching with Technology 1 of 2 .....	93
Figure 4.20. Faculty Attitudes Toward Teaching with Technology 2 of 2 .....	94
Figure 4.21. Mean Percentile Stage Score for Participants .....	96

## List of Tables

Table 1.1. King Abdulaziz University Faculty of Economics and Management Online Teaching Program Population .....	7
Table 1.2. King Abdulaziz University Faculty of Economics and Management Online Teaching Programs Population by Gender .....	8
Table 1.3. King Abdulaziz College of Arts and Humanities Faculty .....	9
Table 1.4. King Abdulaziz College of Arts and Humanities Faculty by Gender .....	9
Table 2.1. Stages of Concern: Typical Expressions of Concern About the Innovation.....	28
Table 2.2. Levels of Use and Associated Behaviors.....	29
Table 3.1. Population by Rank of the Six Departments in the College of Arts and Humanities Not Offering Online Programs .....	56
Table 3.2. Population by Gender of the Six Departments in the College of Arts and Humanities That Do Not Offer Online Programs .....	56
Table 3.3. Summary of Independent Variables and Dependent Variables .....	64
Table 4.1. Age Range of the Participants .....	72
Table 4.2. Gender of the Participants.....	73
Table 4.3. Countries from which Last Degree Was Obtained.....	74
Table 4.4. Teaching Experience of the Participants.....	75
Table 4.5. Administrative Support Department Level.....	76
Table 4.6. Administrative Support College Level .....	77
Table 4.7. Administrative Support Vice-Presidents & Above Level.....	78
Table 4.8. Department Association of the Participants.....	80
Table 4.9. Academic Rank of the Participants .....	81
Table 4.10. Online Teaching Systems Use.....	82
Table 4.11. Computer-Technology Related Professional Development Hours .....	84
Table 4.12. Questions 60, 62, and 64.....	85
Table 4.13. Technology-Related Professional Development .....	88
Table 4.14. Formal Training on Obtaining a Grant to Support LMS use .....	89
Table 4.15. Formal Training on Obtaining a Grant to Develop Online Courses.....	90

Table 4.16. Faculty Attitudes Toward Teaching with Technology .....	93
Table 4.17. Mean Percentile Stage Score for Participants .....	95
Table 4.18. Pillai’s Trace Test Results of MANOVA on Stage of Concerns .....	99
Table 4.19. ANOVA Significance Values for Concerns in Adopting Online Teaching by Gender .....	100
Table 4.20. Gender Means for Stages 1, 2 and 6.....	100
Table 4.21. Pillai’s Trace Test Results of MANOVA on Stage of Concerns Based on Administrative Support.....	103
Table 4.22. ANOVA Significance Values for Concerns in Adopting Online Teaching Based on Administrators Support.....	104
Table 4.23. Pillai’s Trace Test Results of MANOVA on Stage of Concerns Based on the Department.....	105
Table 4.24. Pillai’s Trace Test Results of MANOVA on Stages of Concerns Based on Academic Rank.....	105
Table 4.25. Pillai’s Trace Test Results of MANOVA on Faculty Use of Technology in Teaching Based on Prior Instructional Technology Use .....	107
Table 4.26 ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Prior Instructional Technology Use Q51a.....	108
Table 4.27. ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Prior Instructional Technology Use Q51b.....	109
Table 4.28. ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Prior Instructional Technology Use Q51c .....	110
Table 4.29. ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Prior Instructional Technology Use Q59.....	111
Table 4.30. ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Prior Instructional Technology Use Q64.....	112
Table 4.31. Pillai’s Trace Test Results of MANOVA on Faculty Use of Technology in Teaching Based on Technology-Related Professional Development Needs .....	113
Table 4.32. ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Technology-Related Professional Development Needs Q45 .....	114

Table 4.33. ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Technology-Related Professional Development Needs Q49 .....	115
Table 4.34. ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Technology-Related Professional Development Needs Q50 .....	116
Table 4.35. Pillai's Trace Test Results of MANOVA on Faculty Use of Technology in Teaching Based on Their Attitudes Toward Teaching with Technology .....	117
Table 4.36. ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Attitudes Toward Teaching with Technology Q40.....	118
Table 4.37. Result Summary Table.....	122

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## **Dedication**

To my caring parents

Dr. Salwa and Eng. Abdulbaset,

Who taught me the essence of life;

To my loving wife, Alaa

Who shares my woes and triumphs;

To Leen and Mohammed,

Whose smiles shine my days;

With love and devotion

I dedicate this to thee.

# **Chapter 1 - Introduction**

## **Chapter Overview**

This chapter presents an overview of this study's research problem, beginning with a discussion of the growth of online learning and teaching at the university level in the United States and in Saudi Arabia, the theoretical framework of the present research, statement of the problem, purpose and significance of the study, the research questions and Null hypotheses. The limitations and delimitations of the study are then given, along with the definition of terms and abbreviations.

## **The Growth of Online Learning in the United States**

Resulting from the fast expansion of internet-based technologies, the maturation of the information technology field, and improving network speeds, online teaching within higher education is expanding ten times faster than other modes of learning (Allen & Seaman, 2013; Johnson, Brown, & Becker, 2013; Johnson, Adams & Cummins, 2012). According to a survey conducted by the Babson Survey Research Group and the College Board, responses from 2,820 colleges and universities (a response rate of 62.3%) indicated that over 6.7 million students took at least one online course during the fall 2011 term, an increase of 570,000 students over the previous year. The study also found the following:

- Thirty-two percent of higher education students have taken at least one course online (Figure1.1).

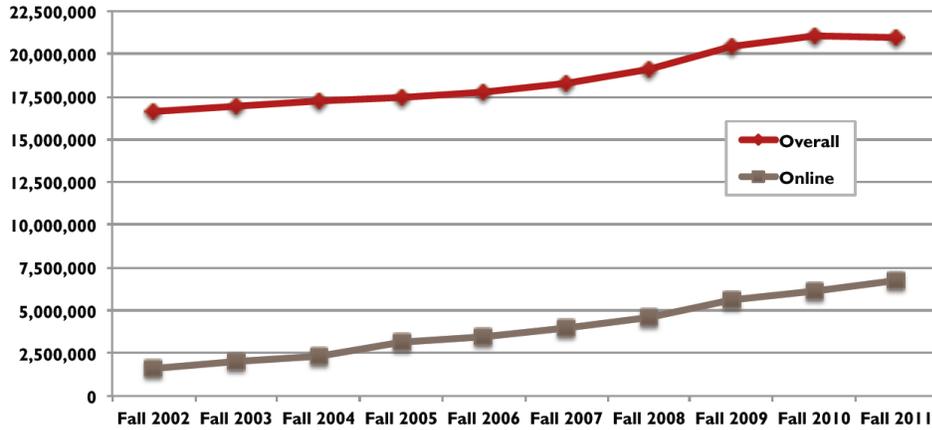


Figure 1.1. Total and Online Enrollment in Degree-granting Postsecondary Institutions: Fall 2002 - Fall 2011 (Allen & Seaman, 2013, p. 18)

- Only 2.6 percent of higher education institutions had a MOOC (Massive Open Online Course), another 9.4 percent report MOOCs were in the planning stages.
- Seventy-seven percent of academic leaders rated the learning outcomes in online education as the same or superior to those in face-to-face classes.
- The proportion of chief academic officers who believe their faculty accepted the value and legitimacy of online education has not increased – it now stands at only 30.2 percent.
- The proportion of chief academic leaders who said that online learning was critical to their long-term strategy is at a new high of 69.1 percent (Figure 1.2).

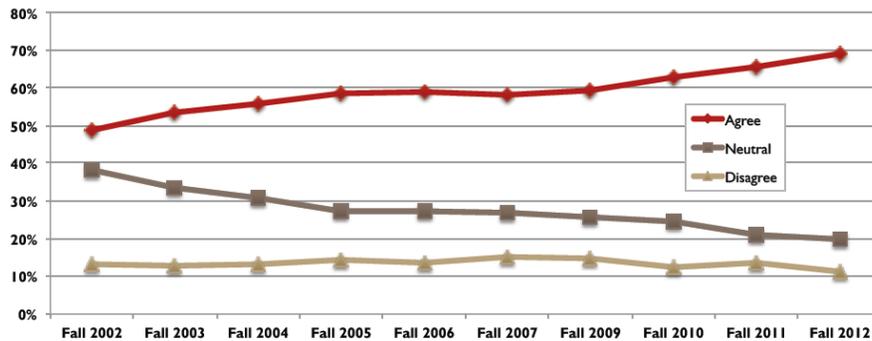


Figure 1.2. Online Education is Critical to the Long-term Strategy of my Institution: Fall 2002 - Fall 2011 (Allen & Seaman, 2013, p. 16)

- The perception of a majority of chief academic officers at all types of institutions was that lower retention rates for online courses remained a barrier to the growth of online instruction. (Allen & Seaman, 2013)

In the future, cutting-edge technological trends are expected to impact online teaching positively. As part of a collaborative effort between the New Media Consortium and the EDUCAUSE Learning Initiative, a report was released in 2013 that provided insights into emerging trends in technology use in higher education. According to the report, among the trends that were likely to have the most impact on online courses in the United States over the next five years are: mobile apps, tablet computing, massively open online courses (MOOCs), and game-based learning (Johnson, Brown, & Becker, 2013). All of these trends comprise a growing element of online teaching, both in the U.S. and in Saudi Arabia, that promise to help institutions to raise enrollments, lower the cost of academic delivery, and improve student outcomes.

### **Online Learning in Saudi Arabia**

Online learning is one of the fastest growing modes of education world-wide (Barbour, 2011; Keese, 2011; Sathler, 2012). According to the Communications and Information Technology Commission, Saudi Arabia is one of the fastest growing countries in the world, in terms of online teaching (Al-Darrab, 2010). Over 50% of the Kingdom's 27 million people are below the age of 25, and the demand for additional educational opportunities is high. At the same time, the growth rate of the Saudi educational institutes is low. For this reason, the Saudi government increased its spending in education in its 2012 budget by 13%, an increase that included support for the establishment of an electronic college in addition to 40 new colleges (Carey, 2011; *Ministry of Finance Report*, 2011).

There is a strong movement toward adopting online teaching in Saudi Arabia. According to Al-Khalifa (2010), the Saudi government's decision to embrace online teaching was driven by the desire to improve the knowledge and skills of its citizens, to close the technological gap between Saudi Arabia and advanced countries, and to keep pace with the increasing Saudi demand for higher education. Saudi Arabia has recognized the necessity of adopting online teaching as part of its educational and development strategies (Al-Khalifa, 2010). In 2006, the Ministry of Higher Education in Saudi Arabia established the National Center for E-learning and Distance Learning. According to National Center for E-learning and Distance Learning (2012a), the goals of this center are the following:

1. To spread e-learning applications and solutions in all higher education institutions.
2. To facilitate capacity building for higher education institutions by using e-learning applications and solutions.
3. To widen technical skills and e-learning knowledge in society.
4. To facilitate conducting and evaluating e-learning projects.
5. To support research and studies in the field of e-learning and distance learning.
6. To set standards for e-learning courseware production and publishing.
7. To provide consultancy in the field of e-learning and distance learning.
8. To build and distribute educational software applications that support educational process on both public and private sectors.
9. To encourage best practices in e-learning and distance learning in higher education institutions.
10. To hold seminars, workshops, and conferences that adds value to e-learning and distance learning.

11. To establish international bonds with the best leaders in e-learning field.

To this end, the first International conference on e-learning and distance education was held in 2009 in Riyadh, Saudi Arabia to analyze "methods adopted in the institutions of higher education...explore what has been in this area, and measure the degree of its effectiveness in supporting educational performance" (Ministry of Higher Education, 2012c, para.1). The second conference was held in February, 2011 in Riyadh, Saudi Arabia and focused on examining global experiences, and modern technologies in the field of e-learning and distance education. The third conference was held in February 2013, as Saudi Arabia moves quickly into the international online teaching arena.

National Center for E-learning and Distance Learning has established many projects in support of realizing these goals, including the creation of a Learning Management System (LMS) named JUSUR that enables Saudi universities to manage and share learning objects (National Center for E-learning and Distance Learning, 2012b). National Center for E-learning and Distance Learning has also established a digital library that contains approximately 90,000 digital books and resources from leading publishing houses (National Center for E-learning and Distance Learning, 2012b). The Center also provides training, educational, academic and advisory support to all beneficiaries of their services, both students and faculty. In addition, the Center organizes a yearly conference on e-learning and distance education, bringing together hundreds of international experts and decision makers (National Center for E-learning and Distance Learning, 2012b).

The attitude toward online education in Saudi Arabia is positive. Several studies concluded that most faculty and students in Saudi Arabia showed strong approval of the online teaching platform and a great appreciation for the potential experience and expertise obtainable

through this kind of education (Al Saif, 2007; Al Sarrani, 2010; Alnujaidi, 2008; Alaugab, 2007; Hussain, 2012; Alanazy, 2011; Hussein, 2011). However, Alaugab (2007) found barriers that might prevent the full embrace of online education in Saudi Arabia, including:

...the lack of internet access, lack of equipment and infrastructure, lack of technical support (server, network, power, etc.), lack of technology skills and computer literacy, lack of financial support for online instruction, lack of established pedagogy for online instruction, and lack of training for online instruction (Alaugab, 2007, p. 186).

In order to fully realize the potential of online teaching in Saudi Universities these barriers need to be removed. A better understanding of faculty concerns and professional development needs is necessary to achieving a higher level of online education and a greater proportion of the students who benefit from this mode of instruction.

### **Online Teaching at King Abdulaziz University**

According to Al-Khalifa (2010), King Abdulaziz University was the first government university to introduce online education programs in 2005. It also established the Deanship and Faculty of Distance Education. King Abdulaziz University continues to be the only government university offering online education programs, and as such, King Abdulaziz University is the sole candidate for study about online teaching in Saudi Arabia. The online education program at King Abdulaziz University is offered only by the Faculty of Economics and Management and by the College of Arts and Humanities (Abdullah, 2010). King Abdulaziz University's online education offerings are accredited by the European Foundation for Quality in e-learning, a leading European network in the field of quality in technology enhanced learning (King Abdulaziz University, 2011c). The duration of the distance learning program is four years, divided into two semesters per year, in addition to three summer semesters. King Abdulaziz

University is also the permanent headquarters of the Saudi Distance Learning Society (<http://ssdl.kau.edu.sa>).

The Faculty of Economics and Management was the first faculty established at King Abdulaziz University. It offers 10 B.A. programs and 12 academic and executive Master’s (King Abdulaziz University, 2012b). It consists of 7,332 students (without King Abdulaziz University Community College’s students or King Abdulaziz University Outside-Students Program’s students) and 337 faculty members (182 female and 155 male) (Ministry of Higher Education, 2012b). Two of the ten Faculty of Economics and Management departments offer undergraduate online programs: the Department of Public Administration and the Department of Business Administration. Among the 7,332 students, 114 students are enrolled in the online teaching programs of the Faculty (54 female and 60 male). In these two departments that offer online programs the total faculty population is 118, consisting of seven professors, 21 associate professors, 56 assistant professors, and 72 term lecturers (46 female and 60 male) (see Table 1.1 for the population and Table 1.2 for population by gender).

*Table 1.1.  
King Abdulaziz University Faculty of Economics and Management Online Teaching Program Population*

<b>Academic Rank</b>	<b>Professor</b>	<b>Associate Professor</b>	<b>Assistant Professor</b>	<b>Lecturer</b>
Public Administration	1	9	21	13
Business Administration	6	12	35	21
<i>Total by Academic Rank</i>	<i>7</i>	<i>21</i>	<i>56</i>	<i>34</i>
<b><i>Total 118</i></b>				

Source: “King Abdulaziz University Guide” (2011b).

*Table 1.2.  
King Abdulaziz University Faculty of Economics and Management Online Teaching Programs  
Population by Gender*

<b>Gender</b>	<b>Female</b>	<b>Male</b>
Public Administration	16 (36.4%)	28 (63.6%)
Business Administration	30 (40.5%)	44 (59.5%)
<i>Total</i>	<i>46 (39%)</i>	<i>72 (61%)</i>

Source: “King Abdulaziz University Guide” (2011b).

The College of Arts and Humanities was established in 1969 and offers nine B.A. programs, seven M.A. programs, and four Ph.D. programs (King Abdulaziz University, 2011b). It consists of 9,696 graduate and undergraduate students (without King Abdulaziz University Community College’s students or King Abdulaziz University Outside-Students Program’s students) (Ministry of Higher Education, 2012b) and 351 faculty members (186 female and 165 male) (King Abdulaziz University, 2011b) (see Table 1.3 for the population and Table 1.4 for population by gender). Three of the nine College of Arts and Humanities departments offer undergraduate online programs: the Department of Arabic Language, the Department of European Languages and Literature, and the Department of Psychology. The six departments not offering online teaching are: Department of History; Department of Geography; Department of Information Science; Department of Sociology and Social Work; Department of Mass Communication; and Department of Islamic Studies. In the six departments that do not offer online programs the total faculty population is 230 (118 female and 112 male), consisting of 18 professors, 58 associate professors, 87 assistant professors, and 67 term lecturers.

Table 1.3.  
King Abdulaziz College of Arts and Humanities Faculty

<b>Department</b>	<b>Professor</b>	<b>Associate Professor</b>	<b>Assistant Professor</b>	<b>Lecturer</b>
History	4	9	12	9
Geography	3	11	9	8
Information Science	4	10	10	7
Sociology and Social Work	3	11	15	13
Mass Communication	0	3	16	14
Islamic Studies	4	14	25	16
Arabic Language	7	7	24	6
European Languages and Literature	1	9	36	10
Psychology	4	2	13	2
<i>Total by Academic Rank</i>	<i>30</i>	<i>76</i>	<i>160</i>	<i>85</i>
<b><i>Total 351</i></b>				

Table 1.4.  
King Abdulaziz College of Arts and Humanities Faculty by Gender

<b>Gender</b>	<b>Female</b>	<b>Male</b>
History	19 (56%)	15 (44%)
Geography	13 (42%)	18 (58%)
Information Science	19 (61%)	12 (39%)
Sociology and Social Work	23 (55%)	19 (45%)
Mass Communication	15 (45%)	18 (55%)
Islamic Studies	29 (49%)	30 (51%)
Arabic Language	32 (72.7%)	12 (27.3%)
European Languages and Literature	27 (48.2%)	29 (51.8%)
Psychology	9 (42.9%)	12 (57.1%)
<i>Total</i>	<i>186 (53%)</i>	<i>165 (47%)</i>

Adding to the impetus of this research is the College of Arts and Humanities' mission to achieve "distinction in the fields of literature and humanities within the framework of an educational research environment that contributes to the development of society and the retention of its identity" (King Abdulaziz University, 2011d, para. 2). To achieve this mission, the college set eight goals, and one of these goals was "expanding distance education programs for various academic levels and stages" (King Abdulaziz University, 2011d, para.3). King Abdulaziz University's Deanship of Distance Education and Deanship of Post-Graduation Studies has the goal of "increasing the number of specialties in the distance learning system especially the

program that attract the large number of students” (King Abdulaziz University, 2011e, para.1). The College of Arts and Humanities programs attracts the largest number of students compared with the other colleges at King Abdulaziz University. In the academic year of 2010-2011, approximate 9,148 out of the 52,450 students (without King Abdulaziz University Community College’s students or King Abdulaziz University Outside-Students Program’s students) were enrolled in the College of Arts and Humanities undergraduate programs (Ministry of Higher Education, 2012b), and this was up from 5,374 students in 2009-2010. Among the 9,148 students, 1048 students are enrolled in the online teaching programs of the college (417 female and 631 male). This popularity created a demand for adopting additional educational methodologies within the College of Arts and Humanities. Professor Ali Al-Ghamdi, former Dean of the Humanities College, stated that reaching higher academic standards “can only be achieved by continuous and comprehensive development of educational structures and by adopting learning methodologies that pursue the achievement of quality education” (King Abdulaziz University, 2011f, para.10).

Few studies have focused on online teaching at King Abdulaziz University. Albalwi (2008) studied the intrinsic and extrinsic factors that motivated instructors to teach online. The purpose of Albalwi’s (2008) study was to determine whether significant differences existed between instructors of the College of Arts and Humanities and the College of Sciences at King Abdulaziz University concerning their perceived levels of expertise and use of e-learning technologies as part of their teaching. He sampled 227 faculty from these two colleges during the academic year of 2007-2008 (with a response rate of 55%). The majority of participants were female (55.9%). He used factor analysis, descriptive statistics, and inferential statistics to analyze the data. Albalwi (2008) found that barrier factors were influential. The most influential

barrier factors were extrinsic and the top three barrier factors were 1) lack of technological infrastructure (M= 3.20, SD= 1.125), 2) lack of students' access to resources (M= 3.16, SD= 1.210), and 3) lack of technical support in solving computer problems M= 3.10, SD= 1.122).

Figure 1.3 summarized Albalwi's (2008) barrier factors. Due to the fact that most of the barriers were extrinsic, Albalwi (2008) recommended that these problems be solved with environmental improvements, such as improvement of the technological infrastructure.

Factor of Barriers	N	Type of Factor	Mean	Std. Deviation
15- Lack of technological infrastructure.	227	Extrinsic	3.20	1.125
16- Lack of Student' access to resources.	227	Extrinsic	3.16	1.210
14- Lack of technical support in solving computer problems.	227	Extrinsic	3.10	1.122
11- Lack of funding for materials/expenses.	227	Extrinsic	3.07	1.113
8- Lack of training programs.	227	Extrinsic	3.02	1.054
17- Lack of resources about how to apply technology in teaching.	227	Extrinsic	2.93	1.210
7- Lack of students' technological knowledge.	227	Extrinsic	2.88	1.180
6- Lack of instructors' technological knowledge.	227	Intrinsic	2.82	1.285
4- Lack of support and encouragement from administrative.	227	Extrinsic	2.74	1.332
9- Lack of face-to-face interaction in e-learning courses.	227	Intrinsic	2.73	1.224
2-Lack of time to learn new technology	227	Extrinsic	2.68	1.154
1- Lack of interest.	227	Intrinsic	2.66	1.298
12- Lack of rewards/recognition for innovation in teaching	227	Extrinsic	2.54	1.311
13- Concern about course quality.	227	Intrinsic	2.26	1.516
10- Lack of credit toward promotion and tenure.	227	Intrinsic	2.19	1.422
18- Security concerns.	227	Intrinsic	2.17	1.405
5- Lack of support and encouragement from peers.	227	Extrinsic	1.84	1.421
3- Negative comments made by colleagues about e-learning technologies.	227	Extrinsic	1.60	1.455

Figure 1.3. Barrier Factors (Albalwi, 2008)

Al-Nuaim (2012) studied the use of virtual classrooms in online teaching in King Abdulaziz University. She investigated whether there were significant differences in the

performance of online and face-to-face students assigned to the same course and taught by the same instructor. She compared 10 courses, each delivered both online and on-campus face-to-face and conducted an independent-samples *t*-test to evaluate whether the online and face-to-face methods had a different effect on the performance of students. The sample size of this study was 606 students (response rate was not reported), 326 female and 180 male. The study found that among these 10 classes, significant (at the alpha = .05 level) differences were found in the students' performance in four of these classes. Three classes (PAD 101, PS 101, and IS 101) recorded face-to-face students' performance as better than that of the online students (sig .007, .001, and .025). Only one course (ISLS 401) showed online students' performance as better than that of the face-to-face students ( $M=3.11$ ,  $SD=1.00$ ,  $t=6.95$ ,  $p<.001$ ). For the other three courses, there were no significant differences in the performance of online and face-to-face students. Additionally, Al-Nauim (2012) distributed questionnaires among students and instructors after the final exam to solicit their feedback on features of the e-learning system, interaction methods, and students' overall experience. Results of this questionnaire revealed that technical problems were the biggest challenge. However, Al-Nauim (2012) stated that "the small sample size of the online classes may hinder attempts to generalize the results" (p. 219). Al-Nuaim (2012) recommended repeating this study with larger sample sizes on a yearly basis. The present study, therefore, builds on the contributions of others in introducing online teaching King Abdulaziz University, because the Concerns-Based Adoption Model identifies and provides ways to assess faculty concerns and needs regarding the implementation of an online teaching program.

### **Theoretical Framework - Concerns-Based Adoption Model**

The Concerns-Based Adoption Model was developed by Dr. Gene Hall et al. in 1973. It is used to measure the concerns of individuals as they progress through stages of adoption of an

innovation (Hall, Wallace, & Dossett, 1973). The authors observed educators involved in beginning innovative practices and identified the same concerns as those first described by Fuller (George, Hall, & Stiegelbauer, 2006). Expanding upon Fuller's work, Hall, George, and Rutherford (1979) offered a means of evaluating teacher concerns about innovation in education and called it the Concerns-Based Adoption Model. Hall and Hord (2010) continued to refine the model and later identified seven categories of concerns that appear while change is taking place - Awareness, Informational, Personal, Management, Consequence, Collaboration, and Refocusing.

### **The Concerns Based Adoption Model's Underlying Assumptions**

The model Hall and Hord (2010) developed is based on ten assumptions about educational change. From their point of view, these assumptions "are no longer debatable points, for they summarize predictable aspects of change" (p. 5). The ten assumptions are following:

#### Change Principle 1: *Learning is Change—It's as Simple and Complicated as That.*

Learning cannot occur without change. When educators adopt new and more effective teaching practices, the next step is to develop new understandings and acquire new skills. These new practices, in turn, enable students to reach higher levels of successful learning.

#### Change Principle 2: *Change is a Process, Not an Event.* Implementation of the

innovation requires continual revisions and modification. Change cannot be accomplished by a one-time announcement. It requires on-going support, resources, and time. According to Hall and George (1979), change is not static; rather, movement "is influenced not only by the passage of time but also by interventions and conditions that may not even be directly associated with the innovation" (p. 29). Hall and Hord (2010) stated that "most changes in education take three to five years to be implemented at a

high level. Failure to address key aspects of the change process can either add years to, or even prevent, successful implementation" (p. 8).

Change Principle 3: *The School is the Primary Unit for Change.* “The key organizational unit for making a change successful is the school” (Hall & Hord, 2010, p. 9).

Change Principle 4: *Organizations Adopt Change—Individuals Implement Change.* Successful change starts and ends at the individual level. If each and every member does not change, the organization will not change.

Change Principle 5: *Interventions Are the Key to the Success of the Change Process.*

Interventions are the “various actions and events that individuals could take to influence the change process” (Hall & Hord, 2010, p. 11). This principle suggests that change facilitators need to appreciate the value of small interventions.

Change Principle 6: *Appropriate Interventions Reduce Resistance to Change.* Resistance to change can result from the sense of loss having to stop something that is comfortable incurs, or it can result from serious questions about whether the change will really be an improvement (Hall & Hord, 2010). If the change process is facilitated well, then the stated concerns will be answered.

Change Principle 7: *Administrator Leadership Is Essential to Long-Term Change Success.* The involvement of administrators in the change process plays a central role in implementing and adopting the change.

Change Principle 8: *Facilitating Change Is a Team Effort.* It is important to involve all the stakeholders in the process of change.

Change Principle 9: *Mandates Can Work.* With a mandate the priority is clear, and there is an expectation that the innovation will be implemented (Hall & Hord, 2010). For a

successful mandate strategy, the change facilitator should initiate communication, training, on-site coaching, and time for implementation.

Change Principle 10: *The Context Influences the Process of Learning and Change.*

Physical features (such as the size and arrangement of the facility, and the resources, policies, and structure) and people factors (which include attitudes, beliefs, and values) play a central role in the process of change and learning (Hall & Hord, 2010, pp. 6 –18).

The evolving nature of concerns change as those undergoing change perceive new concerns that match higher-level and more focused concerns.

Being able to explain how new ideas and technologies are spread and adopted in a school or any organization through a model such as the Concerns-Based Adoption Model is an essential step toward better implementation of online teaching. Conducting a model and survey and utilizing statistical methods and procedures can be helpful. The outcome will deliver information for those who resist and who accept the change, help identify the reasons for not adopting the change, help indicate the adoption rate, help identify the barriers of implementing the technology, and help identify the participants' (the educators) expectation of the technology. In sum, it will “provide educators with a better understanding of their role in influencing the adoption of practice. Future programs could then be designed to accommodate these factors and yield higher rates of adoption” (Hubbard, 2007, para.4).

### **Statement of the Problem**

The necessity of adopting online education in Saudi Arabia is recognized by the government, as well as educators (Al-Khalifa, 2010; Alnujaidi, 2008; Alaugab, 2007; Al Sarrani, 2010; Hussein, 2011). The Ministry of Higher Education is working proactively to develop an effective online education system for all Saudi higher education institutions. In 2005, King

Abdulaziz University established the Deanship of Distance Education, becoming the first Saudi university to adopt online education (McGill, Currier, Duncan, & Douglas, 2009).

According to Ellsworth (2000), any change process should be guided by a model for supporting change. The Concerns Based Adoption Model identifies and provides ways to assess faculty concerns and needs regarding the implementation of an innovation - in this case an online teaching program. To ensure successful implementation and growth of online education in Saudi Arabia, the concerns and professional development needs of those teaching in this manner need to be understood and addressed. However, no accurate assessment exists of these concerns and professional development needs at King Abdulaziz University.

### **Purpose of the Study**

This study investigated concerns regarding the adoption of online teaching as expressed by faculty and instructors in six departments in the College of Arts and Humanities at King Abdulaziz University (History, Geography, Information Science, Sociology and Social Work, Mass Communication, and Islamic Studies). Additionally, it investigated King Abdulaziz University faculty professional development needs in adopting online teaching. One of the main goals of the Deanship of e-Learning and Distance Education at King Abdulaziz University is to participate in research that investigates student and instructor satisfaction with the Deanship's technology applications, services, and products (Deanship of e-Learning and Distance Education, 2011). The present study's examination of faculty concerns and professional development needs also addressed this goal.

## **Significance of the Study**

Conducting a baseline needs assessment for these departments will assist King Abdulaziz University administration, program planners, instructional designers, technology planners, and staff development providers in better serving King Abdulaziz University faculty in the integration of online teaching into their curriculum. This assessment of King Abdulaziz University faculty concerns and professional development needs is critical to the design and development of online teaching integration. These needs and concerns must be addressed so that there is an alignment between faculty concerns and university program outcomes. Therefore, needs and concerns faculty that perceive as being barriers to successful implementation must be addressed before successful change can be implemented. Additionally, King Abdulaziz University's successful adoption of online teaching would provide college-level Saudi students with a student-centered learning environment to better serve their learning needs.

The King Abdulaziz University Vice Dean of e-Learning and Distance Education, Dr. Lila Al Ghalib, has requested scientific research to evaluate their programs in order to guide future strategies for distance education at King Abdulaziz University (see Appendices F and J). This study adds to the literature in this area and, hopefully, will interest other scholars in learning more about factors impacting Saudi faculty preferences for online teaching.

This study responded to the national call of the National Center for E-learning and Distance Learning for research in the field of e-learning and distance learning, particularly instructor support (National Center for E-learning and Distance Learning, 2012a; National Center for E-learning and Distance Learning, 2012c). The National Center for E-learning and Distance Learning (2012c) stated that:

The instructor is our field partner and one of the main elements in the educational process. That is, [a teacher's adoption of] e-learning will affect all other elements.

Therefore, we put our most important partner in the top rank of concern and provide him with all forms of support to help achieve the goals. (National Center for E-learning and Distance Learning, 2012c, para.2)

Finally, this study responded to AAFAQ's (Future plan for Higher Education in Saudi Arabia, 2007) call for research on the major issues related to higher education in Saudi Arabia (AAFAQ, 2007).

### **Research Questions and Null Hypotheses**

This study investigated the concerns of the faculty of King Abdulaziz University's six departments of the College of Arts and Humanities regarding the adoption of online teaching and how these concerns related to Concerns Based Adoption Model and faculty professional development needs. There were three research questions:

Research Question #1: What is the relationship between full-time faculty personal characteristics (age, gender, country of graduation, and years of teaching experience) and their concerns in adopting online teaching?

*Null Hypotheses:*

*Ho 1.1.* There are no statistically significant differences between faculty age and faculty concerns in adopting online teaching.

*Ho 1.2.* There are no statistically significant differences between faculty gender and faculty concerns in adopting online teaching.

*Ho 1.3.* There are no statistically significant differences between faculty country of graduation and faculty concerns in adopting online teaching.

*Ho 1.4.* There are no statistically significant differences between faculty years of teaching experience and faculty concerns in adopting online teaching.

Research Question #2: What type of relationship exists between full-time faculty contextual characteristics (administrative support of technology, college/department, and academic rank) and their concerns in adopting online teaching?

*Ho 2.1.* There are no statistically significant differences between faculty administrative support of technology and faculty concerns in adopting online teaching.

*Ho 2.2.* There are no statistically significant differences between faculty college/department affiliation and faculty concerns in adopting online teaching.

*Ho 2.3.* There are no statistically significant differences between faculty academic rank and faculty concerns in adopting online teaching.

Research Question #3: To what extent do full-time faculty's technographic characteristics (prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology) influence faculty use of technology in teaching?

*Ho 3.1.* There are no statistically significant differences between faculty prior instructional technology use and faculty use of technology in teaching.

*Ho 3.2.* There are no statistically significant differences between faculty technology-related professional development and faculty use of technology in teaching.

*Ho 3.3.* There are no statistically significant differences between faculty attitudes toward teaching with technology and faculty use of technology in teaching.

### **Delimitation of the Study**

This study was limited to the professional development needs of the six departments of the College of Arts and Humanities faculty at King Abdulaziz University, Jeddah, Saudi Arabia,

which do not offer online teaching (History, Geography, Information Science, Sociology and Social Work, Mass Communication, and Islamic Studies). The College of Arts and Humanities has nine departments and offers online teaching programs through three of them. These three departments were not included in this study.

### **Definition of Terms**

For the purpose of this study, the following terms were used:

**Adoption**: is “the decision to make full use of an innovation as the best course of action available” (Rogers, 2003, p. 21).

**Barrier**: is defined as “any condition that makes it difficult to make progress or to achieve an objective” (“Barrier,” n.d., para.1).

**Change**: is defined by Hall (1979) as “an unfolding of experience and a gradual development of skill and sophistication in the use of an innovation; a developmental process” (pp. 203-204).

**Concerns**: are defined by Hall and Rutherford (1979) as:

[T]he composite representation of feelings, preoccupation, thought and consideration given to a particular issue or task. Depending on the personal make-up, knowledge and experience, each person perceives and mentally contends with a given issue differently; thus there are different kinds of concerns. (Hall & Rutherford, 1979, p. 5)

**Concerns-Based Adoption Model**: is a model developed by Dr. Gene Hall et al. in 1973. It is used to “measure concerns as individual progress through the adoption of an innovation” (Hall, Wallace, & Dossett, 1973, p. 7). Hall and Hord (2010) identified seven categories of concerns that appear while change is taking place (Awareness; Informational; Personal; Management; Consequence; Collaboration; and Refocusing).

**Contextual characteristics:** as defined in this study, include administrative support of technology, colleagues using technology, college, and academic rank.

**Faculty:** according to Al-Sarrani (2010):

In Saudi Arabian universities, faculty structure is different than in the United States.

Lecturers and Teaching Assistants have full-time positions and are accorded status as faculty should they obtain a doctorate. To move from Teaching Assistant or Lecturer to Assistant Faculty, one must obtain a Ph.D. In essence, teaching duties are quite similar, except that Teaching Assistant and Lecturer teach more classes and generally do not do research. (Al-Sarrani, 2010, p. 25)

**Innovation:** is defined by Hall (1979) as “any process or product that is new to a potential user” (p. 203)

**Innovation Configuration:** is a Concerns Based Adoption Model tool used to understand the change process (Hal & Hord, 2010).

**Online Learning:** is defined as an “essentially internet-based, asynchronous type of distance education” (Maeroff, 2003, p. 29). According to the *American Journal of Distance Education* (1987) online teaching is “institutionally based formal education where the learning group is separated and where interactive communications systems are used to connect instructors, learners, and resources” (as cited in Holden & Westfall, 2010, p. 2).

**Personal characteristics:** as defined in this study, these include age, gender, nationality, country of graduation, and years of teaching experience.

**Stages of Concern (SoC):** is the varying emotional intensity of feelings toward an innovation Fuller (George et al., 2006). The Concerns Based Adoption Model suggests that in Stages of Concern, people go through seven sequential predictable stages during the process of

adopting new technology (see Table 2.1). These stages are awareness, informational, personal, management, consequences, collaboration, and refocusing.

**Stages of Concern Questionnaire**, a 35-item questionnaire developed by Southwest Educational Development Laboratory.

**Technographic characteristics**: as defined in this study, include prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology.

## **Abbreviations**

EMES: E-Learning Management Electronic System, generally referred to as EMES.

LMS: Learning Management System, generally referred to as an LMS.

MOOC: Massive Open Online Course, generally referred to as a “MOOC”.

SoC: Stages of Concern, generally referred to as SoC.

## **Overview**

This dissertation is organized into five chapters. Chapter One is the introduction and discusses the purpose of the study, context of the problem, significance of the study, theoretical orientation, and research questions, and it also defines terminology. Chapter Two provides a review of the literature, which explores important research concerning the Concerns-Based Adoption Model, online teaching, and higher education in Saudi Arabia and at King AbdulAziz University. Chapter Three focuses on the research methodology, research questions, and hypotheses. Its primary focus is to determine the appropriateness of the dissertation’s measures, instruments, tools, and statistics. Chapters Four and Five present results, statistical analysis, and discussion of the findings.

## Chapter 2 - Review of the Literature

### Chapter Overview

This chapter provides an overview of the literature on the topic of online teaching in Saudi higher education, as well as a presentation of the theoretical framework that will be used in this study. The literature review is organized into four sections: (a) Levels of Concerns (Fuller, 1969) and (b) The Concerns-Based Adoption Model, which is based on Fuller's framework (Hall & Hord, 2010). This section includes the selected personal, contextual, and technographic variables; (c) online teaching and its use in higher education; and (d) education in Saudi Arabia, which includes higher education. This section ends with an overview of online teaching in King Abdulaziz University.

### Fuller's Levels of Concerns

The Concerns-Based Adoption Model was created by Frances Fuller (1969). Fuller, a counseling psychologist, and her colleagues in the Research and Development Center for Teacher Education at the University of Texas at Austin, instituted the term "concerns theory" after conducting in-depth studies in the late 1960s pertaining to teachers' attitudes and beliefs regarding education. According to Hall and Hord (2010), Fuller developed a model outlining how teachers' concerns move through four levels: *Unrelated*, *Self*, *Task*, and *Impact*.

*Unrelated concerns* are found most frequently among student teachers who have not had any direct contact with school age children or clinical experience in school settings. So, their concerns are focused on their college life rather than teaching. *Self-concerns* tend to be most prevalent when student teachers begin their student teaching or other more intense clinical work. They have concerns about teaching, but within an egocentric frame

of reference. These expressions indicate a concern about teaching, but with a focus on the teacher rather than on the act of teaching or the needs of the children. *Task concerns* show up quite soon after the start of student teaching, as the actual work of teaching becomes central. *Impact concerns* are the ultimate goal for student teachers, teachers, and professors. (Hall & Hord, 2010, p. 69)

Fuller's model established the framework for later work in the area of concerns (Ni & Guzdial, 2002).

### **Concerns-Based Adoption Model**

Hall, George, and Rutherford (1979) expanded upon Fuller's Levels of Concerns and offered a means of evaluating teacher concerns about innovation in education, calling it the Concerns-Based Adoption Model. Hall and Hord (2010) identify seven categories of concerns that appear while change is taking place (Awareness; Informational; Personal; Management; Consequence; Collaboration; and Refocusing). Hall (1979) defined change as "an unfolding of experience and a gradual development of skill and sophistication in the use of an innovation; a developmental process." He defined an innovation as "any process or product that is new to a potential user" (p. 203-204). The Concerns Based Adoption Model provides a systemic approach to discovering and overcoming barriers to the adoption of an innovation by helping users to become active, effective, and engaged in guiding change to a successful implementation (Sashkin & Egermeier, 1992). Additionally, Sashkin and Egermeier (1992) agreed that the Concerns Based Adoption Model is the most effective tool in recognizing individual users' needs to facilitate the adoption process.

## Concerns-Based Adoption Model Elements

The Concerns Based Adoption Model uses three “validated diagnostic diminutions”:  
Stages of Concern (SoC), Innovation Configuration, and Level of Use (Hall, 1978, p. 2). These elements (see Figure 2.1) work dynamically to allow the Change Agent/Facilitator (e.g., principals, district personnel, intermediate and higher personnel, and other educational leaders) to “assist others in ways relevant to their concerns so that they can become more effective and skilled in using new programs and procedures” (Hall & Hord, 1987, p. 11).

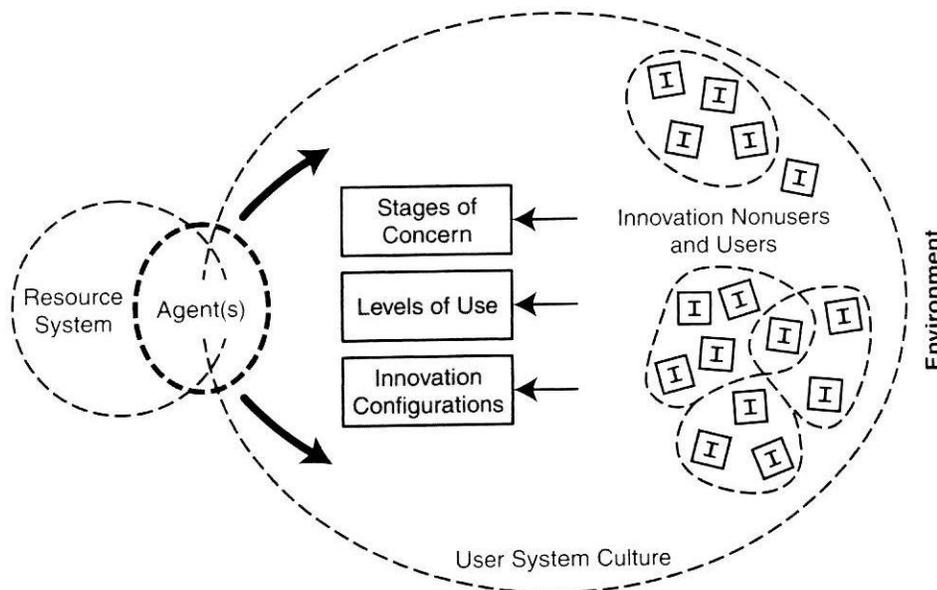


Figure 2.1. The Environment’s Three Diagnostic Dimensions (Hall & Hord, 2010, p. 72)

### *Stages of Concern*

Hall and Rutherford (1979) described the concept of “concerns” as:

[T]he composite representation of feelings, preoccupation, thought and consideration given to a particular issue or task. Depending on the personal make-up, knowledge and experience, each person perceives and mentally contends with a given issue differently; thus there are different kinds of concerns. (Hall & Rutherford, 1979, p. 5)

According to Hall and Hord (2010), the Stages of Concern is the most important element in the Concerns Based Adoption Model because it encompasses three tasks. First, SoC can be used to assess the feeling and perceptions of individuals, groups, and a whole staff. Second, SoC is useful for predicting what will be happening next and planning for future interventions. Third, SoC is an important tool for diagnosis, program evaluation, and research.

Concerns Based Adoption Model suggests that in Stages of Concern, people go through seven sequential and predictable stages during the process of adopting new technology (see Table 2.1). These stages are awareness, informational, personal, management, consequences, collaboration, and refocusing. These stages fall under three broad categories: *Self-concerns*, *Task concerns*, and *Impact concerns*. The stages under the *Self-concerns* category are more self-oriented wherein the teacher asks questions such as “How will the change affect me?” In the *Task concerns* the teacher is more concerned about the performance of the task, and usually asks questions such as, “How can I do this?” Finally, in the *Impact* category the teacher is more concerned about the impact of the change on others and may ask questions like “How is my use affecting students?”

The first stage of concerns is the Awareness stage, linked to Fuller’s *Unrelated Concerns*. In this stage individuals are not interested in the change; they are only informed about it. In the informational stage the individual needs more information about the new technology. In the personal stage the individuals are concerned about how the technology will affect them on a personal level. These stages are more self-oriented; individuals’ concerns are more about themselves in relation to the innovation.

Corresponding to Fuller’s *Task concerns*, Hall developed the Management stage. In the Management stage individuals are concerned about managing and scheduling their time, the

processes and tasks of using the innovation efficiently, and the best use of information and resources.

Corresponding to Fuller's *Impact concerns*, Hall developed three stages: Consequence, Collaboration, and Refocusing. In the Consequences stage the individual is concerned about how the technology may affect the program, as well as the student. In the Collaboration stage the individual is concerned about how to involve others in adopting the new technology. In the final stage, "Refactoring," the individual is concerned about finding ideas to more effectively implement the technology in order to achieve better efficiency or to achieve greater efficacy. These last three stages are more focused on "improving the impact of the innovation on clients/students" (Hall & Hord, 2010, p. 74).

The diagnostic Concerns Based Adoption Model instrument used to assess these Stages of Concern is called the Stages of Concern Questionnaire, a 35-item questionnaire developed by Southwest Educational Development Laboratory. The Stages of Concern Questionnaire has five questions for each stage of the seven stages of concern. The purpose of the Stages of Concern Questionnaire is to assess teacher concerns about new programs and practices and to determine what people are thinking about when using various programs or practices (O'Sullivan & Zielinski, 1988). Upon completion of the Stages of Concern Questionnaire, a profile can be generated that shows the intensity of the users' current concerns at each stage of the innovation implementation process. This profile then can be used as a guide during the implementation of the change. Failure to address user concerns as they are experiencing the change process "can lead to several kinds of potholes" (Hall & Hord, 2010, p. 89). The Stages of Concern Questionnaire uses a 0-7 Likert scale for each of the seven stages of concern. High numbers indicate high concern and vice versa.

*Table 2.1.*  
*Stages of Concern: Typical Expressions of Concern About the Innovation*

Stages of Concern			Expression of Concern
Impact	6	Refocusing	I have some ideas about something that would work even better.
	5	Collaboration	I am concerned about relating what I am doing to what other instructors are doing.
	4	Consequence	How is my use affecting students?
Task	3	Management	I seem to be spending all my time getting material ready.
Self	2	Personal	How will using it affect me?
	1	Informational	I would like to know more about it.
Unrelated	0	Unconcerned	I am not concerned about it.

Source: Hall, G. E., & Hord, S. M. (2010). *Implementing change: Patterns, principles, and potholes* (3rd ed.) (p. 72). Boston: Allyn and Bacon.

### ***Innovation Configuration***

The second diagnostic dimension of Concerns Based Adoption Model is Innovation Configuration. Innovation Configuration is a Concerns Based Adoption Model tool used to understand the change process (Hall & Hord, 2010). Innovation Configuration data (AKA IC Map) can be used to measure the progress of an implementation and to identify and address problems associated with the implementation of an innovation. This element, Innovation Configuration, helps to establish a test that is equivalent to a pilot /field test before implementing the innovation. This, in turn, will create a common understanding of the innovation, which will help to save time and energy and will guide the researcher before the actual implementation (Ellsworth, 2000, p. 152).

### ***“Levels of Use” of the Innovations***

The third diagnostic element of Concerns Based Adoption Model is the Levels of Use. Level of Use describes the behaviors of the users and the nonusers in regard to the innovation. It consists of eight levels of change, or behavioral profiles, users may experience when they are

implementing the change. Hall and Hord (2000) identified eight levels of use of a new innovation as shown in Table 2.2. These levels can be categorized into “Nonusers” and “Users”. The Non-users category consists of the first three levels: Non-Use, Orientation, and Preparation. The Users category consists of five distinct levels that characterize users: Mechanical, Routine, Refinement, Integration, and Renewal.

*Table 2.2.  
Levels of Use and Associated Behaviors*

Levels of Use		Behaviors Associated with Level of Use
Non-users	0 Non-Use	No interest shown in the innovation; no action taken
	1 Orientation	Begins to gather information about the innovation
	2 Preparation	Begins to plan ways to implement the innovation
Users	3 Mechanical	Concerned about mechanics of implementation
	4A Routine	Comfortable will innovation and implements it as taught
	4B Refinement	Begins to explore ways for continuous improvement
	5 Integration	Integrates innovation with other initiatives; does not view it as an add-on; collaborates with others
	6 Renewal	Explores new and different ways to implement innovation

Source: Hall, G. E., & Hord, S. M. (2010). *Implementing change: Patterns, principles, and potholes* (3rd ed.). Boston: Allyn and Bacon.

The following are guiding principles of levels of use outlined by Hall and Hord (2010):

1. With any innovation, each person exhibits some kind of behaviors and thus can be identified as being at a certain Level of Use.
2. The Decision Points that operationalized the level and the information related to categories contribute to the overall description of an individual’s Level of Use.
3. It is not appropriate to assume that a first-time user will be at Level III Mechanical Use. Nor should it be assumed that a person who has used the innovation several times will not be at Level of Use III.

4. A focused interview protocol has been established for efficiently collecting Level of Use information. A written format will not work to measure behavior. The only alternative to the Level of Use interview would be using ethnographic fieldwork using the Level of Use chart.
5. Informally gathered information about an individual's Level of Use can be used for facilitating implementation of change.
6. The Level of Use is presented in a logical sequence, but this has not been followed by everyone (Hall & Hord, 2010, p. 95).

### **Selected Personal Characteristics of Faculty Members**

George et al. (2006) argued that traditional demographic variables, such as gender, age, and years of teaching experience are not related to and not predictive of teacher concerns regarding innovation adoption or Stage of Concern profile. Hall et al. (1986) in prior studies with adults have said that there are “no outstanding relationships between demographic variables and concerns data. Concerns Based Adoption Model results indicate that variables, such as gender, have not had any bearing on peak stage concerns” (Hall, 1979, p. 23). However, most of the reviewed literature indicated that specific personal characteristics are potentially predictive and significantly related to teacher concern when it is about adopting technology in teaching (Hwu, 2011; Petherbridge, 2007; Rockwell et al., 1999; Sherry et al., 1997, 2000; Surry & Ensminger, 2003).

#### ***Age***

Age is a typical demographic variable found in cross-sectional studies. The Concerns-Based Adoption Model author found that age was not considered a predictive variable for innovation adoption in the U.S. (George et al., 2006; Hall et al., 1986). Later studies provided

mixed results regarding age as a predictive factor in the use of new technology, some finding a high correlation between age and technology adoption (Adams, 2002; Al-Saif, 2005; Petherbridge, 2007). Adams (2002) investigated the degree to which attendance at technology faculty development programs impacted use of technology, utilizing the Concerns Based Adoption Model and the Diffusion of Innovations theory and a non-experimental, cross-sectional survey design. He noted that academic task area, level of computer integration, concern about the innovation process, and perceived barriers to computer integration strongly correlated with age and an individual's concern (see Figure 2.2 for the details about the correlation co-efficient). Adams (2002) studied a group of full and part time faculty (n=231) at a post-secondary institution (39% response rate) and found that younger faculty with less teaching experience had higher levels of technology integration (see Figure 2.3).

	Stages of Computer Concern							
	0	1	2	3	4/S	4/O	5	6
Academic task area	0.0637	0.0175	0.0002	-0.0532	0.0046	0.0994	-0.0221	-0.0799
Gender	-0.1102	0.0204	0.0397	-0.1104	0.0318	-0.1162	-0.0284	-0.0893
Age	0.0336	-0.0288	0.077	-0.0281	-0.0267	0.0696	0.0145	0.0754
Service	0.1346	-0.0112	0.1175	0.0062	-0.0556	0.1142	-0.0386	0.0655
Integration	-0.1572	-0.0039	-0.1226	0.0749	0.1215	0.3182 **	0.1916 **	0.2056 **
Professional development	-0.1877 **	0.0813	-0.0542	0.0317	0.1708 **	0.2328 **	0.2252 **	0.1581 **

\*\* p < .05.

Figure 2.2. Correlation Coefficients for Stages of Concern and Demographic Variables (Adams, 2002)

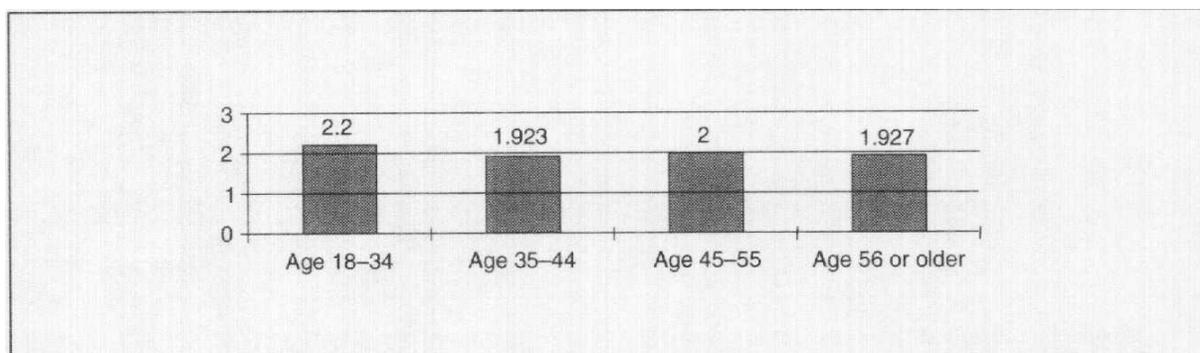


Figure 2.3. Computer Integration Mean Scores by Age (Adams, 2002)

Petherbridge (2007) studied the influence of selected variables on faculty members' concerns in the adoption of LMSs in a higher educational setting in the U.S., which utilized the Concerns Based Adoption Model as the theoretical framework in a non-experimental, cross-sectional survey design. She gave the Stages of Concern to 1,196 faculty and had a return rate of 29.5%. Petherbridge found that age was a predictive factor ( $p < .01$ ), which was attributed to the low concern score of the older faculty, a score that indicated less interest in knowing about using educational technologies. Some older faculty were using educational technologies, but expressed concerns in other areas, such as how student learning was taking place (Petherbridge, 2007).

Still, other investigations confirmed earlier research on age as a non-predictive factor in adopting new technology (Al-Sarrani, 2010; Atkins & Vasu, 2000; North Carolina State University, 2004). North Carolina State University's (2004) survey on faculty experiences with computer-based instructional and learning aids ( $n=1790$ , 55% response rate) concluded that there was no relationship between age and adopting educational technologies (North Carolina State University, 2004).

In Saudi Arabia, Al-Sarrani (2010) studied the adoption of blended learning by Science faculty in three departments (Biology, Chemistry and Physics) of Taibah University ( $n=148$ , 58.8% response rate). He had two research questions. To answer them, Al-Sarrani (2010) used a

mixed methods design and a non-experimental, cross-sectional survey design. He utilized the Concerns Based Adoption Model as the theoretical framework. Al-Sarrani (2010) found no statistically significant differences between Science faculty's age and their concerns in adopting BL. On the contrary, Al-Saif (2005) found that faculty age played a role in the use of web-based Instruction (WBI). He identified factors relating to organization, personal characteristics, curriculum, technology, and culture that motivated or inhibited the use of web-based instruction at the University of Qassim in Saudi Arabia (n=500, response rate of 42.6%). He found that faculty over 55 years old were less likely to be interested in internet use than younger faculty members.

### ***Gender***

George et al. (2006) and Hall et al. (1986) stated that gender was not significantly related to the stage of concern. Later research in the United States concluded that gender did not play a predictive role in technology adoption (Hwu, 2011; Petherbridge, 2007). Petherbridge (2007), who studied adoption of a Learning Management Systems (LMS) in a higher educational environment, found a lack of statistically significant gender differences in the stages of concerns scores in the United States. Similarly, Hwu (2011) found no significant difference between gender and faculty's concerns in adopting online teaching.

In Saudi Arabia, most of the universities are gender-segregated, thus gender factors differently there than it does in American universities. Al-Sarrani (2010) found that gender had a significant relationship with the stages of concerns (informational and collaboration) in Saudi Arabia. In Al-Sarrani's (2010) study, females expressed a higher degree of concern than males at stages one (informational) and five (collaboration) in adopting blended learning. Al-Sarrani (2010) explained:

Women university professors in Saudi Arabia could be more concerned about the need for professional development or for the inequity in the technical facilities in the women's and men's colleges. Most of the women that answered open-ended questions stated that they didn't have basic technology tools. For example, "How can we adopt blended learning without internet in the women's college?" (Al-Sarrani, 2010, p. 151)

Alshammari (2000) studied concerns that teachers experienced when implementing the Information Technology curriculum in all intermediate schools in Kuwait. He examined the relationships among teachers' reported Stages of Concern and other factors, such as gender and experience. He had a total response of 248 participants (133 females and 115 males), with a return rate of 79.4%. Alshammari (2000) examined gender difference in a Kuwaiti university, which is similar to the Saudi university structure, and found that gender had a significant relationship to the Stages of Concerns (management and refocusing stages) toward the implementation of the information technology curriculum ( $p < .01$  and  $p < .05$ ), just as did Al-Sarrani (2010). No other studies could be found that examined gender differences.

### ***Country of Graduation***

The studies related to technology adoption in Saudi Arabia, which has often used country of graduation as a predictive factor for innovation adoption (Al-Sarrani, 2010; Alharbi, 2002; Alnujaidi, 2008). These studies concluded that the country of graduation played a significant role in faculty's motivation in integrating online teaching. Alharbi (2002) and Alnujaidi (2008) found that the country of graduation correlated with the individual's level of concern regarding online teaching and learning. Alharbi (2002) investigated the barriers and attitudes of faculty and administrators toward implementation of online courses ( $n=237$ ) in Imam Muhammad Ben Saud University, Riyadh, Saudi Arabia. He utilized a quantitative data collection method and a

survey instrument with two open-ended questions to answer six research questions. Alharbi (2002) had a total response of 237 participants, a rate of 67.7%. He found that faculty members who graduated from a Western university show a higher level of concern and more positive attitudes compared with faculty members who graduated from Saudi Arabia or another Arab country ( $r=.205$ ,  $p<.01$ ). Alharbi (2002) explained that faculty members who graduated from a Western country were more familiar with technology. He also added that faculty members who graduated from a Western country were more likely to speak and understand English, which was important, since most of the technological tools were in English.

Alnujaidi (2008) investigated the factors that influence the adoption and integration of Web-Based Instruction (WBI) by English language faculty members in their regular teaching in Saudi Arabia. He employed a descriptive-correlational research design and utilized Rogers' (1995) Diffusion of Innovations Model (DOI) and the National Educational Technology Standards for Teachers (NETS•T) (ISTE, 2005) as a theoretical framework. He had a total response of 320 participants, with a return rate of 66%. Alnujaidi (2008) also found a significant relationship between innovation adoption and the country of graduation ( $r = .147$ ,  $p = .008$ ) at the  $\alpha = .05$  level. However, Al-Sarrani (2010) found that participants' concerns in adopting blended learning were not influenced by their country of graduation.

### ***Years of Teaching Experience***

Years of teaching experience has been found to be directly related to the age factor and has often been used as an indicator of an individual's attitudes and perceptions toward an innovation (Hwu, 2011; Al-Sarrani, 2010; Petherbridge, 2007; Adams, 2002). However, research findings on this factor has been mixed. Hwu (2010) found a significant relationship between years of teaching experience and stages of concern in adopting online teaching at the

University of Alaska Fairbanks. Similarly, Petherbridge (2007) found a significant relationship between years of post-secondary teaching experience and adopting the use of Learning Management Systems. She said that respondents who had been teaching longer had lower *unrelated* concerns score, “implying that those with more years of teaching experience may be interested in learning about LMSs or are already using them” (Petherbridge, 2007, p. 179). In contrast, Al-Sarrani (2010) did not find a significant relationship between years of teaching experience and adopting blended learning in Taibah University, Saudi Arabia.

### **Selected Contextual Characteristics of Faculty Members**

Contextual characteristics, such as administrative support of technology, colleagues using technology, college, and academic rank were found to be important factors in the reviewed literature related to innovation adoption (Giannoni & Tesone, 2003; Seaman, 2009; Adams, 2002, Hwu, 2011; Al-Sarrani, 2010; Petherbridge, 2007). Hall and Hord (1987) argued that context “is critical in understanding the change process” (as cited in Petherbridge, 2007, p. 64), as context will create challenges and opportunities based on the given situation. In this study, the contextual characteristics included administrative support of technology, colleagues using technology, college, and academic rank.

#### ***Administrative Support of Technology***

Most of the reviewed literature found that the lack of administrative support was a primary barrier to innovation implementation (Adams, 2002, Hwu, 2011; Petherbridge, 2007; Jones, Lindner, Murphy, & Dooley, 2002). Conversely, administrative support can be the base of successful implementation. Hall and Hord (2010) found that conditions, such as administrative support, associated with the implementation efforts were more likely to be predictive of concerns than traditional demographic variables (e.g., age and gender). Dusick

(1998) reviewed the research literature to identify social cognitive factors that influenced a faculty member's choice to use computers for teaching and learning. He found that “although the teacher may have control over some environmental factors (classroom setup, for example), a supportive administrative staff and support staff, are critical to encouraging the adoption of innovation” (p. 131).

### ***College/Department Association***

Biglan (1973) examined the nature of differences among academic disciplines. With a response rate 65%, Biglan (1973) divided the academic disciplines into three dimensions: 1) the “hard-soft” dimension (“hard” dimensions, such as chemistry, physics, astronomy, and biology and “soft” dimensions, such as English, psychology, social work); 2) the “pure-applied” dimension; and 3), the “life vs. non-life” dimension. Biglan's classification of these fields was determined by asking 168 faculty members from two different universities to sort 36 different academic disciplines according to the associations between them. Adams (2002) investigated the degree to which attendance at technology faculty development programs. He studied the relationship between age and the use of technology used these dimensions in his study of full and part time faculty (n = 231) at a post-secondary institution (39% response rate). He found that faculty in an academic discipline identified as “hard” had higher Levels of Concerns than those in “soft” academic disciplines. Similarly, Petherbridge (2007) noted that disciplinary differences were likely to have affected individual’s concerns during an adoption process.

### ***Academic Rank***

Academic rank was another factor usually used as an indicator of innovation adoption (Giannoni & Tesone, 2003; Seaman, 2009; Petherbridge, 2007; Hwu, 2011; Al-Sarrani, 2010). Petherbridge (2007) found that academic rank was predictive of faculty concerns. She asserted

that “respondents who are tenured or with the rank of instructor had lower self-personal concerns than other faculty, implying tenured faculty, or those hired with a teaching focus, are not as worried about the rewards structure for using technology” (Petherbridge, 2007, p. 269).

In Saudi Arabia, Al-Sarrani (2010) did not find statistically significant differences between Science faculty academic rank and their concerns in adopting blended learning. In contrast, Alharbi (2002), Al Saif (2005), and Alnujaidi (2008) found that academic rank had a statistically significant relationship with adopting innovation in Saudi universities.

### **Selected Technographic Characteristics of Faculty Members**

According to Mitra, Joshi, Kemper, Woods, and Gobble (2006), “technographics” is defined as “an expansion of demographics, that is, a set of personal computer-related demographics” (as cited in Hadjipavli, 2011, p. 65). Petherbridge (2007) stated that “technographics can include prior exposure to technology, categories of technology use, and a variety of factors that may address the technological characteristics of people” (p. 57). This study’s selected technographic characteristics are prior instructional technology used in teaching, technology-related professional development, and attitudes toward teaching with technology.

### ***Prior Instructional Technology Use***

Hall and Hord (2010) stated that Awareness, Informational, Personal, and Management (stages 0, 1, 2, 3) concerns decreased with increased technology use. The reviewed literature confirmed the notion that there is a positive relationship between attitudes toward innovation and the amount of experience in using technology (Petherbridge, 2007; Al-Sarrani, 2010). Al-Sarrani (2010) found that faculty members with prior experience using technology were more likely to integrate technology into teaching than other faculty members. Petherbridge (2007) found that faculty members with prior experience using any type of LMS had significantly lower

*unrelated* concerns scores. However, Hwu (2011) found that participants' use of technology in teaching was not influenced by their prior instructional technology use.

### ***Technology-Related Professional Development***

Professional development is a key factor of successful innovation implementation. Rogers (2000) said that there was a need for a major "shift from teaching to learning which requires adequate training in technology and learning styles" (p. 19). George, Hall, and Stiegelbauer (2006) argued that professional development was the most important among the demographic variables in determining concerns about an innovation adoption.

Atkins and Vasu (2000) found a significant correlation between the amount of technology training a teacher had and his or her stage of concern. Similarly, Adams (2002) found a significant, positive correlation between the amount of professional development courses taken and positive attitudes toward using the technology in teaching. Overbaugh and Lu (2008) said that this kind of training had been proven to be effective in developing a higher level of concern, which was the *impact* level (stages 4, 5, 6).

The same finding was echoed in Saudi Arabia. Alharbi (2002) studied faculty and administrators' attitudes toward the adoption of online teaching at Muhammad Ben Saud University. The findings of his study revealed that the lack of professional development was a major barrier to implementing online teaching. The study recommended developing a training program for faculty, as well as for the administrators, to be able to apply online teaching at the university.

### ***Attitudes Toward Teaching with Technology***

For the purposes of this study, the concept of attitudes toward using technology in teaching was defined as an instructor's beliefs and feelings about using online teaching. All of

the reviewed literature found that faculty with negative attitudes toward teaching with technology had higher *unrelated*, *self*, and *task* concerns scores (Hwu, 2011; Al-Sarrani, 2010; Petherbridge, 2007). Hwu (2011) found a statistically significant difference in the participants' use of online teaching in teaching and their attitudes toward teaching with technology.

Al-Sarrani (2010) found that in Saudi Arabia participants' use of technology in teaching was influenced by their attitudes towards technology integration in the science curriculum. The attitude of the faculty members of the Saudi universities toward adopting technology was positive, in general (Alharbi, 2002; Al Saif, 2007). Alharbi (2002) found that faculty members in Saudi Arabia had positive attitudes toward the implementation of online courses and that the major barriers preventing faculty from the adoption of online courses were increased workload, lack of technical and administrative support, and lack of incentives (Alharbi, 2002).

### **Concerns-Based Adoption Model Use Examples**

The Concerns Based Adoption Model has been used in several educational contexts with a varied range of innovations and in several different countries (Hwu, 2011; Al-Sarrani, 2010; Petherbridge, 2007; Overbaugh & Lu, 2008; Kelly & Staver, 2005; Schoepp, 2004; Adams, 2002; Rakes & Casey, 2002; van den Berg, Slegers, Geijsell, & Vandenberghe, 2000; Signer, Hall & Upton, 2000). An example of its use was discussed in Petherbridge's (2007) study, "A concerns-based approach to the adoption of Web-based learning management systems." Petherbridge (2007) studied the influence of selected variables on faculty members' concerns (from a land-grant Research I University in the southeastern United States) in the adoption of LMSs in a higher educational setting in the U.S. She conducted surveys based on the Concerns Based Adoption Model and the Stages of Concern Questionnaire to identify faculty members'

(n=1,196, return rate of 29.5%). She used non-experimental, cross-sectional survey design to address her research questions. Petherbridge (2007) found that there was:

... need for technology support staff to facilitate a climate conducive to using LMSs, to work with positive opinion leaders in an LMS implementation, to leverage both centralized and local technical resources in supporting faculty using LMSs, and to help provide evidence that the technology can support teaching and learning in various contexts. (Petherbridge, 2007, p. 232)

When a study addresses the concerns of individuals toward technology use, a better and more effective implementation of the technology can be conducted, as a result.

## **Online Learning**

Online learning, or “asynchronous learning”, is defined as internet-based, asynchronous type of distance education (Maeroff, 2003, p. 29). There are many terms used interchangeably with online teaching, such as e-learning, web-based training and distributed learning (Holden & Westfall, 2010). As defined by the *American Journal of Distance Education* (1987), distance education is “institutionally-based formal education where the learning group is separated and where interactive communications systems are used to connect instructors, learners, and resources” (as cited in Holden & Westfall, 2010, p. 2). Keegan (1996) defined distance education as a form of education characterized by:

- The quasi-permanent separation of teacher and learner throughout the length of the learning process (this distinguishes it from conventional face-to-face education);
- The influence of an educational organization both in the planning and preparation of learning materials and in the provision of student support services (this distinguishes it from private study and teach yourself programs);

- The use of technical media--print, audio, video or computer--to unite teacher and learner and carry the content of the course;
- The provision of two-way communication so that the student may benefit from or even initiate dialogue (this distinguishes it from other uses of technology in education); and
- The quasi-permanent absence of the learning group throughout the length of the learning process so that people are usually taught as individuals rather than in groups, with the possibility of occasional meetings, either face-to-face or by electronic means, for both didactic and socialization purposes. (Keegan, 1996, p. 50)

According to the U.S. Distance Learning Association, for an activity to be considered distance learning it should include, at a minimum, the following elements - first, the facilitation of learning via electronic media or through the internet or an intranet; second, internet-enabled learning; and third instructional content or learning experiences delivered or enabled by electronic technology (Holden & Westfall, 2010). Allen and Seaman (2013) stated that online courses are those in which at least 80 percent of the course content is delivered online (see Figure 2.3).

<i>Proportion of Content Delivered Online</i>	<i>Type of Course</i>	<i>Typical Description</i>
0%	Traditional	Course where no online technology used — content is delivered in writing or orally.
1 to 29%	Web Facilitated	Course that uses web-based technology to facilitate what is essentially a face-to-face course. May use a course management system (CMS) or web pages to post the syllabus and assignments.
30 to 79%	Blended/Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings.
80+%	Online	A course where most or all of the content is delivered online. Typically have no face-to-face meetings.

*Figure 2.4. Type of Courses Based on Proportion of Content Delivered Online (Allen & Seaman, 2013, p. 11)*

### **Advantages of Online Learning**

Recent research asserts that the difference between online teaching and face-to-face learning has become less significant (see Figure 2.4) (Allen & Seaman, 2013; Ary & Brune, 2011; Ayars, 2011; Rovai, Ponton, Wighting & Baker, 2007). Moreover, the reputation of the quality of online courses continues to increase, with 67% of academic professionals rating online courses as the same or superior to face-to-face instruction, up from 57% in 2003 (Lytle, 2011). Many students view online teaching as a way to overcome potential barriers of distance, time, cost, disability, or other responsibilities that they have. It provides flexible access, a quality learning experience, and cost-effectiveness.

### Proportion Reporting Learning Outcomes in Online Education as Inferior Compared to Face-to-face: 2003 - 2012

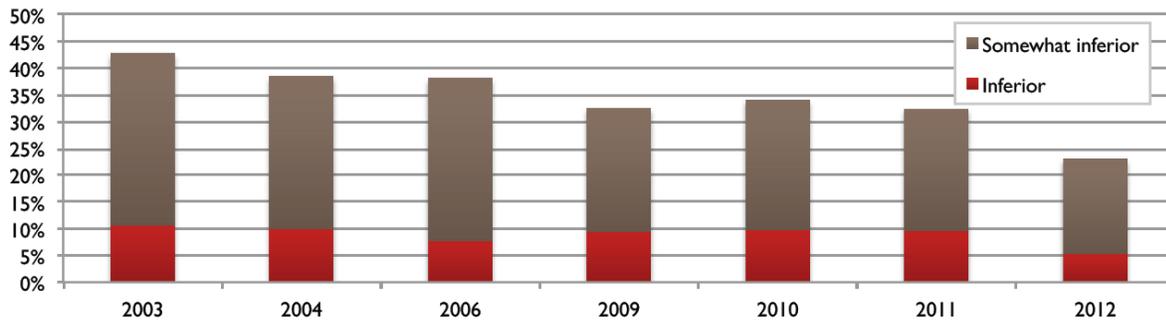


Figure 2.5. Proportion Reporting Learning Outcomes in Online Education as Inferior Compared to Face-to-face: 2003 - 2012 (Allen & Seaman, 2013, p. 18)

### Online Teaching in Higher Education

The stakeholders in the process of adopting online teaching in higher education are faculty, students, administrators and policymakers. Each of these groups has its own reasons for adopting or resisting online teaching. For instance, while students like the flexible access, quality learning experience, and cost-effectiveness of online teaching (see Figure 2.6 for the cost comparison) (Power, 2011), they are concerned about the student isolation (Ludwig-Hardman & Dunlap, 2003), delayed feedback, lack of immediacy (Schullo et al., 2005), and a lack of learner community support (Garrison & Archer, 2007, p. 64).

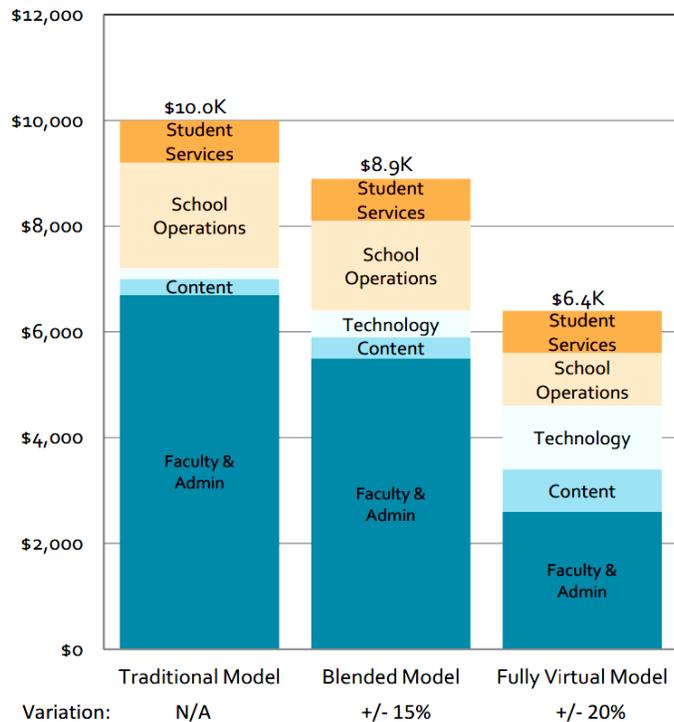


Figure 2.6. Cost Comparisons of Traditional, Blended, and Virtual online teaching Models (Battaglino, Haldeman & Laurans, 2012)

A barrier is defined as “any condition that makes it difficult to make progress or to achieve an objective” (“Barrier,” n.d., para.1). Knowing about the perceived barriers as they relate to technology integration is essential because this knowledge could provide guidance for ways to eliminate them. This knowledge will result in conducting better online programs. Examples of these barriers are the lack of quality software, poor administrative support, resistance to change, lack of vision as to how to integrate, and poor or limited access to technology (Beggs, 2000). These barriers remain legitimate concerns in many parts of the world. The Concerns Based Adoption Model provides the ability to categorize the user’s response to these barriers. This ability comes from the fact that the Concerns Based Adoption Model allows the researcher to learn what is currently happening with the innovation--the integration of technology into teaching and learning--and provides some insights as to why (Schoepp, 2005).

## Higher Education in Saudi Arabia

The Kingdom of Saudi Arabia was established in 1932 by King Abdulaziz Al Saud, who unified the country into a Kingdom. In 1954, the Ministry of Education was established. It includes all educational levels in Saudi Arabia (Ministry of Higher Education, 2010a). In 1975, a segment of the Ministry of Education became a separate entity and was renamed the Ministry of Higher Education, with the purpose of dealing exclusively with higher education. Among its responsibilities were:

- Proposing the establishment of higher educational institutions and authorizing them to offer special programs in accordance with the country's needs.
- Creating and administering universities and colleges in the Kingdom.
- Raising the level of communication and coordination between institutions of higher learning and coordinating with other governmental ministries and agencies in terms of their interests and needs in higher education.
- Representing the government abroad in all educational and cultural affairs, through various cultural and educational offices distributed over 32 countries. (MOHE, 2010a, para.16).

In the last five decades higher education in Saudi Arabia has seen tremendous growth. The Saudi government increased its spending in education in its 2012 budget by 13% which includes support for the establishment of an electronic college in addition to 40 new colleges (Carey, 2011; *Ministry of Finance Report*, 2011). The number of public universities has increased from seven in 1998 to twenty one, in addition to twenty four private universities in 2010. The higher education system has expanded to include:

- 21 Government universities

- 18 Primary teacher's colleges for men
- 80 Primary teacher's colleges for women
- 37 Colleges and institutes for health
- 12 Technical colleges
- 24 Private universities and colleges (MOHE, 2010a, para.19).

In addition to the public universities, the Saudi Ministry of Higher Education started a scholarship program for 70,000 students in 2005. The scholarships were used for study at baccalaureate, master's, and doctoral levels in different disciplines in the United States and other first-world countries (Ministry of Higher Education, 2010b). Beginning in 2010, this program expanded for five more years to include more than 120,000 students. According to a report published by the Ministry of Higher Education, the majority of the students of this program are studying in the United States, United Kingdom, Australia, and Canada (Ministry of Higher Education, 2010b). The report stated that Saudi Arabia was ranked by UNESCO as the fourth highest country with students placed around the world. It ranked after China (421,000 students), India (153,300 students), and South Korea (105,300 students). Moreover, Saudi Arabia was also ranked by UNESCO as the first in the world for the number of students studying abroad in proportion to the population, a total of .03% (Ministry of Higher Education, 2010b).

### **King Abdulaziz University and Online Teaching**

King Abdulaziz University was established in 1967 in Jeddah by a group of businessmen as a private university. At that time, its name was Jeddah National University (Kutbi, Fatani, Magrabi, Idris & Garba, n.d.). The first year was a foundational year and 97 students enrolled (67 men and 30 women). In 1973, it became a public institution by Ministerial decree (Kutbi et al., n.d.). It has grown from 97 students, with a single Faculty of Economics, to an enrollment of

more than 132,094 students, 6,148 faculty members with 24 Faculties, and more than 160 academic departments in 2012 to become the largest university in the Kingdom (Ministry of Higher Education, 2012a).

King Abdulaziz University uses a Learning Management System (LMS) named the E-Learning Management Electronic System (EMES) (Figure 2.7) to facilitate the process of interaction between the students and faculty (King Abdulaziz University, 2012). This system is an in-house developed LMS that is integrated with King Abdulaziz University's On Demand Registration System (ODUS). The EMES has the following functions: (a) providing online lectures; (b) allowing online discussion between faculty and students; (c) distributing assignments and receiving results and automated evaluation; (d) providing distance examinations; and (e) allowing students and faculty to access personal and the university calendar. King Abdulaziz University also uses a Mobile learning system that allows students to access university services, as well as their coursework using portable computers and devices, such as iPhones and iPods. Currently, mobile learning at King Abdulaziz University is considered a delivery strategy, though how it is used to facilitate learning has yet to be realized. The students only use mobile devices to access their courses through EMES.

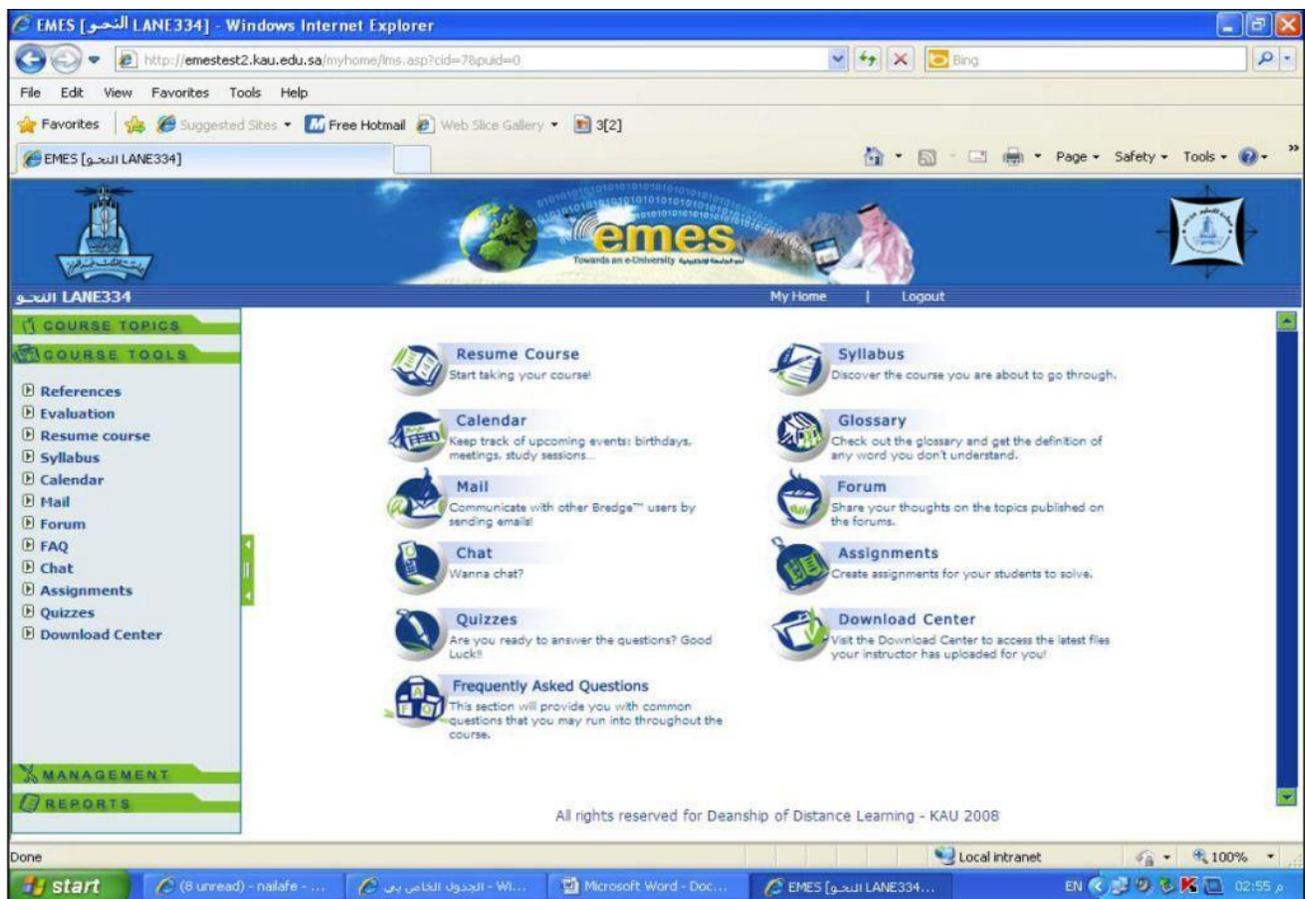


Figure 2.7. EMES Main Page (Al-Nuaim, 2012)

Another service provided by the deanship is a Virtual Classroom system (CENTRA) that allows instructors and students to participate in real-time lessons and discussions (King Abdulaziz University, 2012). The CENTRA system provides lesson overviews, assessment tasks, links to web resources, and downloadable files and tutorials. It also allows for collaboration on spreadsheets and other documents and it lets instructors conduct quick surveys (see Figure 2.8). King Abdulaziz University offer about 180 undergraduate and postgraduate courses through CENTRA (King Abdulaziz University, 2011c). The university also contains a digital library of 16,000 e-books. One of the future services of the Deanship of Distance Education at King Abdulaziz University is a virtual campus in “Second Life,” featuring multiple learning and collaboration opportunities (King Abdulaziz University, 2011).

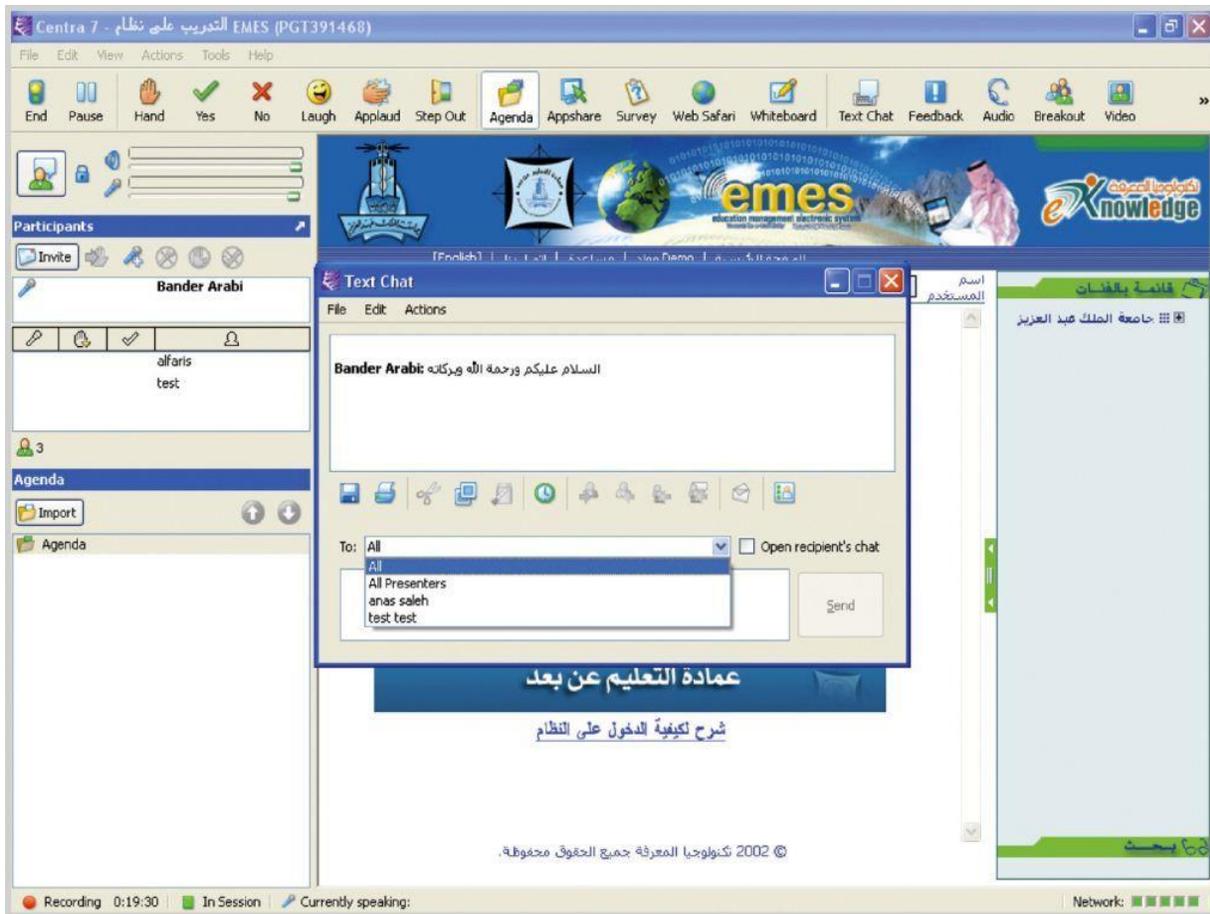


Figure 2.8. CENTRA interface (Al-Nuaim, 2012)

In conclusion, King Abdulaziz University's approach to online teaching involves creating courses on a learning management system (EMES), with virtual classes (CENTRA) for every corresponding face-to-face lecture to facilitate the online interaction between student and instructor. Additionally, King Abdulaziz University makes class information accessible through mobile devices. All of these systems are managed by the Deanship of Distance Learning, who is responsible for developing a sound pedagogy for its programs through adopting the latest technologies in teaching.

## Chapter Summary

Explaining how new ideas and technologies are introduced and adopted in a school or any organization through the Concerns Based Adoption Model is an essential step toward better implementation of new technology. Developing a model and conducting a survey to test the model utilizing statistical methods and procedures can be beneficial. The outcomes provided information for those who both resisted and accepted changes (new technology), helped to identify reasons for not adopting the change, helped indicate the adoption rate, helped identify the barriers of implementing the technology, and helped identify the participants' (the educators) expectation of the technology. Finally, it provided educators with “a better understanding of their role in influencing the adoption of practice. Future programs could then be designed to accommodate these factors and yield higher rates of adoption” (Hubbard, 2007, para.4).

Online teaching is one of the instructional innovations that can help provide personalized and student-centered instruction. In this chapter the advantages and outcomes of online teaching were discussed, in addition to its use in the higher education. The last section focused on higher education and online teaching in Saudi Arabia, including background information about the Saudi Arabia educational system and the movement toward online education in Saudi Arabia. This section also provided information about online teaching in King Abdulaziz University, the first Saudi public university to introduce online education programs (Al-Khalifa, 2010).

## Chapter 3 - Methodology

### Chapter Overview

This chapter reports all aspects of the research methodology used in this study. It is organized into the following sections, research questions, research design, the research setting, statement about the protection of human subjects, data collection, data analysis, reliability and validity, quantitative measures, trustworthiness of the research, and ethical considerations.

### Research Questions

This study investigated the concerns of the six departments in the College of Arts and Humanities faculty at King Abdulaziz University toward adopting online teaching based on the seven Stages of Concern (SoC) developmental continuum and how these concerns relate to faculty professional development needs. Specifically, the study addressed the following research questions:

Research Question #1: What is the relationship between full-time faculty personal characteristics (age, gender, country of graduation, and years of teaching experience) and their concerns in adopting online teaching?

*Null Hypotheses:*

*Ho 1.1.* There are no statistically significant differences between faculty age and faculty concerns in adopting online teaching.

*Ho 1.2.* There are no statistically significant differences between faculty gender and faculty concerns in adopting online teaching.

*Ho 1.3.* There are no statistically significant differences between faculty country of graduation and faculty concerns in adopting online teaching.

*Ho 1.4.* There are no statistically significant differences between faculty years of teaching experience and faculty concerns in adopting online teaching.

Research Question #2: What type of relationship exists between full-time faculty contextual characteristics (administrative support of technology, college/department, and academic rank) and their concerns in adopting online teaching?

*Ho 2.1.* There are no statistically significant differences between faculty administrative support of technology and faculty concerns in adopting online teaching.

*Ho 2.2.* There are no statistically significant differences between faculty college/department affiliation and faculty concerns in adopting online teaching.

*Ho 2.3.* There are no statistically significant differences between faculty academic rank and faculty concerns in adopting online teaching.

Research Question #3: To what extent do full-time faculty's technographic characteristics (prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology) influence faculty use of technology in teaching?

*Ho 3.1.* There are no statistically significant differences between faculty prior instructional technology use and faculty use of technology in teaching.

*Ho 3.2.* There are no statistically significant differences between faculty technology-related professional development and faculty use of technology in teaching.

*Ho 3.3.* There are no statistically significant differences between faculty attitudes toward teaching with technology and faculty use of technology in teaching.

## **Research Design**

According to Creswell (2012) research designs are “the specific procedures involved in the research process: data collection, data analysis, and report writing” (p. 20). To address the

aims of this study, quantitative data collection and analyses were used. This study collected quantitative data through closed-ended survey questions. To analyze the quantitative data, descriptive statistics (means, medians, modes, standard deviations, and variances) were used. A series of one-way Multivariate Analysis of Variance (MANOVA) were used to find values of significance. Pillai's Trace statistic was used to determine statistical significance at the .05 level. While, in most research Wilk's lambda is reported, in some cases, especially when the assumption of homogeneity of variance-covariance matrices and equal cell sizes are violated, Pillai's Trace is found to be more robust (Field, 2009; Tabachnick & Fidell, 2007). When MANOVA revealed statistically significant differences, then Analysis of Variance (ANOVA) tests were conducted to identify values of significance. Additionally, a series of Scheffe post hoc tests were conducted to determine where differences between groups exist. Scheffe gives the maximum protection against making a Type One error (rejection of a true null hypothesis) (Tabachnick & Fidell, 2007).

### **Research Setting**

This study was conducted at King Abdulaziz University in Jeddah, Saudi Arabia. King Abdulaziz University was established in 1967 by a group of businessmen as a private university (Kutbi, Fatani, Magrabi, Idris & Garba, n.d.). In 1973, it became a public institution by Ministerial decree (Kutbi et al., n.d.). According to the Saudi Ministry of Higher Education (2012a), King Abdulaziz University became the largest university in the Kingdom, with an enrollment of more than 132,094 students, 6,148 faculty members with 24 Faculties, and more than 160 academic departments in 2012.

There are many courses offered online at King Abdulaziz University; however, only two departments offer complete online programs (Faculty of Economics and Management, and the

College of Arts and Humanities) (Abdullah, 2010). King Abdulaziz University offers online B.A. degrees through these two departments and is planning to offer an M.A. degree of Counseling and Guidance through the Deanship of e-Learning and Distance Education. Online teaching at King Abdulaziz University is managed by the Deanship and Faculty of Distance Education, which was established in 2005 (Al-Khalifa, 2010). King Abdulaziz University uses a Learning Management System (LMS) named E-Learning Management Electronic System (EMES), a mobile learning system (M-Learning), a virtual classroom system named CENTRA, an electronic exam system, and a data collection system DDL-Data Collection System that allows web-based surveys and reporting tools for academic research and for collecting feedback (King Abdulaziz University, 2012).

### **Selecting the Population**

The population of this study included male and female professors, associate professors, assistant professors, and lecturers of King Abdulaziz University in Saudi Arabia from six departments selected in the College of Arts and Humanities. In Saudi Arabia, lecturers have full-time positions and are accorded status as faculty upon doctoral completion (Al-Sarrani, 2010). There are separate men's and women's colleges, so each one of the targeted departments is divided by gender. Within the College of Arts and Humanities, three departments provide undergraduate online programs: the Department of Arabic Language; the Department of European Languages and Literature; and the Department of Psychology. The researcher selected participants from among the other six departments in the College of Arts and Humanities that do not offer online programs: Department of History; Department of Geography; Department of Information Science; Department of Sociology and Social Work; Department of Mass Communication; and Department of Islamic Studies. At the time of this study, the total faculty

population was 230, consisting of 18 professors, 58 associate professors, 87 assistant professors, and 67 term lecturers (see Table 3.1 for the population). The population consisted of 51% female faculty and 49% male faculty members (see Table 3.2 for population by gender).

*Table 3.1.  
Population by Rank of the Six Departments in the College of Arts and Humanities Not Offering Online Programs*

<b>Department</b>	<b>Professor</b>	<b>Associate Professor</b>	<b>Assistant Professor</b>	<b>Lecturer</b>	<b>Department Population</b>
History	4	9	12	9	34
Geography	3	11	9	8	31
Information Science	4	10	10	7	31
Sociology and Social Work	3	11	15	13	42
Mass Communication	0	3	16	14	33
Islamic Studies	4	14	25	16	59
<b>Total by Academic Rank</b>	<b>18</b>	<b>58</b>	<b>87</b>	<b>67</b>	<b>230</b>
<i>Total Population 230</i>					

*Table 3.2.  
Population by Gender of the Six Departments in the College of Arts and Humanities That Do Not Offer Online Programs*

<b>Gender</b>	<b>Female</b>	<b>Male</b>
History	19 (56%)	15 (44%)
Geography	13 (42%)	18 (58%)
Information Science	19 (61%)	12 (39%)
Sociology and Social Work	23 (55%)	19 (45%)
Mass Communication	15 (45%)	18 (55%)
Islamic Studies	29 (49%)	30 (51%)
<b>Total</b>	<b>118 (51%)</b>	<b>112 (49%)</b>

### **Protection of Human Subjects**

In accordance with the guidelines of the Kansas State University's Committee for Research Involving Human Subjects (IRB), an Application for Approval Form was submitted prior to the study. Participants were given a consent form (see Appendix B) with the information needed to make an informed decision on whether or not to participate in the research study

(Citro, Ilgen, & Marrett, 2003). Participants were informed that their identities and survey responses would be kept confidential by the researcher. Participants were also informed that the results of the study would be available to them upon request.

### **Data Collection Methods**

Data was collected through closed-ended survey questions. According to Creswell and Clark (2011), the basic idea of collecting data is “to gather information to address the questions being asked” (p. 171). For the purpose of practicality, data collection was conducted through a cross-sectional paper-and-pencil mail survey, which included an optional alternative link to an electronic version of the survey for the convenience of participants who had technology available to do so. The survey was distributed on February 24, 2013. The link to the electronic version of the survey was also e-mailed to the participants on this day. Participants were given three weeks to respond and the Dean of Scientific Research sent follow-up letters to department heads and faculty at the end of the first and second weeks. Additionally, the researcher sent three personal follow-up e-mails to each of the participants by his/her name and title. These personal emails included the link to the electronic version of the survey in addition to the reminder. The surveys were collected, unopened, and then forwarded to the researcher in the United States. The researcher received the surveys on March 12, 2013.

### ***Survey Preparation***

Data was collected using a revised survey compiled from three surveys. The first part of the survey on technology adoption levels by faculty assessed faculty concerns with using online teaching tools and technology innovation. This part was revised from *Measuring Implementation in Schools: The Stages of Concern Questionnaire for Innovation* (George, Hall

& Stiegelbauer, 2006) survey from the Southwest Educational Development Laboratory instrument in Arabic. The second part of the survey was revised from Petherbridge's (2007) work on professional development needs. The third section of the survey was revised from Yidana's (2007) work on faculty perceptions and attitudes toward technology use in teaching. The researcher signed an agreement to license the survey from Southwest Educational Development Laboratory for the Stage of Concerns Questionnaire (see Appendix C). Written permissions from both Petherbridge and Yidana to use parts of their surveys were also obtained (see Appendices H and I). The instrument in this study contained 72 questions divided among five sections: (1) Stages of concern; (2) Administrative support for teaching online classes; (3) Attitudes towards teaching online; (4) Professional development needs and prior instructional technology use; and (5) Demographic information. The survey included the following sections:

- Section I: The Stages of Concern (questions 1 – 35) contains the Stages of Concern Questionnaire. Presently, the copyright for the Stages of Concern Questionnaire (1-35) is maintained by the Southwest Educational Development Laboratory.

Permission was granted from the Southwest Educational Development Laboratory to reprint and distribute the questionnaire (See Appendix C for Southwest Educational Development Laboratory License Agreement). The aim of this section was to attempt to get a whole picture of faculty concerns about adopting online teaching.

- Section II: The second section (question 37) measured administrative support for teaching online classes, which was revised from Petherbridge's study (2007) (See Appendix G for Petherbridge's permission). This section determined perceived administrative support of King Abdulaziz University faculty who teach online classes.

- Section III: The third section (questions 38-44) of the survey measured King Abdulaziz University faculty attitudes towards teaching online classes. This section was revised from Yidana's study (2007) (See Appendix H for Yidana's permission).
- Section IV: The fourth section of the survey (questions 45-66) determined the perceived professional development needs of King Abdulaziz University faculty in adopting online teaching in their teaching and professional development needs and faculty use of instructional technology. Questions 48-59 were revised from Yidana (2007) (Appendix H), while the rest of questions (60-64) were revised from Petherbridge (2007) (Appendix G).
- Section V: The demographic information section (questions 67-72) was developed by the researcher to include gender, age, country of graduation, college/department, years of teaching experience, and academic rank to identify demographic characteristics of the participants.

### *Stages of Concern Questionnaire*

The diagnostic Concerns Based Adoption Model used to assess the Stages of Concern is called the Stages of Concern Questionnaire, a 35-item questionnaire developed by Southwest Educational Development Laboratory. The Stages of Concern Questionnaire contains five questions for each stage of the seven stages of concern. The purpose of the Stages of Concern Questionnaire is to assess teacher concerns about new programs and practices and to determine what people are thinking about when using various programs or practices (O'Sullivan & Zielinski, 1988). After the Stages of Concern Questionnaire completed, a profile was generated that shows the intensity of the users' current concerns at each stage of the innovation implementation process. This profile then can be used as a guide during the implementation of

the change. Failure to address users' concerns as they are experiencing the change process "can lead to several kinds of potholes" (Hall & Hord, 2010, p. 89). The Stages of Concern Questionnaire used a 0-7 Likert scale for each of the seven stages of concern. High numbers indicate high concern and vice versa. The accuracy of the Stages of Concern Questionnaire has been assured through extensive research on its validity and reliability (George, Hall, & Stiegelbauer, 2006).

### ***External Validity***

External validity is "the extent to which the investigator can conclude that the results apply to a larger population, which is usually of highest concern in survey" (Creswell, 2011, p. 211). In the context of this research, as mentioned in the limitations of the study, the researcher's main focus was to investigate the concerns and the professional development needs of a clearly defined population (College of Arts and Humanities faculty at King Abdulaziz University).

### ***Internal Validity***

According to Creswell (2011), internal validity is "the extent to which the investigator can conclude that there is a cause and effect relationship among variables" (p. 211). To ensure a higher internal validity, the creators of the Stages of Concern Questionnaire computed data of a large sample (n=830) of teachers using Cronbach's alpha procedure (George et al., 2006). Additionally, a sub-sample (n=132) participated in a test-retest of Stages of Concern Questionnaire over a two-week period. Alpha coefficients ranged from .64 to .83, and the test-retest correlations ranged from .65 to .84, indicating stability and internal consistency for each of the seven stages (Hall, George, & Rutherford, 1979).

## **Reliability**

The reliability of the Stages of Concern Questionnaire is also high. According to George et al. (2006), after using Cronbach's alpha to find the coefficient of each stage, the Stages of Concern Questionnaire creators found the following alphas for the coefficients of reliability for each of the seven stages: Stage 0 = .64; Stage one = .78; Stage two = .83; Stage three = .75; Stage four = .76; Stage five = .82; and Stage six = .71. These coefficients ranged between .64 and .86, and this indicates that the Stages of Concern Questionnaire is a highly reliable instrument. In the social science literature, an alpha of .7 or greater is considered acceptable, while alphas below .6 are considered unacceptable (Neill, 2004). Many later studies (after Hall et al., 1979), both in the U.S. and outside, which used the Stages of Concern Questionnaire reported a high coefficient of internal reliability (see a summary of the reliability coefficients of these studies in Figure 3.1).

Authors	Sample Size	Stages of Concern						
		0	1	2	3	4	5	6
Hall, George & Rutherford, 1979	830	.64	.78	.83	.75	.76	.82	.71
Van den Berg & Vandenberghe, 1981	1585	.77	.79	.86	.80	.84	.80	.76/ .73*
Kolb, 1983	718	.75	.87	.72	.84	.79	.81	.82
Barucky, 1984	614	.60	.74	.81	.79	.81	.79	.72
Jordan-Marsh, 1985	214	.50	.78	.77	.82	.77	.81	.65
Martin, 1989	388	.78	.78	.73	.65	.71/ .78*	.83	.76
Hall et al., 1991	750	.63	.86	.65	.73	.74	.79	.81

*\*In these studies, the authors proposed two subscales in place of the original SoC scale.*

**Figure 3.1.** Coefficients of Internal Reliability for Each Stage of SoCQ (George et al., 2006).

### *Survey Administration*

The researcher contacted the Dean of Scientific Research at King Abdulaziz University and asked permission to do the study. A letter was then sent to the research administrator, with a copy of the survey, asking him to forward the letter and survey to the dean of the Arts and Humanities College. The dean sent the survey to each of the six department heads (History, Geography, Information Science, Sociology and Social Work, Mass Communication, and Islamic Studies). In the letter to the administrator, as well as to the participants, the researcher mentioned the support letters from the Vice Dean of Deanship of e-Learning and Distance Education at King Abdulaziz University (Appendix I and F), the Vice President for Development, and the Educational Technology administrator for the Faculty of Education (Appendix F). A pencil-and-paper survey was then distributed among the faculty members. Additionally, an electronic version was available for the convenience of the participant.

Participants were given three weeks to respond. Department heads were contacted by the researcher once a week to remind their faculty to send back the surveys. The Dean of Scientific Research sent follow-up letters to department heads and faculty at the end of the first and at the end of the second week. The completed surveys were sent to the researcher's home in Saudi Arabia in self-addressed, stamped envelopes. The surveys were collected, unopened, and then forwarded to the researcher in the United States. The survey included a statement confirming the anonymity of the participants, as well as the confidentiality of their answers, which is important. The researcher also informed participants that the results of this study would be available at their request from the researcher and a copy of the final dissertation would be available through K-REX, Kansas State University's electronic thesis and dissertation database.

## **Data Analysis**

### ***Quantitative Measures***

The data collected from the closed-ended questions were analyzed using descriptive statistics (means, medians, modes, standard deviations, and variances). A series of one-way Multivariate Analysis of Variance (MANOVA) were used to find values of significance. If MANOVA reveals statistically significant differences, then Analysis of Variance (ANOVA) tests were conducted to identify values of significance. Additionally, a series of Scheffe post hoc tests were conducted to determine where differences between groups exist. Tests for Strength of Association were also conducted.

### ***Independent Variables***

An independent variable is “an attribute or characteristic that influences or affects an outcome or dependent variable” (Creswell, 2012, p. 116). The independent variables in this study were:

- Demographic variables (age, gender, country of graduation, and years of teaching experience).
- Contextual variables (administrative support of technology, department, and academic rank).
- Technographic variables (prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology).

### ***Dependent Variables***

A dependent variable is “an attribute or characteristic that is dependent on or influenced by the independent variable” (Creswell, 2012, p. 115). The dependent variables in this study were:

- Stages of concern.
- Faculty use of instructional technology.

A summary of the independent and dependent variables used in this study and the data scales are listed in Table 3.3:

*Table 3.3.  
Summary of Independent Variables and Dependent Variables*

<b>Variables</b>	<b>Data Scale</b>
<b>Independent Variables</b>	
Age	Interval
Gender	Nominal
Country of graduation	Nominal
Years of teaching experience	Interval
Administrative support	Interval
Department	Ordinal
Academic rank	Ordinal
Faculty prior instructional technology use	Interval
Faculty perceptions of technology-related professional development	Interval
Faculty attitudes towards teaching with technology	Interval
<b>Dependent Variables</b>	
Stages of concerns	Interval
Faculty use of instructional technology	Interval

### ***Descriptive Statistics***

Descriptive statistics “indicate general tendencies in the data (mean, mode, median), the spread of scores (variance, standard deviation, and range), or a comparison of how one score relates to all others (z scores, percentile rank)” (Creswell, 2012, p. 182). The demographic data retrieved from questions 70-75 included ages, genders, countries of graduation, and years of teaching experience. The researcher worked with a statistical consultant to report the general

tendencies in the data and the spread of scores. This was done with descriptive findings and was reported in chapter four of this study.

### ***Inferential Statistics***

The basic idea of inferential statistics is “to look at scores from a sample and use the results to draw inferences or make predictions about the population” (Creswell, 2012, p. 187). In this study, the participants were the population, rather than a random sample. Thus, the statistically significant differences in the faculty perceptions of the effects of online teaching on teaching, participants’ attitudes towards technology integration in the curriculum, and faculty perceptions of technology professional development needs were reported as true indicators for differences rather than probable differences. To determine if significant differences existed between variables, a series of one-way Multivariate Analysis of Variance (MANOVA) tests were conducted. MANOVA tests whether or not there are statistically significant mean differences among groups on a combination of dependent variables (Stages of Concerns and faculty use of instructional technology); in the Analyses of Variance test (ANOVA) we have only one DV (Field, 2009; Bray & Maxwell; 1985). According to Field (2009):

The more dependent variables that are measured, the more ANOVAs that need to be conducted, so there would be a greater the chance of making a Type I error. However, there are other reasons for preferring MANOVA to several ANOVAs. For one thing, there is important additional information that is gained from a MANOVA. If separate ANOVAs are conducted on each dependent variable, then any relationship between dependent variables is ignored. As such, we lose information about any correlations that might exist between the dependent variables. (Field, 2009, p. 586)

In a MANOVA there are two assumptions: The assumption that the dependent variables (collectively) have multivariate normality within groups (the normality); the assumption that the variances in each group are roughly equal (homogeneity of variance) (Field, 2009). If the MANOVA reveals statistically significant differences (an alpha level of .05 has been selected for this study). Therefore, a series of one-way ANOVA tests were conducted to identify values of significance for further analyses and interpret group difference (Field, 2009). Additionally, after a difference was obtained in the ANOVA, a series of Scheffe post hoc tests were conducted to determine where differences between groups exist. Scheffe gives the maximum protection against making a Type one error (rejection of a true null hypothesis) and can be used to analyze any linear combination of group means (Tabachnick & Fidell, 2007).

The researcher reported not only the significance, but also the degree and the strength of the associations. In this study, variables are not in the same category. Thus, an *eta* test is used for measuring relationships between nominal and interval variables of this study. The result of the *eta* test can range from 0 to +/- 1.00. The result of .00 indicates no association at all and 1.00 and -1.00 a strong association (Creswell, 2012). According to Creswell (2012), “with numbers indicating strength and valence signs indicating direction (+1.00 to –1.00), the statistic provides a measure of the magnitude of the relationship between two variables” (p. 347). Squaring this result ( $\eta^2$ ) allows the calculation of the coefficient of determination, “which assesses the proportion of variability in one variable that can be determined or explained by a second variable” (Creswell, 2012, p. 347). An *eta* value greater than 0 indicates a positive association; that is, as the value of one variable increases so does the value of the other variable. A value less than 0 indicate a negative association; that is, as the value of one variable increases the value of the other variable decreases (Creswell, 2012). For example, if the result  $\eta = +.75$  (or  $-.75$ ),

squaring this value leads to  $\eta^2 = .56$  (or 56%). This means that nearly half (56%) of the variability in one variable can be determined or explained by the other variable. For example, it can be said that faculty prior instructional technology use explains 56% of faculty's stage of concern ( $\eta^2 = .56$ ).

### ***Reliability***

Reliability means that “scores from an instrument are stable and consistent. Scores should be nearly the same when researchers administer the instrument multiple times at different times” (Creswell, 2012, p. 159). The researcher performed reliability tests on the responses to the closed-ended questions of the study. Cronbach's alpha,  $\alpha$ , test is “the most common measure of scale reliability” (Field, 2009, p. 674). The reliability of the Stages of Concern Questionnaire is also extremely high. According to George et al. (2006), after using Cronbach's alpha to find the coefficient of each stage, the Stages of Concern Questionnaire creators found the following alphas for the coefficients of reliability for each of the seven stages: Stage 0 = 0.64, Stage one = 0.78, Stage two = 0.83, Stage three = 0.75, Stage four = 0.76, Stage five = 0.82, and Stage six = 0.71. These coefficients ranged between 0.64 and 0.86 indicate that the Stages of Concern Questionnaire is a highly reliable instrument. In the social science literature, an alpha of 0.70 or greater is considered acceptable, while alphas below 0.60 are considered unacceptable (Neill, 2004).

### ***Validity***

Validity is “the degree to which all of the evidence points to the intended interpretation of test scores for the proposed purpose” (Creswell, 2012, p. 159). The threats to validity refer to “specific reasons for why we can be wrong when we make an inference in an experiment because of covariance, causation constructs, or whether the causal relationship holds over

variations in persons, setting, treatments, and outcomes” (Creswell, 2012, p. 159). In this study the suspected threats to validity were:

- Differential attrition (Mortality); this happens if a specific group of the participants (for example based on age, gender, or teaching experience) of the study decide to drop out or not to participate. Mortality may prevent equal distribution among the groups as well as lead to a lack of generalizability.
- Interaction of selection; this happens if department’s faculty may collaborate together to fill out the survey.
- The participants may be inclined to overstate their practices due to the professional pressures to actively use technology in instruction.

### **Ethical Considerations**

The primary ethical considerations in this study were to, “focus on establishing safeguards that will protect the rights of participants and include informed consent, protecting participants from harm, and ensuring confidentiality” (Bloomberg & Volpe, 2008). Kansas State University (KSU) Institutional Review Board (IRB) approval was acquired prior to data collection procedures (see Appendix A), as well as completion of the six IRB training modules (see Appendix J). The main ethical considerations in this study were protecting the rights of participants through informed consent, protecting participants from harm, and ensuring confidentiality. The researcher took reasonable precautions to maintain confidentiality and anonymity for the faculty in the study.

## **Chapter 4 - Data Analysis and Findings**

### **Chapter Overview**

The purpose of this study was to obtain an in-depth understanding of King Abdulaziz University's faculty's professional development needs for successful adoption of online teaching. The study employed quantitative measures. In this case the instrument was a survey with closed-ended questions. The survey was sent to 230 faculty members of the six departments in the College of Arts and Humanities (History, Geography, Information Science, Sociology and Social Work, Mass Communication, and Islamic Studies). The response rate was 69.1%, (approximately 159 were returned). Among the 159 returned surveys, 51 were printed paper-and-pencil form and 108 were electronic. Of these, 147 were considered usable, which rendered 63.9% as appropriate for analysis.

This chapter presents the quantitative data in three sections. The first section provides survey closed-ended question frequencies for participants' demographic characteristics (age, gender, country of graduation, and years of teaching experience); contextual characteristics (administrative support of technology, department, and academic rank); and technographic characteristics (prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology).

The second section presents the quantitative measures. It displays the data from MANOVAs for the three research questions, as well as data from the ANOVA test, which was conducted after MANOVA to find the significances. Research Question One tested the relationship between the stages of concern and participants' personal characteristics to adopt online teaching through null hypotheses. Research Question Two examined the relationship between faculty stages of concern and contextual characteristics in adopting online teaching.

Research Question Three examined the relationship between faculty use of technology in teaching and their technographic characteristics in teaching with technology through null hypotheses.

## **Research Questions and Null Hypotheses**

This study investigated the concerns of the faculty of King Abdulaziz University's six departments of the College of Arts and Humanities regarding the adoption of online teaching and how these concerns related to faculty professional development needs. There were three primary research questions:

Research Question #1: What is the relationship between full-time faculty personal characteristics (age, gender, country of graduation, and years of teaching experience) and their concerns in adopting online teaching?

*Null Hypotheses:*

*Ho 1.1.* There are no statistically significant differences between faculty age and faculty concerns in adopting online teaching.

*Ho 1.2.* There are no statistically significant differences between faculty gender and faculty concerns in adopting online teaching.

*Ho 1.3.* There are no statistically significant differences between faculty country of graduation and faculty concerns in adopting online teaching.

*Ho 1.4.* There are no statistically significant differences between faculty years of teaching experience and faculty concerns in adopting online teaching.

Research Question #2: What type of relationship exists between full-time faculty contextual characteristics (administrative support of technology, college/department, and academic rank) and their concerns in adopting online teaching?

*Ho 2.1.* There are no statistically significant differences between faculty administrative support of technology and faculty concerns in adopting online teaching.

*Ho 2.2.* There are no statistically significant differences between faculty college/department affiliation and faculty concerns in adopting online teaching.

*Ho 2.3.* There are no statistically significant differences between faculty academic rank and faculty concerns in adopting online teaching.

Research Question #3: To what extent do full-time faculty's technographic characteristics (prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology) influence faculty use of technology in teaching?

*Ho 3.1.* There are no statistically significant differences between faculty prior instructional technology use and faculty use of technology in teaching.

*Ho 3.2.* There are no statistically significant differences between faculty technology-related professional development and faculty use of technology in teaching.

*Ho 3.3.* There are no statistically significant differences between faculty attitudes toward teaching with technology and faculty use of technology in teaching.

## **Descriptive Statistics**

### ***Characteristics of the Respondents***

#### ***Personal Characteristics***

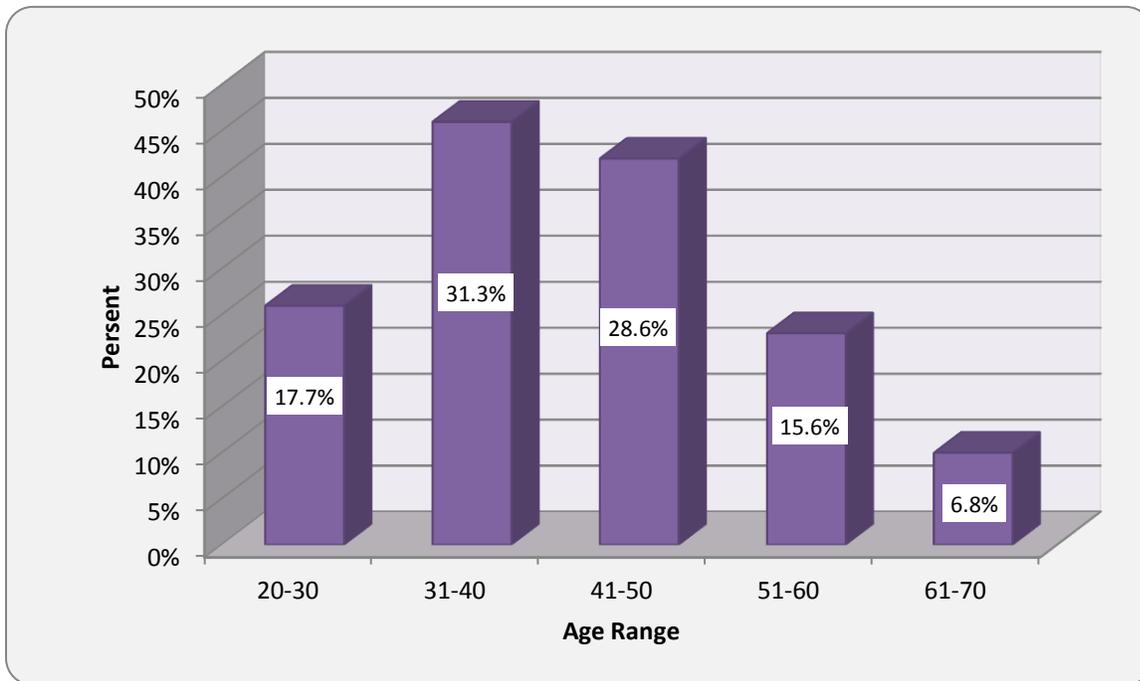
The personal characteristics of this study's respondents were age, gender, country of graduation, and years of teaching experience. The following tables and figures display each of the characteristics for the number and percentage of the participants.

## Age

Table 4.1 and Figure 4.1 show that 17.7% of the participants were in the age range of 20-30, 31.3% were in the age range of 31-40, 28.6% were in the age range of 41-50, 15.6% were in the age range of 51-60, and 6.8% were in the age range of 61-70.

*Table 4.1.*  
*Age Range of the Participants*

Age Range	N	Percentage
20-30	26	17.7%
31-40	46	31.3%
41-50	42	28.6%
51-60	23	15.6%
61-70	10	6.8%
<b>Total</b>	<b>147</b>	<b>100%</b>



*Figure 4.1.* Age Range of the Participants

## Gender

Table 4.2 and Figure 4.2 show that 53.1% of the participants were female and 46.9% were male.

*Table 4.2.*  
*Gender of the Participants*

<b>Independent Variables</b>	<b>N</b>	<b>Percentage</b>
Female	78	53.1%
Male	69	46.9%
<b>Total</b>	<b>147</b>	<b>100%</b>



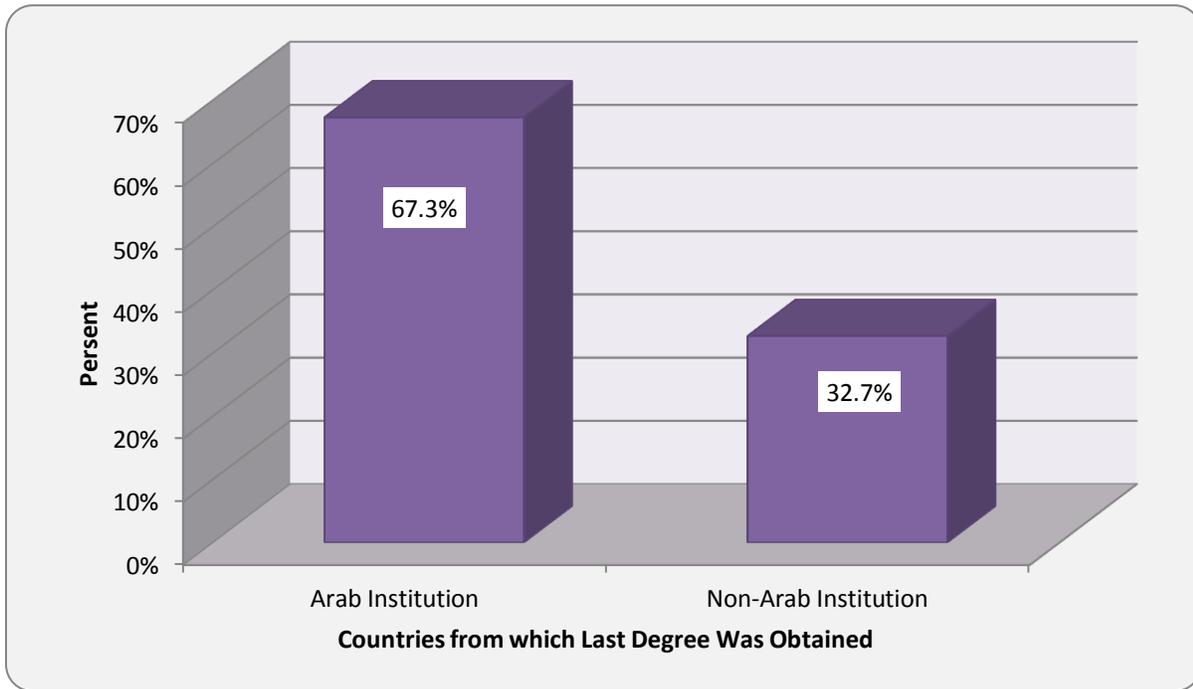
*Figure 4.2.* Gender of the Participants

### ***Country of Graduation***

Table 4.3 and Figure 4.3 display that 67.3% of faculty obtained their last degree from an Arab institution. An “Arab Institution” is one in which classes are taught in Arabic; they are located in such places as Saudi Arabia, Egypt, Jordan, and Bahrain. The percentage of faculty who obtained their last degree from Non-Arab institutions was 32.7%. These were institutions in which other languages were used for teaching, located in such places as the United States, the United Kingdom, Australia, France, and Malaysia.

*Table 4.3.*  
*Countries from which Last Degree Was Obtained*

<b>Independent Variables</b>	<b>N</b>	<b>Percentage</b>
Arab Institution	99	67.3%
Non-Arab Institution	48	32.7%
<b>Total</b>	<b>147</b>	<b>100%</b>



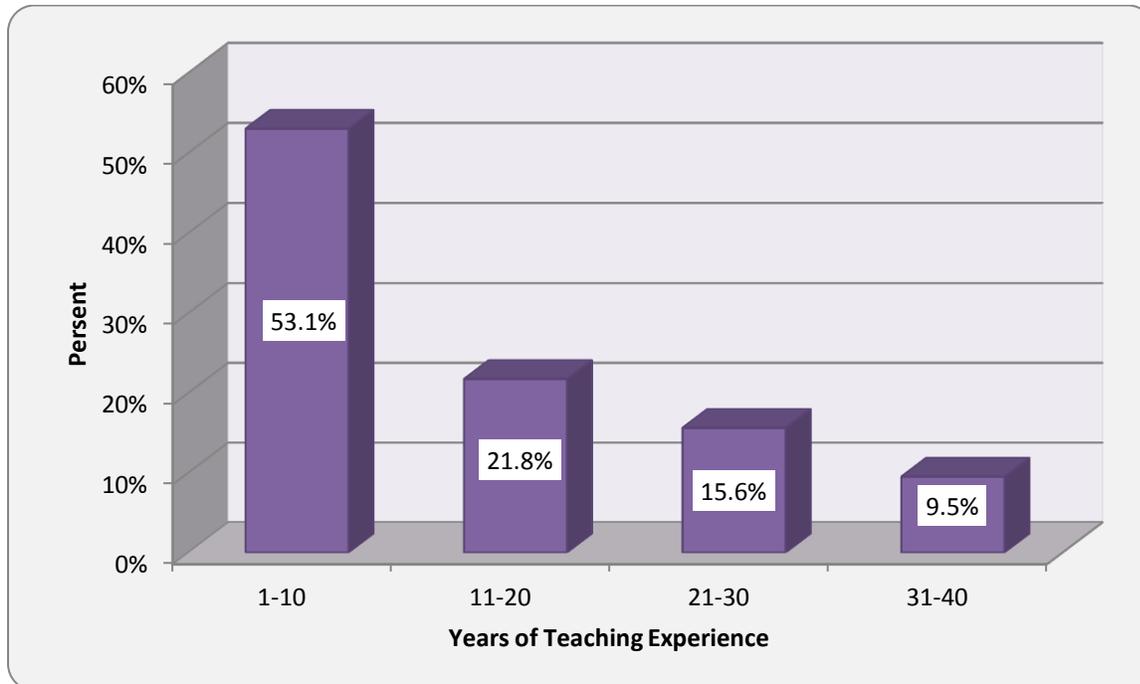
*Figure 4.3.* Countries from which Last Degree Was Obtained

### ***Years of Teaching Experience***

Table 4.4 and Figure 4.4 display years of teaching experience. Those who had taught from one to 10 years comprised 53.1%. The second largest group in this study was faculty who had taught from 11 to 20 years with, 21.8%. Faculty who had taught from 21 to 30 years was the third largest group, with 15.6%, and the smallest group in this study was faculty who had taught more than 30 years, with 9.5%.

*Table 4.4.*  
*Teaching Experience of the Participants*

<b>Independent Variables</b>	<b>N</b>	<b>Percentage</b>
1-10	78	53.1%
11-20	32	21.8%
21-30	23	15.6%
31-40	14	9.5%
<b>Total</b>	<b>147</b>	<b>100%</b>



*Figure 4.4.* Teaching Experience of the Participants

### ***Contextual Characteristics***

The contextual characteristics of this study’s respondents were administrative support of technology, department association, and academic rank. The following tables and figures present these characteristics for the number and percentage of the participants.

### ***Administrative Support of Technology***

The aspect of administrative support of technology was measured via question number 37 which had 9 sub-questions. These sub-questions were grouped according to the three levels of administrators: department; college; and senior academic administrators; with 3 questions for

each level. Each question has a bar chart and a frequency table that show the faculty's assessment of administrative support.

Question #37: Please indicate your agreement with the following statements by circling your response, with "1" indicating a strong disagreement (SD) and "5" indicating a strong agreement (SA). Mark "don't know" (DK), only if you feel you simply cannot provide an opinion regarding the question.

*Table 4.5.*  
*Administrative Support Department Level*

<b>Statement</b>	<b>Frequency</b>					
	<b>SD</b>	<b>D</b>	<b>U</b>	<b>A</b>	<b>SA</b>	<b>DK</b>
Q37.a1: Administrators in my department are supportive of faculty members who teach online classes.	15	16	24	39	35	16
Q37.a2: Administrators in my department recognize the additional workload required to teach online classes.	9	17	25	33	44	17
Q37.a3: Administrators in my department communicate with faculty about the value of teaching online classes.	14	18	22	34	39	18

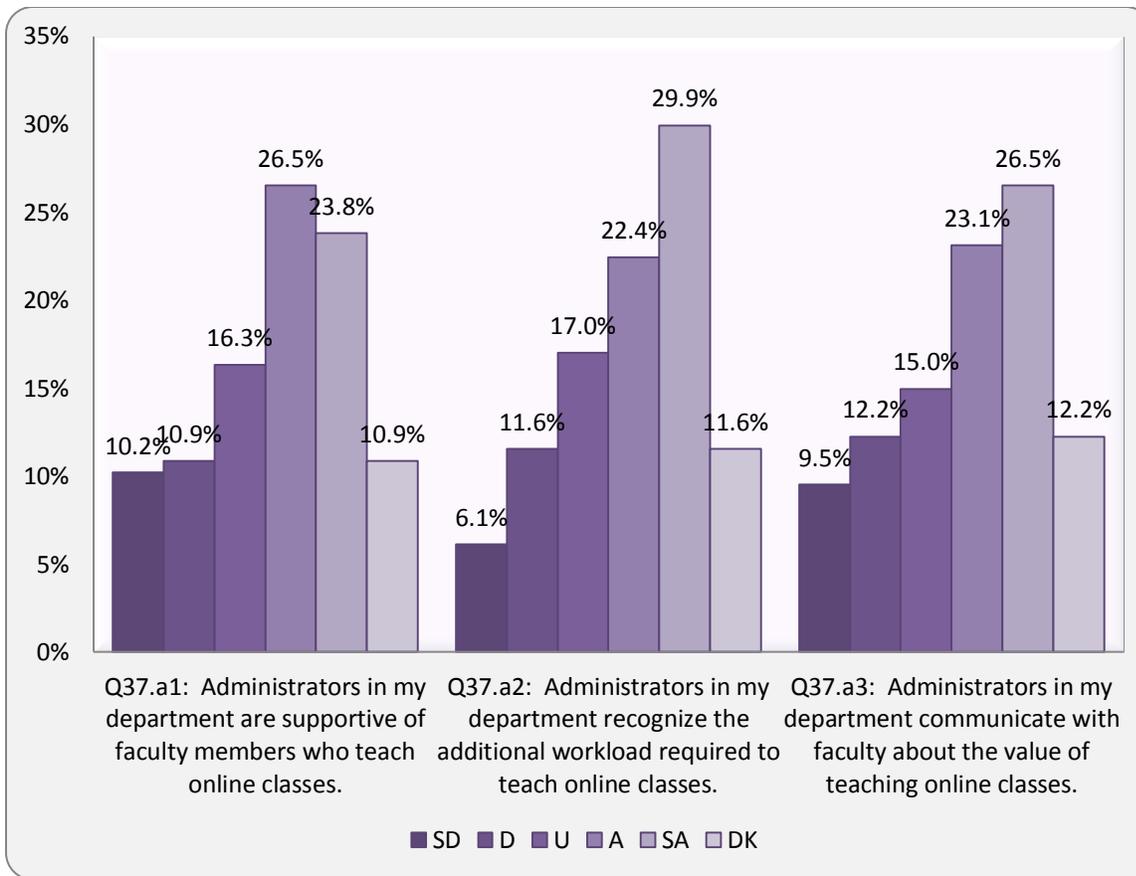


Figure 4.5. Administrative Support Department Level

Table 4.6.  
Administrative Support College Level

Statement	Frequency					
	SD	D	U	A	SA	DK
Q37.b1: Administrators in my college are supportive of faculty members who teach online courses.	12	14	29	34	32	23
Q37.b2: Administrators in my college recognize the additional workload required to teach online courses.	13	13	29	32	32	22
Q37.b3: Administrators in my college communicate with faculty about the value of teaching online courses.	13	14	32	31	26	26

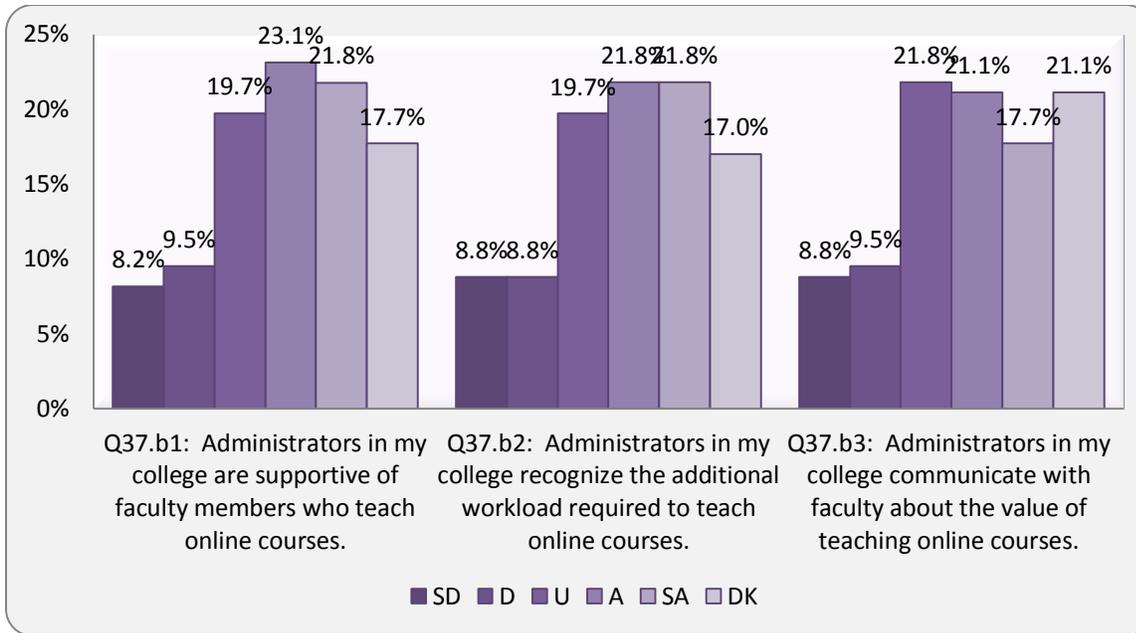


Figure 4.6. Administrative Support College Level

Table 4.7.  
Administrative Support Vice-Presidents & Above Level

Statement	Frequency					
	SD	D	U	A	SA	DK
Q37.c1: Senior campus academic administrators (e.g., Vice-Presidents & above) are supportive of faculty members who teach online courses.	12	13	24	37	37	20
Q37.c2: Senior campus academic administrators (e.g., Vice-Presidents & above) recognize the additional workload required to teach online courses.	9	15	29	30	32	23
Q37.c3: Senior campus academic administrators (e.g., Vice-Presidents & above) communicate with faculty about the value of teaching online courses.	11	14	24	33	34	26

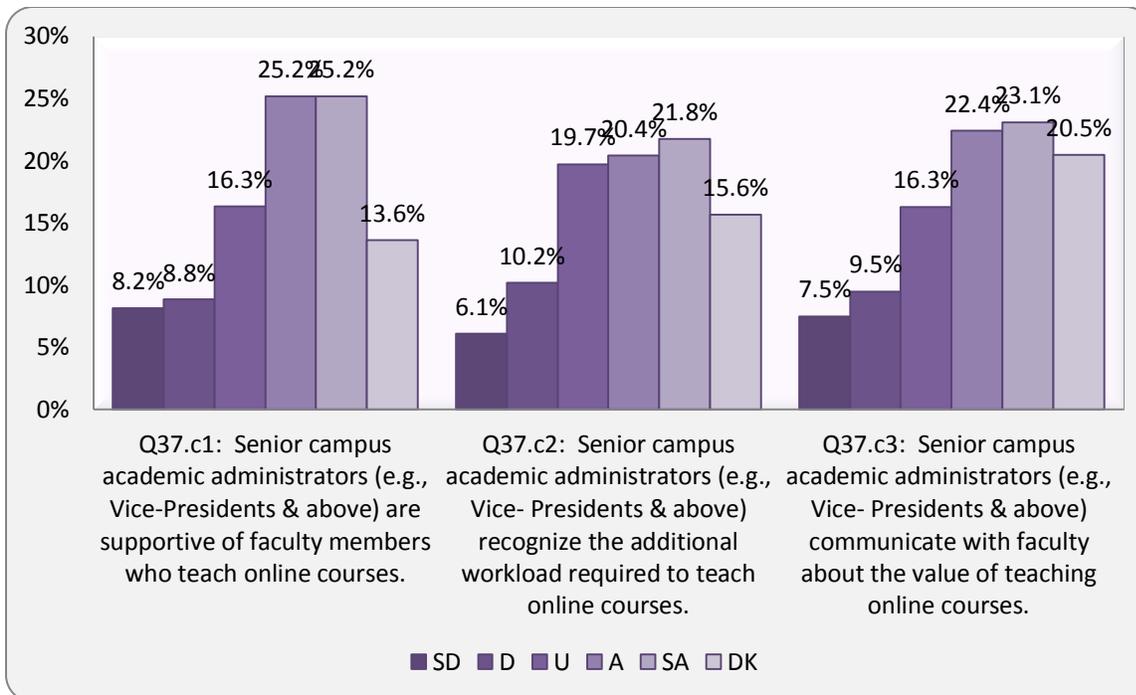


Figure 4.7. Administrative Support Vice-Presidents & Above Level

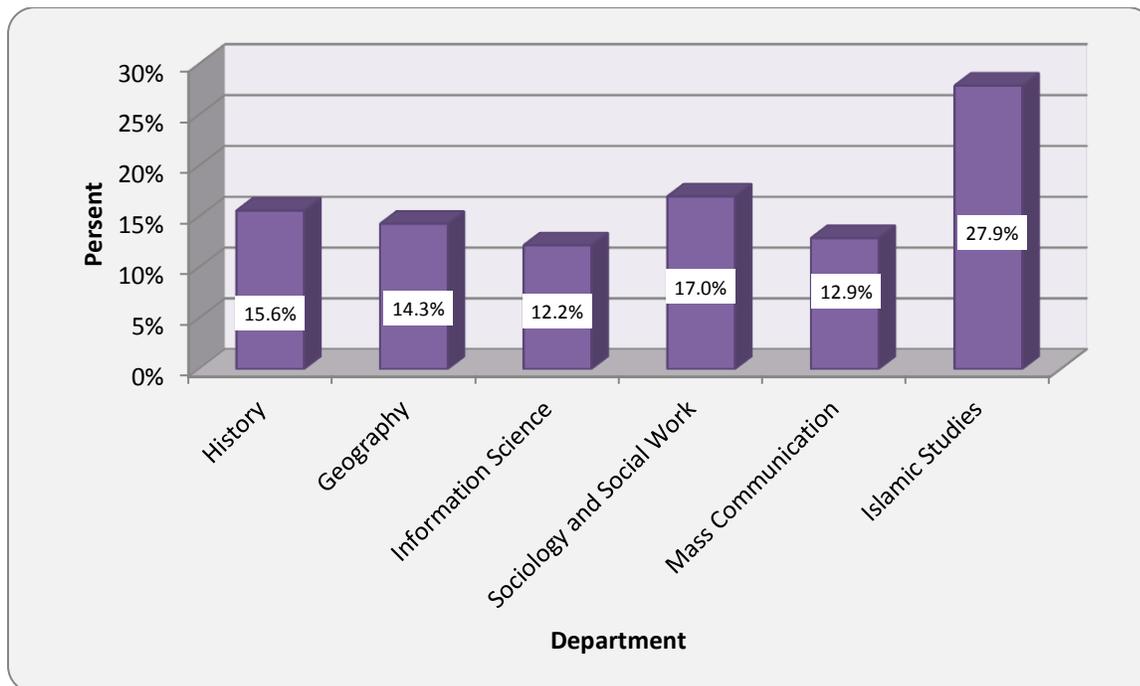
The results show more than 42% of faculty members either agreed or agreed strongly that King Abdulaziz University administrators recognize the additional workload required to teach online courses. Similarly, 43.6% of the participants thought that the College of Arts and Humanities administrators recognized the additional workload required to teach online. Half of the participants (50.3%) thought that administrators in their departments were supportive of faculty members who taught online classes, though 21.1% of the participants either disagreed or disagreed strongly that the administrators in their departments were supportive. Some faculty (15.6%) selected “don’t know” for the last three questions regarding the support of the administrators at the university level, 16.1% selected the same regarding the administrators at the college level, and 11.57% selected the same regarding the administrators at the department level.

### *Department Association*

Table 4.8 and Figure 4.8 display the participants' department associations. The largest number of participants (27.9%) was from the Islamic Studies Department. The next most-represented department was Sociology, with 17.0%. History, Geography, Mass Communication, and Information Science followed.

*Table 4.8.*  
*Department Association of the Participants*

<b>Independent Variables</b>	<b>N</b>	<b>Percentage</b>
History	23	15.6%
Geography	21	14.3%
Information Science	18	12.2%
Sociology and Social Work	25	17.0%
Mass Communication	19	12.9%
Islamic Studies	41	27.9%
<b>Total</b>	<b>147</b>	<b>100%</b>



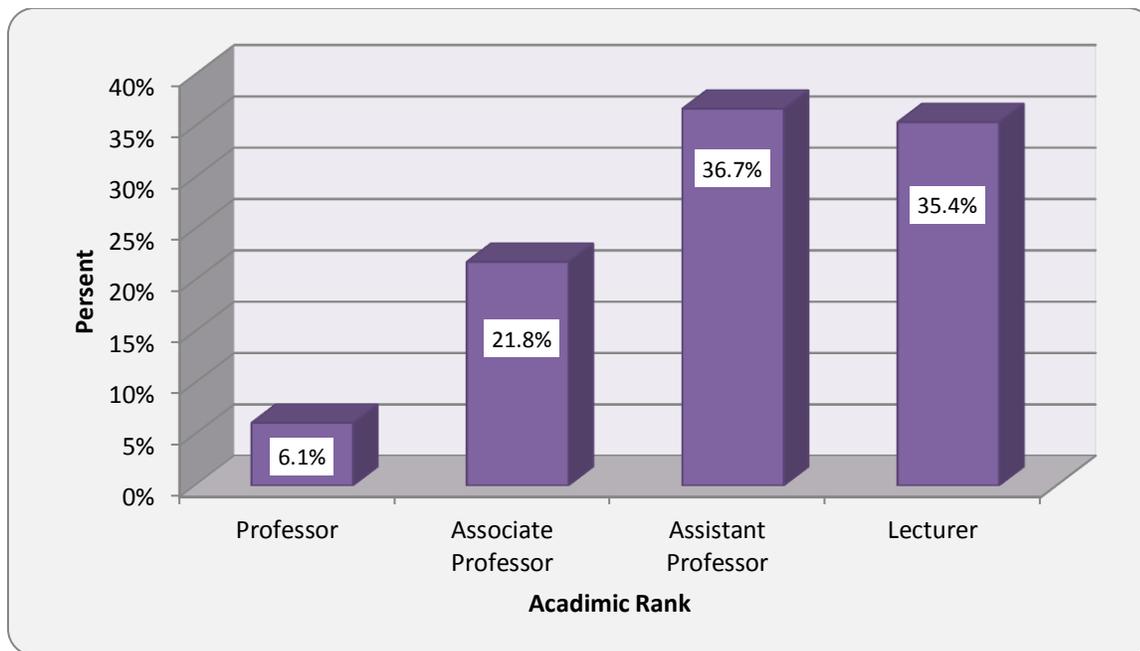
*Figure 4.8.* Department Association of the Participants

### ***Academic Rank***

Table 4.9 and Figure 4.9 show that among the 147 participants who reported their academic rank, 36.7%, were Assistant Professors. At 35.4%, Lecturers followed, 21.8% were Associate Professors, and 6.1% were Professors.

*Table 4.9.*  
*Academic Rank of the Participants*

<b>Independent Variables</b>	<b>N</b>	<b>Percentage</b>
Professor	9	6.1%
Associate Professor	32	21.8%
Assistant Professor	54	36.7%
Lecturer	52	35.4%
<b>Total</b>	<b>147</b>	<b>100%</b>



*Figure 4.9.* Academic Rank of the Participants

### ***Technographic Characteristics***

The studied technographic characteristics were prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology. Descriptive statistics were conducted on these questions using SPSS. Tables were developed

using SPSS and figures were developed using Excel. Each question has a bar chart and a frequency table.

***Prior Instructional Technology Use***

Questions 51, 59, 60, 62, and 64 were short response. Descriptive statistics were conducted on these 5 questions using SPSS. Tables were developed using SPSS and figures were developed using Excel. Each question has a bar chart and a frequency table.

Question # 51: “Please indicate your experience with the following online teaching tools”

*Table 4.10.  
Online Teaching Systems Use*

<b>System</b>	<b>Number of Semesters Per User</b>					<b>Total Number of Users</b>	<b>Percentage</b>
	<b>+3</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>		
EMES	26	1	14	30	75	71	48.3%
CENTRA	36	10	15	23	61	84	57.1%
M-Learning	4	1	5	7	128	17	11.6%
DDL-Data Collection System	6	4	6	16	113	32	21.8%
Other	7	1	3	13	114	24	16.3%

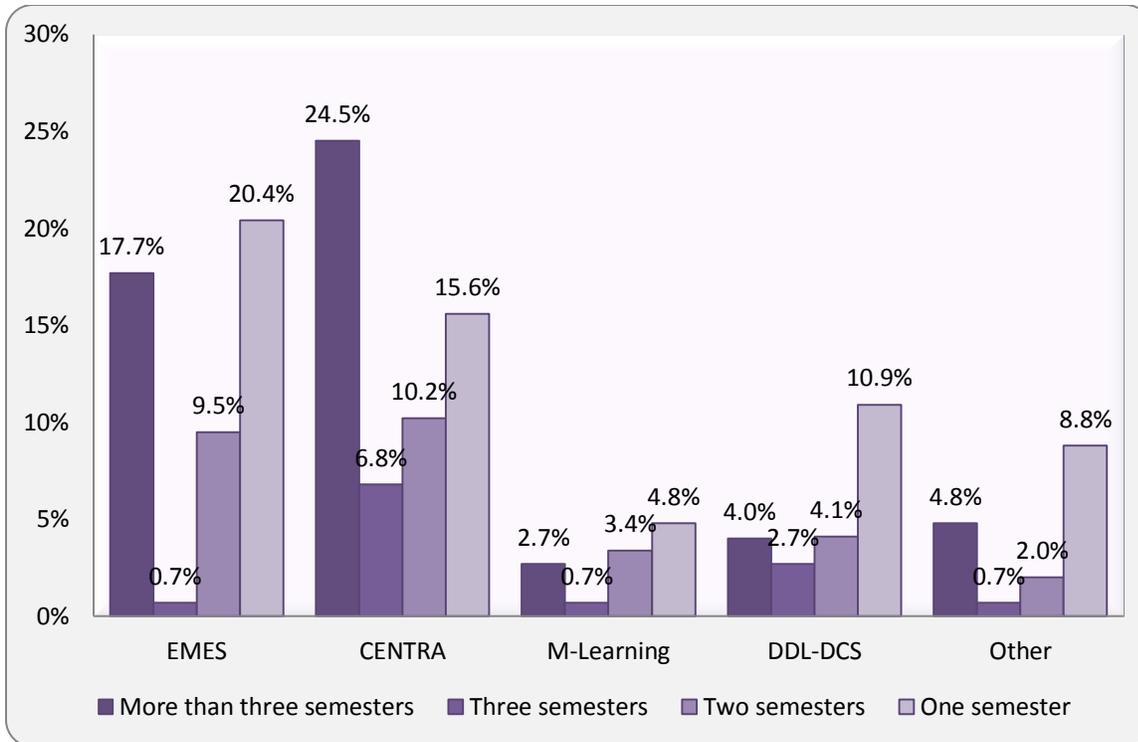


Figure 4.10. Online Teaching Systems Use

More than half of the participants (57.1%) had used CENTRA for at least one semester in the past, and 48.3% of them had used EMES for at least one semester. Only 11.6% had used mobiles for teaching and communicating with their students. 128 out of the 147 participants indicated that they did not use mobile devices in teaching. A high percentage of the participants (78.2%) indicated that they did not use DDL-Data Collection System in their teaching.

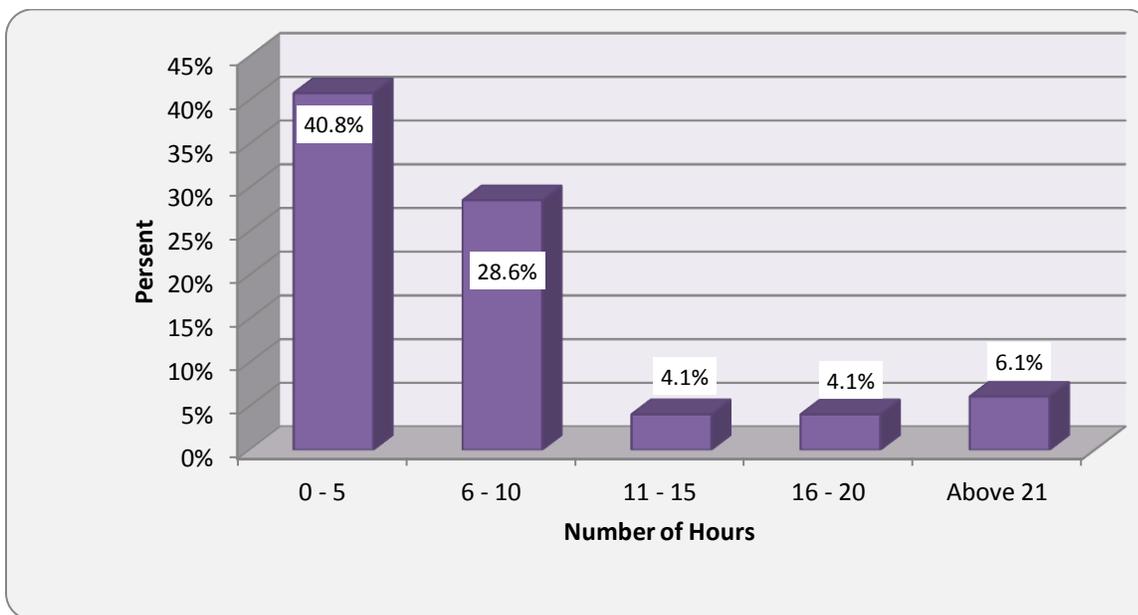
Question # 59: “Approximately how many computer-technology related professional development hours have you completed/attended in the last two years? Please write your response on the line. (Note: computer-technology related professional development hours may include workshops, seminars, programs, institutes, or conferences that you have attended.)”

Over 40% of faculty members had participated in fewer than 5 hours of computer technology related professional development in the last two years. Approximately 28% of

faculty had attended training of 6 to 10 hours, 4% attended training of 11 to 20 hours, and 6.1% attended training of more than 20 hours.

*Table 4.11.*  
*Computer-Technology Related Professional Development Hours*

<b>Number of Hors</b>	<b>N</b>	<b>Percentage</b>
0 - 5	60	40.8%
6 - 10	42	28.6%
11 - 15	6	4.1%
16 - 20	6	4.1%
Above 21	9	6.1%



*Figure 4.11.* Computer-Technology Related Professional Development Hours

Question # 60: “Have you received any formal training (sponsored by the university) in adopting online teaching for instruction?”

More than half of the participants had received formal training in adopting online teaching, while 42.9% of faculty members had not.

Table 4.12.  
Questions 60, 62, and 64

	<b>N</b>	<b>Percentage</b>
<i>Formal Training in Adopting Online Teaching</i>		
Yes	84	57.1%
No	63	42.9%
<i>Grant Support for Adopting Online Teaching</i>		
Yes	103	70.1%
No	44	29.9%
<i>Access to Personnel Assistant</i>		
Yes	66	44.9%
No	81	55.1%



Figure 4.12. Formal Training in Adopting Online Teaching

Question # 62: “Have you received any grants that have supported your use of online teaching systems (EMES, CENTRA, M-Learning, or DDL-Data Collection System)?”

Approximately 70.1% of the faculty members had not received any grant to support the adoption of the online teaching.

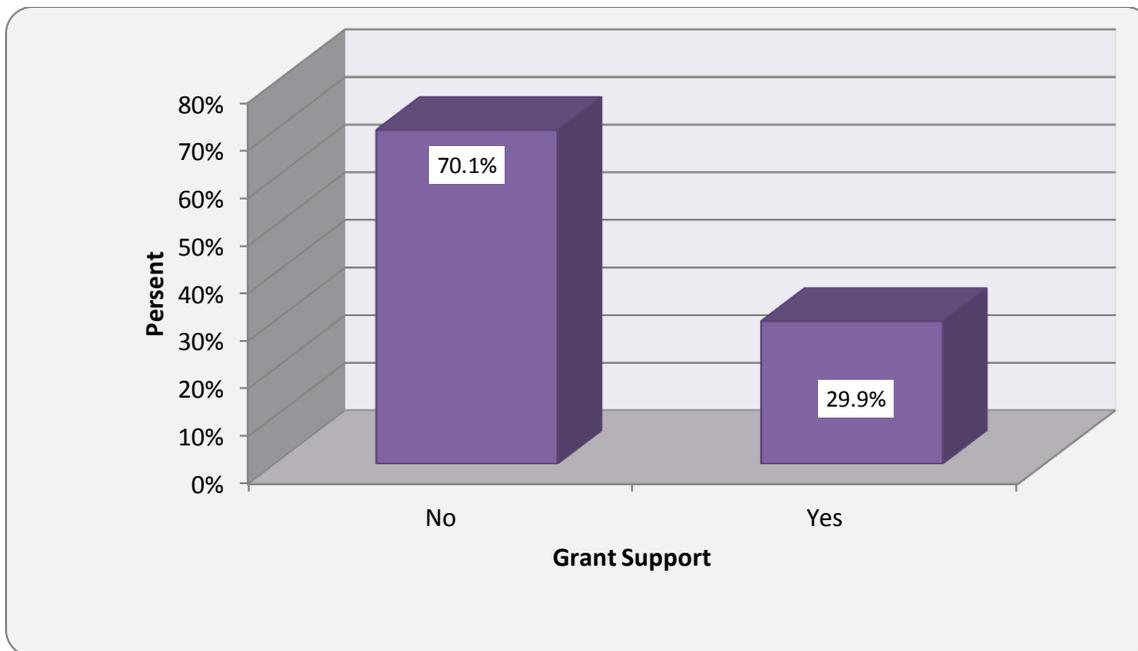


Figure 4.13. Grant Support for Adopting Online Teaching

Question # 64: “Do you have access to personnel (e.g., student assistants, staff) that can help you use any of the online teaching technical support?”

Over half (55.1%) of the faculty members had access to personnel (e.g. student assistants, staff) that could provide them with the needed technical support for the online teaching.

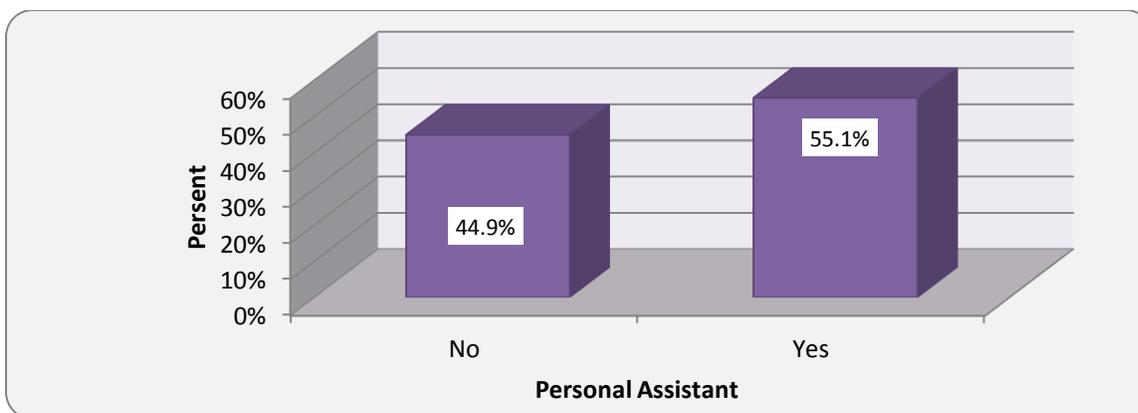


Figure 4.14. Access to Personnel Assistant

### ***Technology-Related Professional Development***

Questions 45-50 addressed technology-related faculty professional development. Figures 4.15 and 4.16, displays the frequency data for these questions. Each statement had five options:

“strongly agree,” “agree,” “neutral,” “disagree,” and “strongly disagree.” Additionally, there were two short response questions, number 61 and 63. Tables were developed using SPSS and charts were developed using Excel. The data from questions 45-50 revealed great need for professional development:

- The results of question 45 indicated that 74.6% agreed or strongly agreed that faculty members had an immediate need for more training with curriculum that integrates technology.
- The results of question 46 indicated a high percentage of the participants (93.1%) who agreed or strongly agreed that they were in need for reliable access to the internet. No one selected “strongly disagree” for this question.
- The results of question 47 indicated that 75.2% strongly agreed that faculty members needed more technical support to support using technology in instruction.
- The results of question 48 indicated that 90% agreed or strongly agreed that faculty members must have a stronger voice in the technology professional development program choices and topics.
- The results of question 49 indicated that 84.3% agreed or strongly agreed that faculty members need regular instructional technology seminars/workshops.
- The results of question 50 indicated that 41% were not sure that university’s faculty technology professional development plan met their technology needs.

Table 4.13.  
Technology-Related Professional Development

Statement	Frequency				
	SD	D	U	A	SA
Q45: I have an immediate need for more training with curriculum that integrates technology.	9	9	19	57	52
Q46: I need reliable access to the internet.	0	5	5	24	112
Q47: I need more technical support to support using technology in instruction.	1	2	7	26	109
Q48: I believe faculty members must have a stronger voice in the professional development program choices and topics.	0	1	11	44	90
Q49: I need regular instructional technology seminars/workshops.	3	9	11	48	75
Q50: My university's faculty technology professional development plan meets my technology needs.	4	16	59	34	31

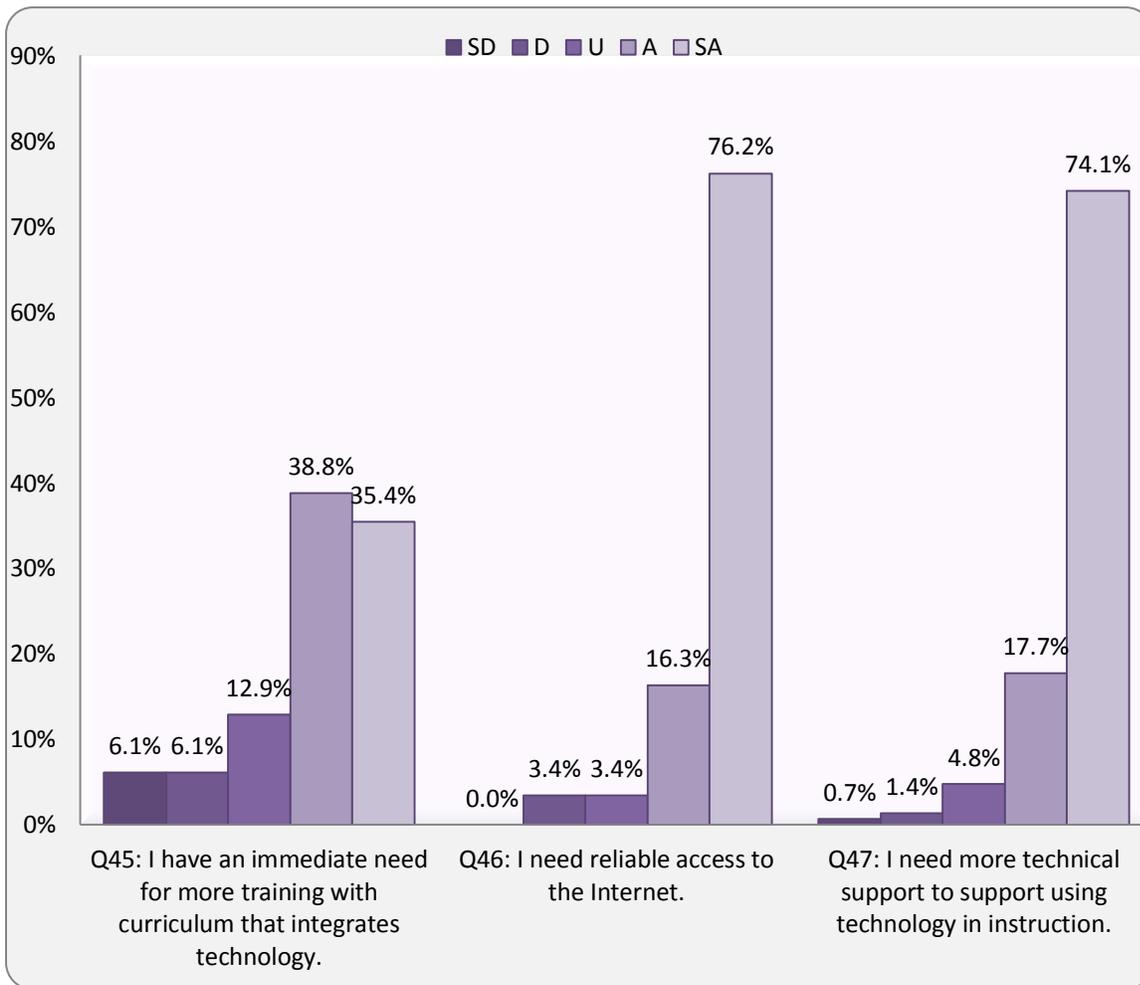


Figure 4.15. Technology-Related Professional Development 1 of 2

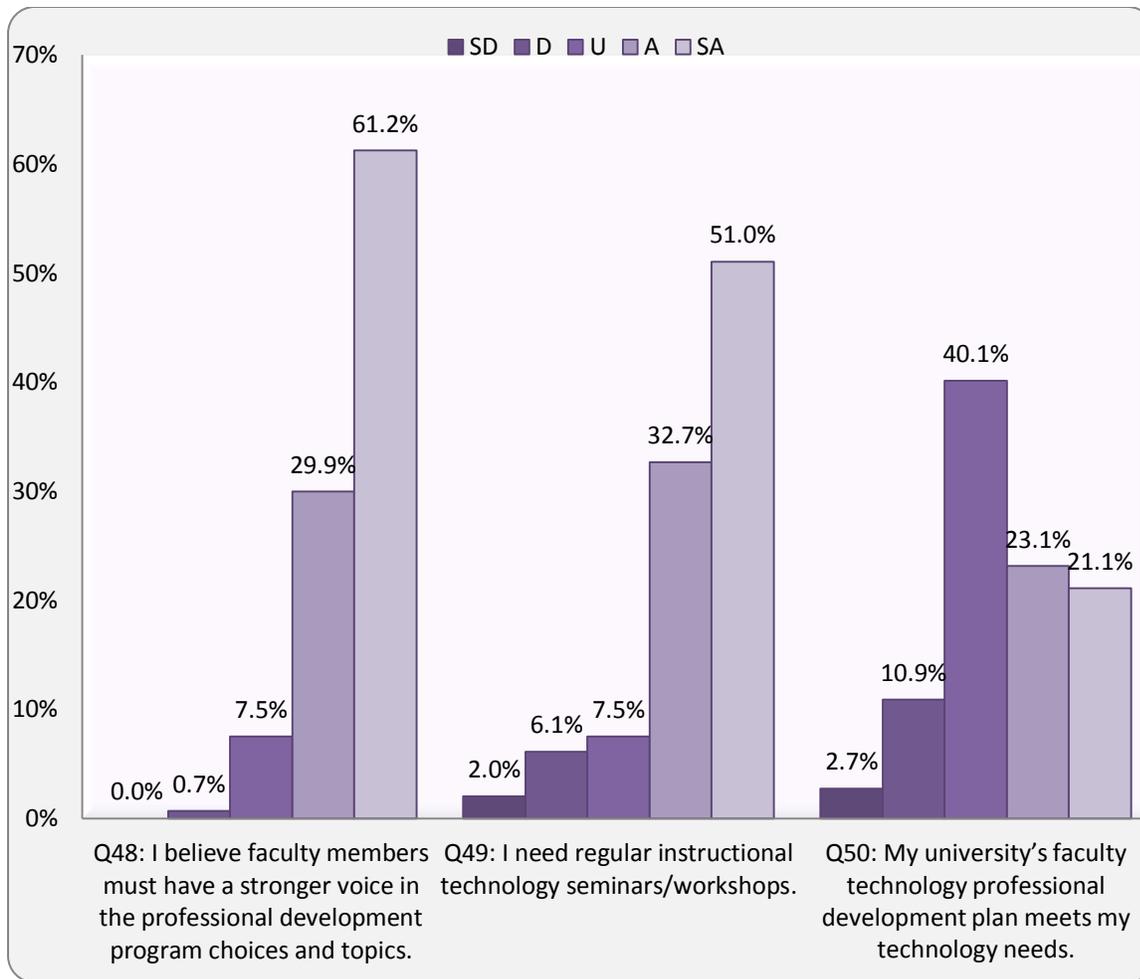


Figure 4.16. Technology-Related Professional Development 2 of 2

Question # 61: “Would you like a workshop on obtaining a grant to support your use of learning management systems (EMES, CENTRA, M-Learning, or DDL-Data Collection System)?”

A high percentage of the participants (83%) answered that they needed a grant to support their use of learning management systems.

Table 4.14.  
Formal Training on Obtaining a Grant to Support LMS use

	N	Percentage
Yes	122	83%
No	25	17%
<b>Total</b>	<b>147</b>	<b>100.0%</b>

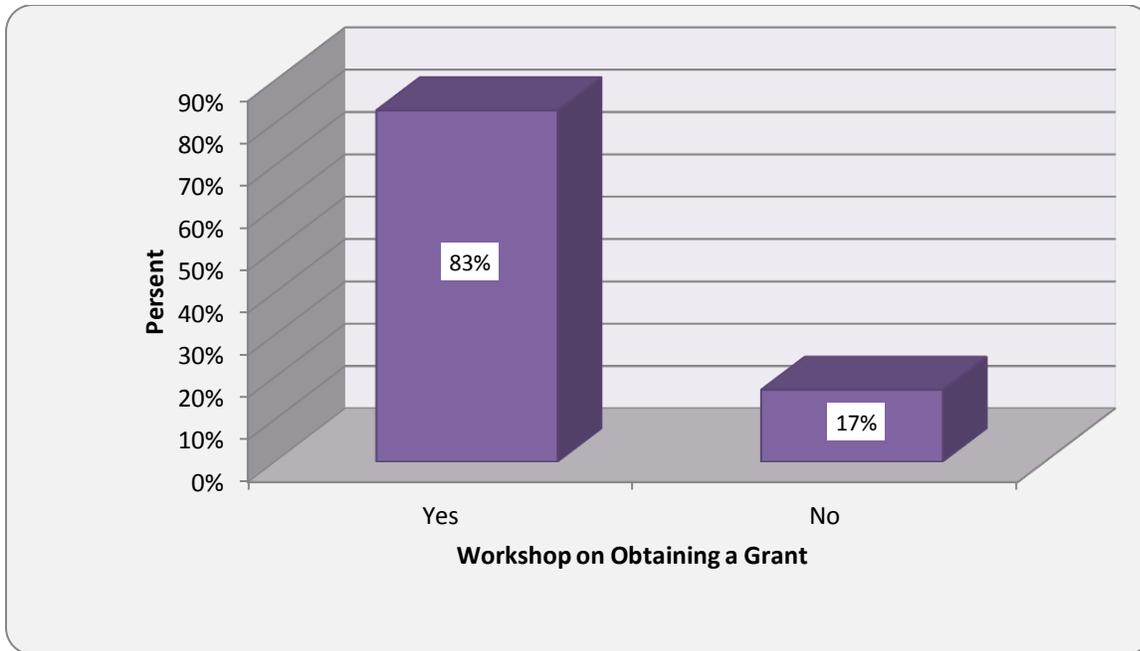


Figure 4.17. Formal Training on Obtaining a Grant to Support LMS use

Question # 63: “Would you like a workshop on obtaining a grant to develop an online course?”

Approximately 80% of the faculty members would like to have a workshop on obtaining a grant to develop an online course.

Table 4.15.  
Formal Training on Obtaining a Grant to Develop Online Courses

	<b>N</b>	<b>Percentage</b>
Yes	117	79.6%
No	30	20.4%
<b>Total</b>	<b>147</b>	<b>100.0%</b>

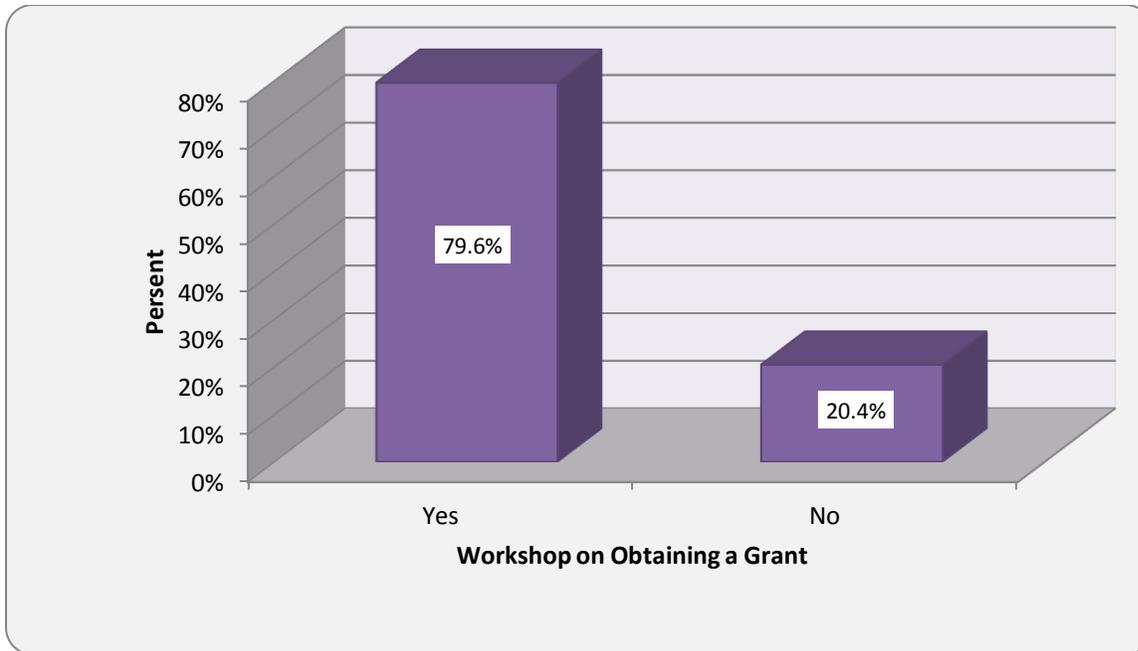


Figure 4.18. Formal Training on Obtaining a Grant to Develop Online Courses

### ***Attitudes toward Teaching with Technology***

Questions 38-44 and 53 addressed attitudes toward teaching with technology. The following Table and Figures displays the frequency data for these statements. Each statement had five options: “strongly agree”, “agree”, “neutral”, “disagree”, and “strongly disagree.” Tables were developed using SPSS and charts were developed using Excel. The data from the questions significant results of faculty attitudes toward teaching with technology:

- The results of question 38 indicated that 83.5% of the participants were highly interested (selected agree or strongly agree) in learning how to integrate technology into online teaching.
- The results of question 39 indicated that 82.1% of the participants were highly interested (selected agree or strongly agree) in learning how to change their pedagogy to be able to teach online.

- The results of question 40 indicated that only about half of the participants believed that online classes would be beneficial to their students, while 16.5% believed the opposite a (selected disagree or strongly disagree). The rest of the participants (24.1%) were neutral regarding this statement.
- The results of question 41 indicated that 59.8% agreed or strongly agreed that they needed more resources to learn about how to teach online.
- The results of question 42 indicated that about half of the participants believed that teaching online was not a good way for students to learn, while 21.1% believed the opposite a (selected disagree or strongly disagree). The rest of the participants (26.5%) were neutral regarding this statement.
- The results of question 43 indicated that 70.8% of the participants were highly interested (selected agree or strongly agree) in attending workshops on how to teach online classes.
- The results of question 44 indicated that 80.9% of the participants believed that adopting online teaching requires necessary curriculum reforms.
- The results of question 53 indicated that 52.4% of the participants were interested (selected disagree or strongly disagree to the statement that they are not interested) in using mobile devices for assignments, reminders, or advising.

Table 4.16.  
Faculty Attitudes Toward Teaching with Technology

Statement	Frequency				
	SD	D	U	A	SA
Q38: I am interested in learning how to integrate technology into online teaching.	4	8	12	51	70
Q39: I am interested in learning how to change my pedagogy to be able to teach online.	4	11	11	49	70
Q40: I believe that online classes would be beneficial to our students.	8	16	35	32	54
Q41: I need more resources to learn about how to teach online.	10	18	28	49	39
Q42: I believe that teaching online is not a good way for students to learn.	19	13	39	36	39
Q43: I am interested in attending workshops on how to teach online classes.	7	10	24	51	53
Q44: Adopting online teaching requires necessary curriculum reforms.	3	4	20	45	74
Q53: I am not interested in using mobile devices for assignments, reminders, or advising.	45	32	31	19	18

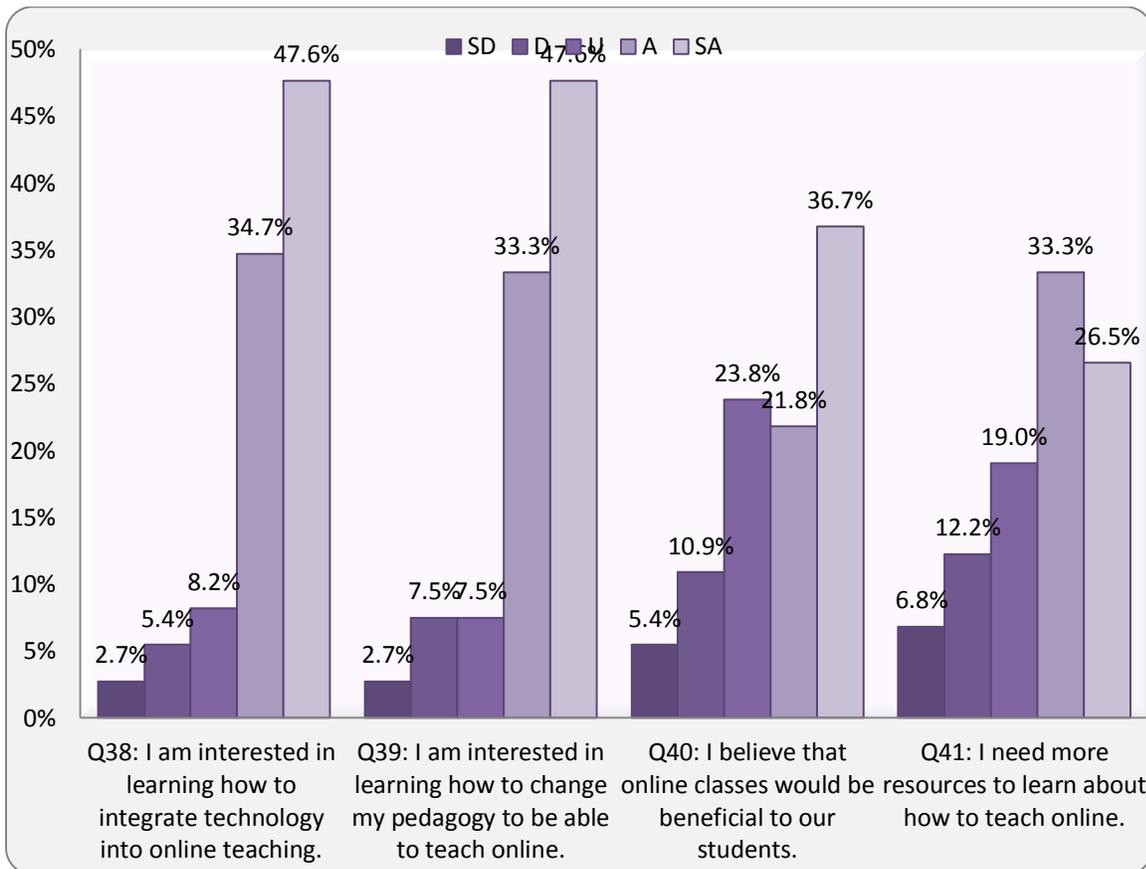


Figure 4.19. Faculty Attitudes Toward Teaching with Technology 1 of 2

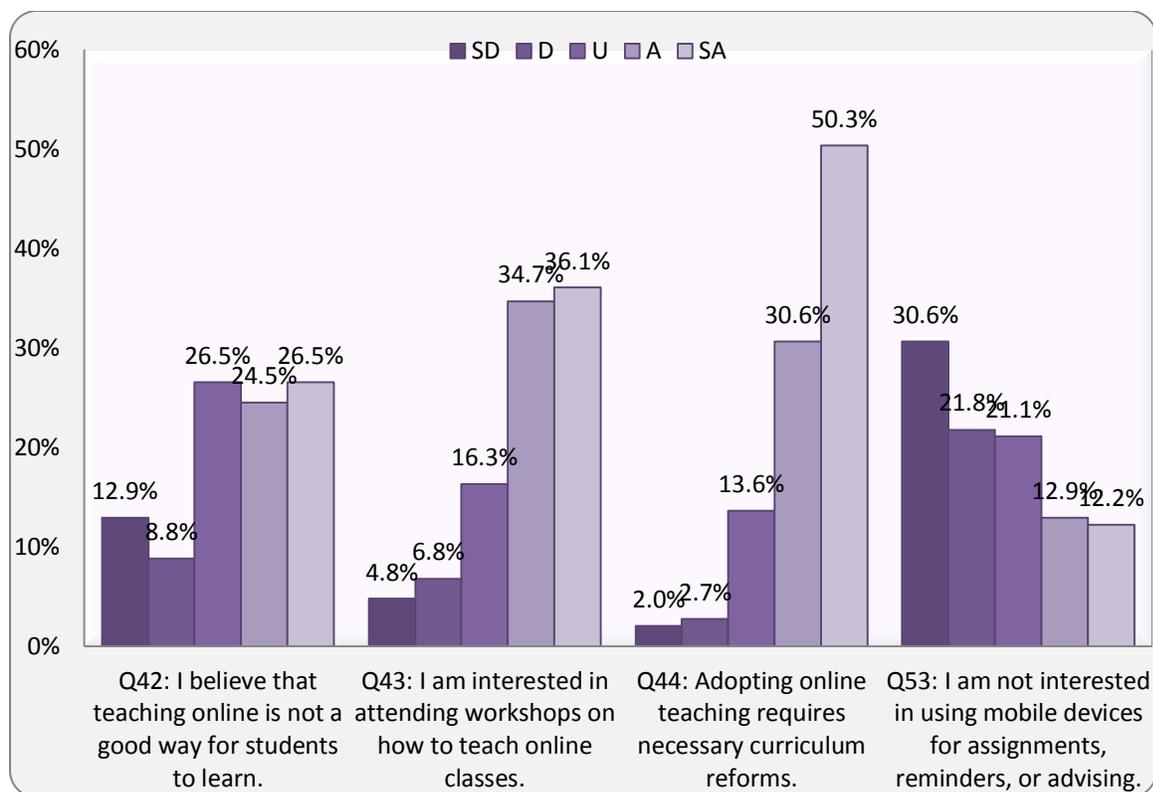


Figure 4.20. Faculty Attitudes Toward Teaching with Technology 2 of 2

### Stages of Concern

The Stages of Concern (SoC) data emerged from the first 35 questions of the survey. This data was used to test the relationship between participants' personal characteristics and the SoC, which helped in answering the first research question. It also tested for a relationship between participants' contextual characteristics and the SoC, which helped in answering the second research question. To construct the group profile of the respondents' stages of concern, the raw mean score of each stage was used to determine the percentile score for that stage of concern to adopt online teaching in King AbdulAziz University. George, Hall, and Stiegelbauer (2006) recommended using the raw data from the questionnaire to prevent the extreme values from influencing the results.

Table 4.17 shows the mean, standard deviation, and mean score percentile for stages of concern from the raw data. The overall mean percentile stage score for all respondents indicated that respondents' highest concerns were unrelated and self-concerns. Table 4.17 and Figure 4.21 indicate that the highest stage of concern for participants was Unconcerned, with a mean score percentile of 87%. The Informational stage had the second highest mean score percentile of 72%, and Personal SoC was the third highest with a mean score percentile of 70%. Refocusing had a mean score percentile of 65% and was the fourth highest SoC. The Collaboration SoC had a mean score percentile of 55% and the Management SoC had a mean score percentile of 52%. Collaboration and Management were the fifth and sixth highest stages of concern. The Consequence SoC had a mean score percentile of 43% and was the lowest stage of concern.

*Table 4.17.  
Mean Percentile Stage Score for Participants*

	<b>Stage of Concerns</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Percentile</b>
Unrelated	Stage 0 Unconcerned	17.1	8.5	87%
	Stage 1 Informational	22.0	6.9	72%
Self	Stage 2 Personal	22.5	8.2	70%
	Stage 3 Management	14.4	7.3	52%
Task	Stage 4 Consequence	25.4	7.5	43%
	Stage 5 Collaboration	23.4	7.7	55%
Impact	Stage 6 Refocusing	21.6	6.9	65%

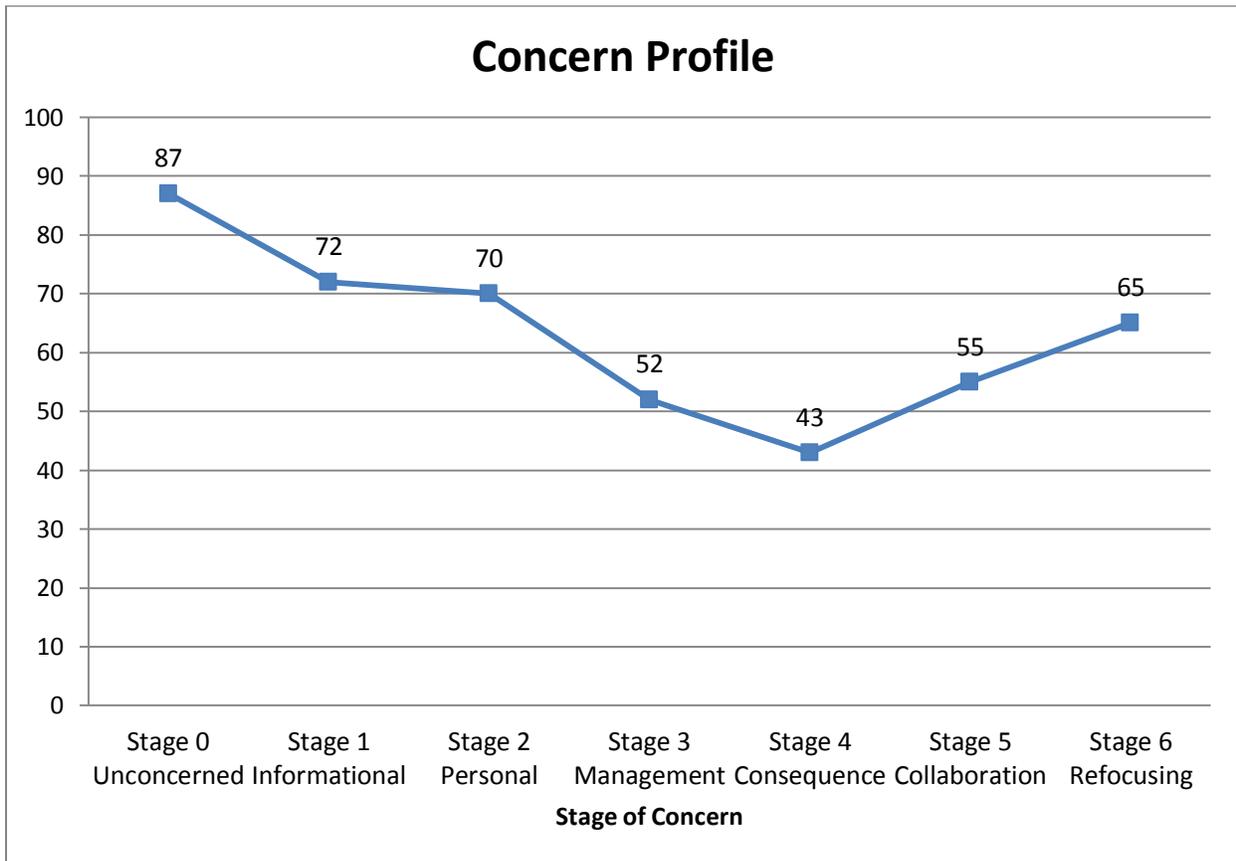


Figure 4.21. Mean Percentile Stage Score for Participants

### ***SoC Analysis***

The percentile scores (see Table 4.17) show that overall, the average SoC profiles for participants at this university had higher percentile scores for stages 0-2. This meant that faculty had concerns about what online teaching was and required more information in order to make a decision on whether to teach online or not. There were very low percentile scores for stages 3-5. This meant that faculty members had fewer concerns with regard to the areas of management, consequence, and collaboration.

The high score in stage zero (Awareness) indicate the degree of faculty interest in and engagement with online teaching in comparison to their other tasks, activities, and efforts. The score in stage one (Informational) indicates that the participants would like to know more about

online teaching, and the high score in Stage two (Personal) (70%) deals with self-concerns. Participants are most concerned about status, rewards, and the effects of online teaching might on themselves.

As shown in Table 4.17, stages 3-5 had low scores, suggesting that faculty who completed the Stages of Concern Questionnaire had concerns that were generally aligned to nonusers or users who sometimes implemented parts of an innovation. Nonuser concerns profiles were typically highest in stages 0-2 and lowest in stages 4-6 (George, Hall, & Stiegelbauer, 2006). Additionally, according to George, Hall, & Stiegelbauer (2006) and Hall and George (1979), any tailing up in Stage six (Refocusing) on a nonuser profile should be interpreted as resistance to the innovation, which is what happened in this study.

## **Quantitative Measures**

Ten one-way multivariate analyses of variance (MANOVA) tests were performed to compare the means of each independent variables to determine if significant differences existed between King Abdulaziz University faculty concerns, technology use in teaching, personal characteristics (age, gender, country of graduation, and years of teaching experience), contextual characteristics (administrative support of technology, college/department, and academic rank), and faculty's technographic characteristics (prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology). Assumptions of linearity, homogeneity of variance-covariance, and normality were met. The Pillai's Trace statistic was used to determine statistical significance at the .05 level. While in most research Wilk's Lambda is reported, in some cases, especially when the assumption of homogeneity of variance-covariance matrices and equal cell sizes are violated, Pillai's Trace is found to be more robust (Tabachnick & Fidell, 2007). Levene's test of equality of error variances among the

dependent variables of this study revealed a significance of less than .05; thus, Pillai's Trace statistic was used. Follow-up one-way analysis of variance (ANOVA) was completed on each MANOVA procedure that demonstrated statistically significant relationships between the independent variables and the dependent variables. The ANOVAs were used to determine statistically significant differences in the mean.

MANOVA tests for statistically significant mean differences among groups on a combination of dependent variables (Stages of Concerns and faculty use of instructional technology). In the ANOVA, we have only one dependent variable (Field, 2009; Bray & Maxwell; 1985). According to Field (2009):

The more dependent variables that are measured, the more ANOVAs that need to be conducted, so there would be a greater the chance of making a Type I error....there are other reasons for preferring MANOVA....If separate ANOVAs are conducted on each dependent variable, then any relationship between dependent variables is ignored....we lose information about any correlations that might exist between the dependent variables. (Field, 2009, p. 586)

### ***Research Question One***

*What is the relationship between full-time faculty personal characteristics (age, gender, country of graduation, and years of teaching experience) and their concerns in adopting online teaching?*

In order to determine if there were statistically significant differences in the SoC regarding personal characteristics (age, gender, country of graduation, and years of teaching experience), MANOVA tests were conducted. Table 4.18 provides a summary of the Pillai's

Trace test results of the MANOVA on King Abdulaziz University College of Arts and Humanities faculty's personal characteristics and their concerns in adopting online teaching.

Table 4.18.  
Pillai's Trace Test Results of MANOVA on Stage of Concerns

Independent Variables	Value	F	Df	Error df	Sig.	Eta
Age	.287	1.148	28	416.00	.278	
Gender	.155	2.650	7	101.00	.015	.155
Country of Graduation	.067	1.042	7	101.00	.407	
Teaching Experience	.205	1.081	21	309.00	.368	

### Test Results of Null Hypotheses

*Ho 1.1.* There are no statistically significant differences between faculty age and faculty concerns in adopting online teaching.

#### Finding

One-way MANOVA on the Pillai's Trace test results (Pillai's Trace (28, 416) = .287,  $p > .05$ ) did not show a statistically significant difference. Thus, the participants' concerns in adopting online teaching were not influenced by age. The null hypothesis *Ho 1.1* was accepted.

*Ho 1.2.* There are no statistically significant differences between faculty gender and faculty concerns in adopting online teaching.

#### Finding

One-way MANOVA on the Pillai's Trace test results (Pillai's Trace (7, 101) = .155,  $p < .05$ ) with partial  $\eta^2 = .155$  showed a statistically significant difference. Thus, the participants' concerns in adopting online teaching were influenced by their gender. Therefore, null hypothesis *Ho 1.2* was rejected. To determine the exact differences between genders, a univariate ANOVA test was conducted. Table 4.19 shows the significance values for concerns in adopting online teaching based on gender.

Table 4.19.

ANOVA Significance Values for Concerns in Adopting Online Teaching by Gender

DV (Stage)	Type III SS	DF	Mean Square	F	Sig.	Eta
Stage 0 Unconcerned	23.262	1	23.262	.025	.875	.000
Stage 1 Informational	1,926.355	1	1,926.355	5.212	.024	.035
Stage 2 Personal	4,250.990	1	4,250.990	9.411	.003	.061
Stage 3 Management	22.648	1	22.648	.031	.861	.000
Stage 4 Consequence	497.483	1	497.483	.651	.421	.004
Stage 5 Collaboration	1,724.683	1	1,724.683	2.420	.122	.016
Stage 6 Refocusing	6,813.832	1	6,813.832	12.692	.000	.080

According to the ANOVA result, the significances were found in stage one ( $p < .05$ , partial  $\eta^2 = .035$ ), stage two ( $p < .01$ , partial  $\eta^2 = .061$ ) and stage six ( $p < .001$ , partial  $\eta^2 = .080$ ). Since the gender variable is dichotomous, a post hoc test could not be conducted. Therefore, a mean comparison was performed to determine the exact differences between gender groups. To compare the gender's means, a t-test was conducted. Table 4.20 displays results for male and female means of stages one, two, and six.

Table 4.20.

Gender Means for Stages 1, 2 and 6

	Gender	N	Mean	SD	Sig.
<b>Stage 1</b>	Female	78	81.1667	17.39116	.024
	Male	69	73.9130	21.10948	
<b>Stage 2</b>	Female	78	80.8333	19.48387	.003
	Male	69	70.0580	23.09500	
<b>Stage 6</b>	Female	78	63.9231	26.08715	.000
	Male	69	77.5652	19.34401	

Participants *t*-test results indicated that King Abdulaziz University female ( $M = 81.167$ ,  $SD = 17.391$ ) and male ( $M = 73.913$ ,  $SD = 21.109$ ) faculty significantly differed in their stage one concerns,  $t(145) = 2.28$ ,  $p < .05$ . Results also indicated that King Abdulaziz University female ( $M = 80.833$ ,  $SD = 19.484$ ) and male ( $M = 70.058$ ,  $SD = 23.095$ ) faculty significantly differed in their stage two concerns,  $t(145) = 3.06$ ,  $p < .01$ . Finally, results indicated that King Abdulaziz

University female ( $M= 63.923$ ,  $SD= 26.0871$ ) and male ( $M= 77.565$ ,  $SD= 19.344$ ) faculty significantly differed in their stage six concerns,  $t(145)=-3.56$ ,  $p<.001$ .

*Ho 1.3.* There are no statistically significant differences between faculty country of graduation and faculty concerns in adopting online teaching.

*Finding*

One-way MANOVA on the Pillai's Trace test results (Pillai's Trace (7, 101) = .067,  $p > .05$ ) did not show a statistically significant difference. Thus, the participants' concerns in adopting online teaching were not influenced by their country of graduation. The null hypothesis *Ho 1.3* was accepted.

*Ho 1.4.* There are no statistically significant differences between faculty years of teaching experience and faculty concerns in adopting online teaching.

*Finding*

One-way MANOVA on the Pillai's Trace test results (Pillai's Trace (21, 309) = .205,  $p > .05$ ) did not show a statistically significant difference. Thus, the participants' concerns in adopting online teaching were not influenced by their years of teaching experience. The null hypothesis *Ho 1.4* was accepted.

### ***Research Question Two***

*What type of relationship exists between full-time faculty contextual characteristics (administrative support of technology, college/department, and academic rank) and their concerns in adopting online teaching?*

In order to determine if there were statistically significant differences in the stages of concerns based on the contextual characteristics (administrative support of technology, college/department, and academic rank), MANOVA tests were conducted.

### ***Test Results of Null Hypotheses***

*Ho 2.1.* There are no statistically significant differences between faculty administrative support of technology and faculty concerns in adopting online teaching.

#### ***Finding***

Table 4.21 provides a summary of the Pillai's Trace test results of MANOVA on administrative support of technology. One-way MANOVA on the question 37.a1 test results were statistically significant at the  $<.05$  level (Pillai's Trace (35, 475) = .495, with partial  $\eta^2=.099$ ). Thus, the participants' concerns in adopting online teaching were influenced by their administrative support of technology. The significant value of the Pillai's Trace MANOVA test was  $p<.05$ , see Table 4.21. Therefore, the null hypothesis *Ho 2.1* was rejected. Table 4.22 provides the significance values of faculty concerns in adopting online teaching based on administrators support.

Table 4.21.

*Pillai's Trace Test Results of MANOVA on Stage of Concerns Based on Administrative Support*

<b>Independent Variables</b>	<b>Value</b>	<b>F</b>	<b>df</b>	<b>Error df</b>	<b>Sig.</b>	<b>Eta</b>
Q37.a1: Administrators in my department are supportive of faculty members who teach online classes.	.495	1.490	35	475	.038	.099
Q37.a2: Administrators in my department recognize the additional workload required to teach online classes.	.378	1.110	35	475	.309	
Q37.a3: Administrators in my department communicate with faculty about the value of teaching online classes.	.325	.945	35	475	.562	
Q37.b1: Administrators in my college are supportive of faculty members who teach online courses.	.252	.720	35	475	.883	
Q37.b2: Administrators in my college recognize the additional workload required to teach online courses.	.325	.945	35	475	.562	
Q37.b3: Administrators in my college communicate with faculty about the value of teaching online courses.	.312	.904	35	475	.629	
Q37.c1: Senior campus academic administrators (e.g., Vice-Presidents & above) are supportive of faculty members who teach online courses.	.409	1.208	35	475	.196	
Q37.c2: Senior campus academic administrators (e.g., Vice- Presidents & above) recognize the additional workload required to teach online courses.	.401	1.182	35	475	.223	
Q37.c3: Senior campus academic administrators (e.g., Vice- Presidents & above) communicate with faculty about the value of teaching online courses.	.399	1.177	35	475	.228	

Table 4.22.

ANOVA Significance Values for Concerns in Adopting Online Teaching Based on Administrators Support

DV (Stage)	Type III SS	DF	Mean Square	F	Sig.	Eta
Stage 0 Unconcerned	12,402.871	5	2,480.574	2.834	.018	.093
Stage 1 Informational	2,526.821	5	505.364	1.342	.250	.046
Stage 2 Personal	3,030.243	5	606.049	1.268	.281	.044
Stage 3 Management	13,960.161	5	2,792.032	4.226	.001	.132
Stage 4 Consequence	4,491.514	5	898.303	1.179	.322	.041
Stage 5 Collaboration	2,749.744	5	549.949	.764	.577	.027
Stage 6 Refocusing	4,674.218	5	934.844	1.625	.157	.055

As seen in Table 4.22, faculty stage zero (Unconcerned) concerns were influenced [ $F_{(5, 139)} = 2.834, p < .05, \text{partial } \eta^2 = .093$ ] and stage three (Management) [ $F_{(5, 139)} = 4.226, p < .01, \text{partial } \eta^2 = .123$ ] by department administrator support of faculty members who taught online classes.

Post hoc comparisons using the Scheffe test for stage zero (Unconcerned) question indicated that there was a significant difference between those who agreed (N=39) and those who strongly agreed (N=35) to the statement of question 37.a1. The mean difference was 22.885,  $p < .05$ . Post hoc comparisons using the Scheffe test for stage three (Management) question indicated that there was a significant difference between those who were neutral (N=24) and those who strongly agreed (N=35) to the statement of question 37.a1. The mean difference was 29.341,  $p < .05$ . This means that faculty members were focusing on the process and tasks of online teaching and the best use of information and resources. Their concern about or involvement with online teaching was influenced by department administrator support.

*Ho 2.2.* There are no statistically significant differences between faculty college/department affiliation and faculty concerns in adopting online teaching.

*Finding*

One-way MANOVA on the Pillai’s Trace test results (Pillai’s Trace (35, 615) = .266,  $p > .05$ ) did not show a statistically significant difference (Table 4.23). Thus, the participants’ concerns in adopting online teaching were not influenced by their department association. The null hypothesis *Ho 2.2* was accepted.

*Table 4.23.  
Pillai’s Trace Test Results of MANOVA on Stage of Concerns Based on the Department*

<b>Independent Variables</b>	<b>Value</b>	<b>F</b>	<b>df</b>	<b>Error df</b>	<b>Sig.</b>
Department	.266	.989	35	615	.489

*Ho 2.3.* There are no statistically significant differences between faculty academic rank and faculty concerns in adopting online teaching.

*Finding*

One-way MANOVA on the Pillai’s Trace test results (Pillai’s Trace (21, 363) = .150,  $p > .05$ ) did not show a statistically significant difference (Table 4.24). Thus, the participants’ concerns in adopting online teaching were not influenced by their academic rank. The null hypothesis *Ho 2.3* was accepted.

*Table 4.24.  
Pillai’s Trace Test Results of MANOVA on Stages of Concerns Based on Academic Rank*

<b>Independent Variables</b>	<b>Value</b>	<b>F</b>	<b>df</b>	<b>Error df</b>	<b>Sig.</b>
Academic Rank	.150	.910	21	363	.578

***Research Question Three***

*To what extent do full-time faculty’s technographic characteristics (prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology) influence faculty use of technology in teaching?*

In order to determine if there were statistically significant differences in King Abdulaziz University faculty technographic characteristics and faculty use of technology in teaching, MANOVA tests were conducted. When statistically significant differences were found in any of the contextual characteristics, a series of ANOVA tests were conducted to identify values of significance.

***Test Results of Null Hypotheses:***

*Ho 3.1.* There are no statistically significant differences between faculty's prior instructional technology use and faculty use of technology in teaching.

***Finding***

Table 4.25 provides a summary of the Pillai's Trace test results of MANOVA faculty use of technology in teaching based on their prior instructional technology use. One-way MANOVA on the question 51a, 51b, 51c, 59 and 64 Pillai's Trace test results were statistically significant at the  $<.05$  level (Pillai's Trace (24, 284) = .743 ,  $p<.001$ ), (Pillai's Trace (24, 284) = .566,  $p<.01$ ), (Pillai's Trace (18, 210) = .447,  $p<.01$ ), (Pillai's Trace (114, 438) = 1.523,  $p<.05$ ), and (Pillai's Trace (6, 68) =.310,  $p<.001$ ). Thus, the participants' use of technology in teaching was influenced by their prior instructional technology use. Therefore, the null hypothesis *Ho 3.1* was rejected. Tables 4.26, 4.27, 4.28, 4.29 and 4.30 provide the significance values of faculty use of technology in teaching and faculty prior instructional technology use.

Table 4.25.

*Pillai's Trace Test Results of MANOVA on Faculty Use of Technology in Teaching Based on Prior Instructional Technology Use*

<b>Independent Variables</b>	<b>Value</b>	<b>F</b>	<b>df</b>	<b>Error df</b>	<b>Sig.</b>	<b>Eta</b>
Q51a: Please indicate your experience with EMES	.743	2.700	24	284	.000	.186
Q51b: Please indicate your experience with CENTRA	.566	1.950	24	284	.006	.141
Q51c: Please indicate your experience with M-Learning	.447	2.041	18	210	.009	.149
Q51d: Please indicate your experience with DDL-Data Collection System	.366	1.191	24	284	.248	.091
Q51e: Please indicate your experience with the other online teaching systems	.409	1.068	30	360	.374	.082
Q59: Approximately how many computer-technology related professional development hours have you completed/attended in the last two years?	1.523	1.307	114	438	.030	.254
Q60: Have you received any formal training (sponsored by the university) in adopting online teaching for instruction?	.135	1.769	6	68	.119	.135
Q62: Have you received any grants that have supported your use of online teaching systems (EMES, CENTRA, M-Learning, or DDL-Data Collection System)?	.159	2.138	6	68	.060	.159
Q64: Do you have access to personnel (e.g., student assistants, staff) that can help you use any of the online teaching technical support?	.310	5.101	6	68	.000	.310

Table 4.26

ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Prior Instructional Technology Use Q51a

DV (Use of Technology in Teaching)	Type III SS	DF	Mean Square	F	Sig.	Eta
Q52: I use my mobile device to interact with my students through KAU M-Learning system.	1.967	4	.492	.390	.814	.040
Q54: I provide my students with electronic resources (e.g., e-books, lectures, etc.) that can be accessed through mobile devices.	6.309	4	1.577	1.034	.403	.098
Q55: I provide my students with course materials through EMES.	27.362	4	6.841	8.130	.000	.455
Q56: I activate and use most EMES features (e.g., calendar, quizzes, etc.)	20.976	4	5.244	4.482	.004	.315
Q57: I allow my students to interact during live sessions on CENTRA using its tools (e.g., drawing, sharing links, sharing files, etc.)	1.624	4	.406	.431	.785	.041
Q58: I ask my students to use the DDL-Data Collection System to provide feedback regarding the course.	5.286	4	1.322	.601	.664	.058

According to the ANOVA results shown in Table 4.26, there was a significant effect of faculty experience of EMES on their use of its features (e.g., calendar, quizzes, etc.) and course materials at the  $p < .05$  level.

Since the variables are dichotomous in questions 55 and 56, a post hoc test could not be conducted. Therefore, a mean comparison was performed to determine the exact differences. Comparison of the means in question 55 indicated that the mean score for faculty who did not use EMES ( $M = 2.257$ ,  $SD = 1.150$ ) was different from those who had used it for more than three semesters ( $M = 4.796$ ,  $SD = .587$ ). Comparison of the means in question 56 indicated that the mean score for faculty who did not use EMES ( $M = 2.423$ ,  $SD = 1.238$ ) was different from those who had used it for more than three semesters ( $M = 4.538$ ,  $SD = .859$ ).

Table 4.27.

ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Prior Instructional Technology Use Q51b

DV (Use of Technology in Teaching)	Type III SS	DF	Mean Square	F	Sig.	Eta
Q52: I use my mobile device to interact with my students through KAU M-Learning system.	27.218	5	5.444	4.322	.003	.369
Q54: I provide my students with electronic resources (e.g., e-books, lectures, etc.) that can be accessed through mobile devices.	16.063	4	4.016	2.632	.049	.217
Q55: I provide my students with course materials through EMES.	4.975	5	.995	1.183	.335	.132
Q56: I activate and use most EMES features (e.g., calendar, quizzes, etc.)	6.265	5	1.253	1.071	.391	.121
Q57: I allow my students to interact during live sessions on CENTRA using its tools (e.g., drawing, sharing links, sharing files, etc.)	4.849	5	.970	1.030	.413	.114
Q58: I ask my students to use the DDL-Data Collection System to provide feedback regarding the course.	21.293	5	4.259	1.935	.110	.199

According to the ANOVA results shown in Table 4.27, faculty experience of CENTRA had a significant effect on their level of use of mobile devices to interact with students through King Abdulaziz University M-Learning system [ $F_{(5, 139)} = 4.322, p < .01, \text{partial } \eta^2 = .369$ ].

Post hoc comparisons using the Scheffe test for question 51b indicated that there was a significant difference between those who did not use CENTRA (N=59) and those who used it for more than three semesters (N=33) to the statement of question 52. The mean difference was -1.010,  $p < .05$ .

Table 4.28.

ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Prior Instructional Technology Use Q51c

DV (Use of Technology in Teaching)	Type III SS	DF	Mean Square	F	Sig.	Eta
Q52: I use my mobile device to interact with my students through KAU M-Learning system.	41.437	4	10.359	5.777	.000	.145
Q54: I provide my students with electronic resources (e.g., e-books, lectures, etc.) that can be accessed through mobile devices.	3.099	2	1.550	1.015	.372	.051
Q55: I provide my students with course materials through EMES.	4.019	2	2.010	2.388	.105	.109
Q56: I activate and use most EMES features (e.g., calendar, quizzes, etc.)	12.085	2	6.042	5.164	.010	.209
Q57: I allow my students to interact during live sessions on CENTRA using its tools (e.g., drawing, sharing links, sharing files, etc.)	8.811	2	4.405	4.680	.015	.190
Q58: I ask my students to use the DDL-Data Collection System to provide feedback regarding the course.	6.153	2	3.076	1.398	.259	.067

According to the ANOVA results shown in Table 4.28, faculty experience of M-Learning system had a significant effect on their level of use of mobile devices to interact with students through King Abdulaziz University M-Learning system, on their use of EMES features (e.g., calendar, quizzes, etc.), and on their use of CENTRA tools for interaction with their students at the  $p < .05$  level.

Post hoc comparisons using the Scheffe test for question 51c indicated that there was a significant difference between those who did not use King Abdulaziz University M-Learning system (N=123) and those who used it for more than three semesters (N=4) to the statement of question 52 ( $M_{diff} = -2.295$ ,  $p < .05$ ).

The test also showed that there was a significant difference between those who did not use King Abdulaziz University M-Learning system (N=123) and those who used it for two semesters (N=5) to the statement of question 52. ( $M_{diff} = -2.145$ ,  $p < .05$ ).

Table 4.29.

ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Prior Instructional Technology Use Q59

DV (Use of Technology in Teaching)	Type III SS	DF	Mean Square	F	Sig.	Eta
Q52: I use my mobile device to interact with my students through KAU M-Learning system.	38.056	18	2.114	1.678	.090	.450
Q54: I provide my students with electronic resources (e.g., e-books, lectures, etc.) that can be accessed through mobile devices.	48.178	18	2.677	1.754	.072	.454
Q55: I provide my students with course materials through EMES.	27.442	18	1.525	1.812	.060	.455
Q56: I activate and use most EMES features (e.g., calendar, quizzes, etc.)	35.319	18	1.962	1.677	.088	.436
Q57: I allow my students to interact during live sessions on CENTRA using its tools (e.g., drawing, sharing links, sharing files, etc.)	41.341	18	2.297	2.440	.009	.523
Q58: I ask my students to use the DDL-Data Collection System to provide feedback regarding the course.	48.774	18	2.710	1.231	.285	.362

According to ANOVA results shown in Table 4.29, faculty professional development hours in the last two years had a significant effect on their use of CENTRA tools for interaction with their students' tools (e.g., drawing, sharing links, sharing files, etc.) [ $F_{(18, 103)} = 2.440$ ,  $p < .01$ , partial  $\eta^2 = .523$ ].

Post hoc comparisons using the Scheffe test for question 59 indicated that there was a significant difference between those who completed five hours or less computer-technology related professional development hours in the last two years (N=79) and those who completed six to ten hours (N=42) to the statement of question 57.

Table 4.30.

ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Prior Instructional Technology Use Q64

DV (Use of Technology in Teaching)	Type III SS	DF	Mean Square	F	Sig.	Eta
Q52: I use my mobile device to interact with my students through KAU M-Learning system.	.530	1	.530	.421	.521	.011
Q54: I provide my students with electronic resources (e.g., e-books, lectures, etc.) that can be accessed through mobile devices.	.356	1	.356	.233	.632	.006
Q55: I provide my students with course materials through EMES.	.464	1	.464	.551	.462	.014
Q56: I activate and use most EMES features (e.g., calendar, quizzes, etc.)	.416	1	.416	.355	.555	.009
Q57: I allow my students to interact during live sessions on CENTRA using its tools (e.g., drawing, sharing links, sharing files, etc.)	.449	1	.449	.476	.494	.012
Q58: I ask my students to use the DDL-Data Collection System to provide feedback regarding the course.	10.361	1	10.361	4.708	.036	.108

According to the ANOVA results shown in Table 4.30, having access to personnel (e.g., student assistants, staff) that can help in using any of the online teaching technical support had a significant effect on using DDL-Data Collection at the  $p < .05$  level.

Since the variable is dichotomous in question 64, a post hoc test could not be conducted. Therefore, a mean comparison was performed to determine the exact differences. Comparison of the means indicated that the mean score for faculty who have access to personnel (e.g., student assistants, staff) that can help in using any of the online teaching technical support ( $M = 2.96$ ,  $SD = 1.54$ ) was slightly different from that of faculty who did not ( $M = 2.66$ ,  $SD = 1.41$ ).

*Ho 3.2.* There are no statistically significant differences between faculty technology-related professional development and faculty use of technology in teaching.

### *Finding*

Table 4.31 provides a summary of the Pillai's Trace test results of MANOVA faculty use of technology in teaching based on their technology-related professional development needs. One-way MANOVA on the question 45, 49 and 50 Pillai's Trace test results were statistically significant at the  $<.05$  level. Thus, the participants' use of technology in teaching was influenced by their technology-related professional development needs. Therefore, the null hypothesis  $H_0$  3.2 was rejected. Tables 4.32, 4.33, and 4.34 provide the significance values of faculty use of technology in teaching and their technology-related professional development needs.

*Table 4.31.*

*Pillai's Trace Test Results of MANOVA on Faculty Use of Technology in Teaching Based on Technology-Related Professional Development Needs*

<b>Independent Variables</b>	<b>Value</b>	<b>F</b>	<b>Df</b>	<b>Error df</b>	<b>Sig.</b>
Q45: I have an immediate need for more training with curriculum that integrates technology.	.756	1.633	24	168	.039
Q46: I need reliable access to the internet.	.190	.463	18	123	.969
Q47: I need more technical support to support using technology in instruction.	.336	1.345	12	80	.210
Q48: I believe faculty members must have a stronger voice in the professional development program choices and topics.	.254	.969	12	80	.485
Q49: I need regular instructional technology seminars/workshops.	.596	1.696	18	123	.049
Q50: My university's faculty technology professional development plan meets my technology needs.	.852	1.893	24	168	.011
Q61: Would you like a workshop on obtaining a grant to support your use of learning management systems (EMES, CENTRA, M-Learning, or DDL-Data Collection System)?	.244	2.100	6	39	.075
Q63: Would you like a workshop on obtaining a grant to develop an online course?	.193	1.550	6	39.000	.188

Table 4.32.

ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Technology-Related Professional Development Needs Q45

DV (Use of Technology in Teaching)	Type III SS	DF	Mean Square	F	Sig.	Eta
Q52: I use my mobile device to interact with my students through KAU M-Learning system.	6.138	4	1.534	.846	.499	.034
Q54: I provide my students with electronic resources (e.g., e-books, lectures, etc.) that can be accessed through mobile devices.	1.315	4	.329	.163	.956	.007
Q55: I provide my students with course materials through EMES.	8.284	4	2.071	1.016	.403	.040
Q56: I activate and use most EMES features (e.g., calendar, quizzes, etc.)	5.191	4	1.298	.645	.632	.026
Q57: I allow my students to interact during live sessions on CENTRA using its tools (e.g., drawing, sharing links, sharing files, etc.)	2.785	4	.696	.352	.842	.014
Q58: I ask my students to use the DDL-Data Collection System to provide feedback regarding the course.	8.521	4	2.130	.946	.441	.037

According to the ANOVA results shown in Table 4.32, faculty need for more training with curriculum that integrates technology had no significant effect on their use of use of technology in teaching at the  $p < .05$  level.

Table 4.33.

ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Technology-Related Professional Development Needs Q49

DV (Use of Technology in Teaching)	Type III SS	DF	Mean Square	F	Sig.	Eta
Q52: I use my mobile device to interact with my students through KAU M-Learning system.	6.008	4	1.502	.828	.510	.033
Q54: I provide my students with electronic resources (e.g., e-books, lectures, etc.) that can be accessed through mobile devices.	18.342	4	4.585	2.280	.066	.085
Q55: I provide my students with course materials through EMES.	17.846	4	4.462	2.189	.076	.082
Q56: I activate and use most EMES features (e.g., calendar, quizzes, etc.)	20.356	4	5.089	2.528	.045	.094
Q57: I allow my students to interact during live sessions on CENTRA using its tools (e.g., drawing, sharing links, sharing files, etc.)	8.154	4	2.039	1.029	.396	.040
Q58: I ask my students to use the DDL-Data Collection System to provide feedback regarding the course.	11.312	4	2.828	1.256	.292	.049

The ANOVA results shown in Table 4.33, revealed significant effect of faculty needs for regular instructional technology seminars/workshops on their use of EMES features (e.g., calendar, quizzes, etc.) at the  $p < .05$  level. The significance value was .045 with partial  $\eta^2 = .094$ .

Post hoc comparisons using the Scheffe test for question 56 indicated that there was a significant difference between those who strongly agreed (N=73) and those who disagreed (N=8) to the statement of question 49. The mean difference was -1.820,  $p < .05$ .

Table 4.34.

ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Technology-Related Professional Development Needs Q50

DV (Use of Technology in Teaching)	Type III SS	DF	Mean Square	F	Sig.	Eta
Q52: I use my mobile device to interact with my students through KAU M-Learning system.	17.983	4	4.496	2.480	.049	.093
Q54: I provide my students with electronic resources (e.g., e-books, lectures, etc.) that can be accessed through mobile devices.	8.862	4	2.216	1.101	.360	.043
Q55: I provide my students with course materials through EMES.	4.652	4	1.163	.571	.685	.023
Q56: I activate and use most EMES features (e.g., calendar, quizzes, etc.)	10.661	4	2.665	1.324	.266	.051
Q57: I allow my students to interact during live sessions on CENTRA using its tools (e.g., drawing, sharing links, sharing files, etc.)	14.122	4	3.530	1.783	.138	.067
Q58: I ask my students to use the DDL-Data Collection System to provide feedback regarding the course.	6.908	4	1.727	.767	.549	.030

According to the ANOVA results shown in Table 4.34, faculty needs for a technology professional development plan by the university that meets their needs had a significant effect on their use of mobile devices to interact with their students through KAU M-Learning system at the  $p < .05$  level. The significance value was .049 partial  $\eta^2 = .093$ .

Post hoc comparisons using the Scheffe test for question 52 indicated that there was a significant difference between those who disagreed (N=4) and those who strongly agreed (N=29) to the statement of question 50. The mean difference was -1.422,  $p < .05$ .

*Ho 3.3.* There are no statistically significant differences between faculty attitudes toward teaching with technology and faculty use of technology in teaching.

#### *Finding*

Table 4.35 provides a summary of the Pillai's Trace test results of MANOVA faculty use of technology in teaching based on their attitudes toward teaching with technology. One-way

MANOVA on the question 40 Pillai's Trace test results was statistically significant at the  $<.05$  level (Pillai's Trace (24, 384) = .354, partial  $\eta^2=.089$ ). Thus, the participants' use of technology in teaching was influenced by their attitudes toward teaching with technology. The significance values of the Pillai's Trace MANOVA test was .048 at the alpha = .05 level as shown in Table 4.35. Therefore, the null hypothesis  $H_0$  3.3 was rejected. Tables 4.36 provide the significance values of faculty use of technology in teaching and faculty attitudes toward teaching with technology.

Table 4.35.

*Pillai's Trace Test Results of MANOVA on Faculty Use of Technology in Teaching Based on Their Attitudes Toward Teaching with Technology*

<b>Independent Variables</b>	<b>Value</b>	<b>F</b>	<b>df</b>	<b>Error df</b>	<b>Sig.</b>	<b>Eta</b>
Q38: I am interested in learning how to integrate technology into online teaching.	.266	1.141	24	384	.295	.067
Q39: I am interested in learning how to change my pedagogy to be able to teach online.	.236	1.003	24	384	.461	.059
Q40: I believe that online classes would be beneficial to our students.	.354	1.555	24	384	.048	.089
Q41: I need more resources to learn about how to teach online.	.323	1.407	24	384	.098	.081
Q42: I believe that teaching online is not a good way for students to learn.	.254	1.083	24	384	.361	.063
Q43: I am interested in attending workshops on how to teach online classes.	.264	1.131	24	384	.306	.066
Q44: Adopting online teaching requires necessary curriculum reforms.	.228	.967	24	384	.510	.057
Q53: I am not interested in using mobile devices for assignments, reminders, or advising.	.223	.945	24	384	.540	.056

Table 4.36.

ANOVA Significance Values for Faculty Use of Technology in Teaching Based on Their Attitudes Toward Teaching with Technology Q40

DV (Use of Technology in Teaching)	Type III SS	DF	Mean Square	F	Sig.	Eta
Q52: I use my mobile device to interact with my students through KAU M-Learning system.	3.614	4	.904	.434	.784	.013
Q54: I provide my students with electronic resources (e.g., e-books, lectures, etc.) that can be accessed through mobile devices.	4.340	4	1.085	.520	.721	.015
Q55: I provide my students with course materials through EMES.	39.216	4	9.804	4.574	.002	.119
Q56: I activate and use most EMES features (e.g., calendar, quizzes, etc.)	52.753	4	13.188	6.819	.000	.167
Q57: I allow my students to interact during live sessions on CENTRA using its tools (e.g., drawing, sharing links, sharing files, etc.)	43.353	4	10.838	5.986	.000	.149
Q58: I ask my students to use the DDL-Data Collection System to provide feedback regarding the course.	16.086	4	4.022	1.861	.121	.052

According to the ANOVA results shown in Table 4.36, there was a significant effect of faculty beliefs about how beneficial online teaching on their use of EMES features (e.g., calendar, quizzes, etc.) [ $F_{(4, 136)} = 6.819, p < .001, \text{partial } \eta^2 = .167$ ], EMES course materials [ $F_{(4, 136)} = 4.574, p < .01, \text{partial } \eta^2 = .119$ ] and on their use of CENTRA tools (e.g., drawing, sharing links, sharing files, etc.) [ $F_{(4, 137)} = 5.986, p < .01, \text{partial } \eta^2 = .149$ ] partial  $\eta^2 = .167$ ]. Post hoc tests were conducted to determine the exact difference.

Post hoc comparisons using the Scheffe test for question 55 indicated that there was a significant difference between those who strongly agreed (N=54) and those who strongly disagreed (N=7) to the statement of question 40. The mean difference was -1.952,  $p < .05$ .

Post hoc comparisons using the Scheffe test for question 56 indicated that there was a significant difference between those who agreed (N=31) and those who strongly disagreed (N=8) to the statement of question 40. The mean difference was -1.863,  $p < .05$ . The test also indicated

that there was a significant difference between those who strongly agreed (N=53) and those who strongly disagreed (N=8) to the statement of question 40. The mean difference was -2.005,  $p < .05$ . And finally there was a significant difference between those who were neutral (N=34) and those who strongly disagreed (N=8) to the statement of question 40. The mean difference was -2.150,  $p < .05$ .

Post hoc comparisons using the Scheffe test for question 57 indicated that there was a significant difference between those who strongly agreed (N=53) and those who strongly disagreed (N=8) to the statement of question 40. The mean difference was -2.000,  $p < .05$ . The test also indicated that there was a significant difference between those who were neutral (N=34) and those who strongly disagreed (N=8) to the statement of question 40. The mean difference was -1.059,  $p < .05$ .

## **Chapter Summary**

The data in this study were obtained from 147 faculty members of the College of Arts and Humanities at King Abdulaziz University. The data were analyzed using quantitative measures (descriptive data analysis and inferential analysis). Descriptive data analysis revealed that 53.1% of the participants were female and 46.9% were male. Most of the participants were in the age range of 31-40 (31.3%) and 41-50 (28.6%). Most of the faculty members had 1 to 10 years of teaching experience (53.1%) followed by those who had taught from 11 to 20 years (21.8%). Most of the participants were affiliated with the Islamic Studies Department (27.9%). Sociology department participants were the next largest group (17%), followed by the participants from the History department (15.6%). Of the participants, 36.7% were Assistant Professors. Lecturers were the next largest group, with 35.4%. The last group was the Associate Professors, with 21.8%, and 6.1% were Professors.

More than 42% of faculty members thought that King Abdulaziz University administrators recognized the additional workload required to teach online courses. Similarly, 43.6% of the participants thought that the College of Art and Humanity's administrators recognized the additional workload required to teach online. Half of the participants thought that administrators in their departments were supportive of faculty members who taught online classes. On the other hand, 21.1% of the participants thought the opposite regarding the support of the administrators in their departments.

More than half of the participants had used CENTRA for at least one semester in the past, and 48.3% of them had used EMES for at least one semester. Only 11.6% used mobiles for teaching and communicating with their students. 78.2% of the participants indicated that they did not use the DDL-Data Collection System in their teaching. About half of the participants believed that online classes would be beneficial to their students. More than 80% of the participants were highly interested in learning how to integrate technology into online teaching and how to change their pedagogy accordingly. Over half, 59.8%, of the participants thought that they needed more resources to learn how to teach online, and 70.8% of them were highly interested in attending workshops on how to teach online classes. Finally, 52.4% of the participants were interested in using mobile devices for assignments, reminders, or advising.

King Abdulaziz University faculty SoC findings showed a mean score percentile, with 87% of them being Unconcerned. The Informational stage showed a mean score percentile of 72%, and the Personal SoC was the third highest with a mean score percentile of 70%. Refocusing had a mean score percentile of 65% and was the fourth highest SoC. The Collaboration SoC had a mean score percentile of 55%, and the Management SoC had a mean score percentile 52%. Collaboration and Management were the fifth and sixth highest stages of

concern. Consequence SoC had a mean score percentile of 43% and was the lowest stage of concern. The Stages of Concern Questionnaire had concerns that were generally aligned to nonusers or users who sometimes implemented parts of online teaching, with a warning that faculty might be resistant to online teaching or would have negative attitudes toward it.

*Research question one results:* One-way MANOVA test results of the personal characteristics indicated that the participants' concerns in adopting online teaching were not influenced by their age, country of graduation, or years of teaching experience. A statistically significant difference was found in the participants' concerns in adopting online teaching by gender,  $p < .05$ . The significances were found in stage one (Informational) ( $p < .05$ ), stage two (Personal) ( $p < .01$ ), and stage six (Refocusing) ( $p < .001$ ). Therefore, null hypothesis *Ho 1.2* was rejected, and null hypotheses *Ho 1.1*, *Ho 1.3*, and *Ho 1.4* were accepted.

*Research question two results:* One-way MANOVA test results of the contextual characteristics indicated that the participants' concerns in adopting online teaching were not influenced by their department or academic rank. A statistically significant difference was found in the participants' concerns in adopting online teaching based on the administrative support,  $p < .05$ . The significances were found in stages zero (Unconcerned) ( $p < .05$ ) and three (Management) ( $p < .01$ ). Therefore, null hypothesis *Ho 2.1* was rejected, and null hypotheses *Ho 2.2* and *Ho 2.3* were accepted.

*Research question three results:* One-way MANOVA test results of the technographic characteristics indicated a statistically significant influence of their prior instructional technology use and by technology-related professional development on the participants' use of technology in teaching. The significance values were .000, .006, .009, and .030. Therefore, the null hypothesis *Ho 3.1* was rejected. Similarly, a statistically significant difference was found in the

participants' use of technology in teaching based on their prior instructional technology use. The significance values were .039, .049, and .011. Therefore, the null hypothesis *Ho 3.2* was rejected. Finally, a statistically significant difference was found in the participants' use of technology in teaching based on their attitudes toward teaching with technology. The significance value was .048. Therefore, the null hypothesis *Ho 3.3* was rejected.

Table 4.37.  
Result Summary Table

RQ	MANOVA Test Result	Action
<b>Personal Characteristics</b>		
RQ1	<ul style="list-style-type: none"> <li>• Participant concerns in adopting online teaching not influenced by:</li> <li>• <i>age</i>,</li> <li>• <i>country of graduation</i>, or</li> <li>• <i>years of teaching experience</i>.</li> <li>• Significant difference - Participant concerns in adopting online teaching by <i>gender</i>, <math>p &lt; .05</math>.</li> </ul>	<ul style="list-style-type: none"> <li>Ho 1.1 Accepted</li> <li>Ho 1.3 Accepted</li> <li>Ho 1.4 Accepted</li> <li>Ho 1.2 Rejected</li> </ul>
<b>Contextual Characteristics</b>		
RQ2	<ul style="list-style-type: none"> <li>• Participant concerns in adopting online teaching not influenced by</li> <li>• <i>department</i></li> <li>• <i>academic rank</i></li> <li>• Significant difference - Participants' concerns in adopting online teaching and <i>administrative support</i>, <math>p &lt; .05</math>.</li> </ul>	<ul style="list-style-type: none"> <li>Ho 2.3 Accepted</li> <li>Ho 2.2 Accepted</li> <li>Ho 2.1 Rejected</li> </ul>
<b>Technographic Characteristics</b>		
RQ3	<ul style="list-style-type: none"> <li>• Participant use of technology in teaching influenced by</li> <li>• <i>technology-related professional development</i>. Significance values - .000, .006, .009, and .030</li> <li>• Significant difference - participant use of technology in teaching based on <i>prior instructional technology use</i>. Significance values - .039, .049, and .011.</li> <li>• Significant difference - participant use of technology in teaching based on <i>attitudes toward teaching with technology</i>, <math>p &lt; .05</math>.</li> </ul>	<ul style="list-style-type: none"> <li>Ho 3.1 Rejected</li> <li>Ho 3.2 Rejected</li> <li>Ho 3.3 Rejected</li> </ul>

# **Chapter 5 - Summary, Conclusion, and Recommendations for Future Studies**

## **Chapter Overview**

This study sought to provide empirical data that can assist policy makers at King Abdulaziz University in understanding concerns regarding the adoption of online teaching as expressed by faculty and instructors from six departments in the College of Arts and Humanities (History, Geography, Information Science, Sociology and Social Work, Mass Communication, and Islamic Studies). Additionally, it investigated King Abdulaziz University faculty professional development needs in adopting online teaching. These findings can help determine the support and resources that faculty need in order to implement online teaching more effectively.

The theoretical framework used in this study was the Concerns-Based Adoption Model developed by researchers from the University of Texas at Austin (Hord et al., 1987). The Concerns Based Adoption Model provides tools for measuring the process of implementing a change, such as standards-based education reforms. The Concerns-Based Adoption Model incorporates Stages of Concern (SoC) theory, which has been widely used by researchers in and beyond the United States. SoC proposes that teachers usually experience seven gradual stages of concern during the implementation of an innovation, namely: Unconcerned (awareness), Informational, Personal, Management, Consequences, Collaboration, and Refocusing. A survey of closed-ended items explored the following research questions:

1. *What is the relationship between full-time faculty personal characteristics (age, gender, country of graduation, and years of teaching experience) and their concerns in adopting online teaching?*
2. *What type of relationship exists between full-time faculty contextual characteristics (administrative support of technology, college/department, and academic rank) and their concerns in adopting online teaching?*
3. *To what extent do full-time faculty's technographic characteristics (prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology) influence faculty use of technology in teaching?*

This chapter summarizes and discusses the quantitative data analysis and findings. Additionally, recommendations for King Abdulaziz University and for the future studies are presented.

## **Summary**

### ***Personal Characteristics***

This section presents the study respondents' age, gender, country of graduation, and years of teaching experience.

#### ***Age Range***

17.7% of the participants were in the age range of 20-30, 31.3% were in the age range of 31-40, 28.6% were in the age range of 41-50, 15.6% were in the age range of 51-60, and 6.8% were in the age range of 61-70.

### *Gender*

Females comprised 53.1% of the participants, while 46.9% of the participants were male.

### *Country of Graduation*

The majority of the participants (67.3%) obtained their last degree from Arab institutions; 32.7% did so from non-Arab institutions.

### *Years of Teaching Experience*

Those who had taught from one to 10 years comprised the largest group in this study (53.1%). The second largest group was faculty who had taught from 11 to 20 years (21.8%). Faculty who had taught from 21 to 30 years formed the third largest group, at 15.6%, and the smallest group in this study, at 9.5%, was faculty who had taught more than 30 years.

## ***Contextual Characteristics***

The contextual characteristics that factored into this study were administrative support of technology, department association, and academic rank.

### *Administrative Support of Technology*

More than 42% of respondents thought King Abdulaziz University administrators recognized the additional workload required to teach online courses. Similarly, 43.6% of the participants thought that the College of Art's administrators recognized the additional workload required to teach online. Half of the participants thought that administrators in their departments were supportive of faculty members who taught online classes. On the other hand, 21.1% of the participants thought the opposite regarding the support of the administrators in their departments.

### *Department Association*

The largest number of participants (27.9%) was Islamic Studies faculty. The Sociology department was the next most represented, with 17.0%. The remainder of participants came

from History (15.6%), Geography (14.3%), Mass Communication (12.9%), and Information Science (12.2%) departments.

#### *Academic Rank*

Among the 147 participants, 36.7% were Assistant Professors. Lecturers comprised 35.4% of the group, then Associate Professors, with 21.8%, and Professors, with 6.1%.

### ***Technographic Characteristics***

The study's technographic characteristics were prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology.

#### *Prior Instructional Technology Use*

More than half of the participants had used CENTRA for at least one semester in the past, and 48.3% had used EMES for at least one semester. Only 11.6% had used King Abdulaziz University Mobile Learning system (M-Learning) for teaching and communicating with their students. 78.2% of the participants indicated that they had not used the DDL-Data Collection System in their teaching either.

#### *Technology-Related Professional Development*

The data indicated a great need for professional development. The majority, 74.6%, agreed or strongly agreed that faculty members had an immediate need for more training with curriculum that integrates technology. 84.3% agreed or strongly agreed that faculty members needed regular instructional technology seminars/workshops. 41% were unsure if the university's faculty technology professional development plan met their technology needs. 90% agreed or strongly agreed that faculty members must have a stronger voice in the technology professional development program choices and topics. Approximately 80% of the faculty members wanted to have a workshop on obtaining a grant to develop an online course. Finally, a

high percentage of the participants (93.1%) agreed or strongly agreed that they were in need of reliable access to the internet.

### *Attitudes Toward Teaching With Technology*

More than 80% of the participants were highly interested in learning how to integrate technology into online teaching (83.5%) and how to change their pedagogy to be able to teach online (82.1%). Over half, 59.8%, of the participants thought that they needed more resources to learn about how to teach online, and 70.8% of them were highly interested in attending workshops on how to teach online classes. Finally, 52.4% of the participants were interested in using mobile devices for assignments, reminders, or advising.

### *Stages of Concern (SoC)*

The Stages of Concerns Questionnaire had concerns that were generally aligned to nonusers or users who sometimes implemented parts of online teaching, with a warning that faculty might be resistant to online teaching or had negative attitudes toward it. King Abdulaziz University faculty SoC findings ranked as highest the Unconcerned stage followed by Informational, Personal, Refocusing, Collaboration, Management, and Consequence, in order. The high score of the Unconcerned stage indicated that a number of other tasks, innovations, or activities were of concern to King Abdulaziz University faculty in addition to online teaching.

### *Quantitative Measures*

#### *Research Question One*

*What is the relationship between full-time faculty personal characteristics (age, gender, country of graduation, and years of teaching experience) and their concerns in adopting online teaching?*

One-way MANOVA test results of the personal characteristics indicated that the participants' concerns in adopting online teaching were not influenced by their age, country of graduation, or years of teaching experience. A statistically significant difference was found in the participants' concerns in adopting online teaching by gender,  $p < .05$ . The significances were found in stage one (Informational) ( $p < .05$ ), stage two (Personal) ( $p < .01$ ) and stage six (Refocusing) ( $p < .001$ ). Therefore, null hypothesis *Ho 1.2* was rejected, and null hypotheses *Ho 1.1*, *Ho 1.3* and *Ho 1.4* were accepted.

### ***Research Question Two***

*What type of relationship exists between full-time faculty contextual characteristics (administrative support of technology, college/department, and academic rank) and their concerns in adopting online teaching?*

One-way MANOVA test results of the contextual characteristics indicated that the participants' concerns in adopting online teaching were not influenced by their department or academic rank. A statistically significant difference was found in the participants' concerns in adopting online teaching based on the administrative support,  $p < .05$ . The significances were found in stages zero (Unconcerned) ( $p < .05$ ) and three (Management) ( $p < .01$ ). Therefore, null hypothesis *Ho 2.1* was rejected, and null hypotheses *Ho 2.2* and *Ho 2.3* were accepted.

### ***Research Question Three***

*To what extent do full-time faculty's technographic characteristics (prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology) influence faculty use of technology in teaching?*

One-way MANOVA test results of the technographic characteristics indicated that the participants' use of technology in teaching was influenced by their prior instructional technology

use, technology-related professional development, and by their attitudes toward teaching with technology. A statistically significant difference was found in the faculty members' use of technology in teaching and was influenced by their technology-related professional development. The significance values were .000, .006, .009, and .030. Therefore, the null hypothesis *Ho 3.1* was rejected. Similarly, a statistically significant difference was found in the participants' use of technology in teaching based on their prior instructional technology use. The significance values were .039, .049, and .011. Thus, the null hypothesis *Ho 3.2* was rejected. Finally, a statistically significant difference was found in the participants' use of technology in teaching based on their attitudes toward teaching with technology,  $p < .05$ . Hence, the null hypothesis *Ho 3.3* was rejected.

## **Conclusions**

The following conclusions were derived from descriptive statistics and quantitative data. They are organized by research question and provide the implications of the results as they relate to previous studies.

### ***Research Question One***

*What is the relationship between full-time faculty personal characteristics (age, gender, country of graduation, and years of teaching experience) and their concerns in adopting online teaching?*

In a review of descriptive statistics, the following conclusions emerged from the responses to questions 1-35 of the Stages of Concern Questionnaire. The findings indicated no significant difference between age and faculty concerns in adopting online teaching. This finding is consistent with the finding of the Concerns Based Adoption Model author, which is

that age was not considered a predictive variable for innovation adoption (George et al., 2006; Hall et al., 1986). The finding is also consistent with what Hwu (2011), Al-Sarrani (2010), and Atkins & Vasu (2000) found regarding age as not being a predictive factor.

The findings indicated a significant difference between gender and faculty concerns in adopting online teaching. Females expressed a higher degree of concern than males at the Informational, and Personal stages in adopting online teaching. Gender has been found to be non-predictive in SoC studies at the university level in the United States (Hwu, 2011; Petherbridge, 2007). For example, Petherbridge (2007), who studied adoption of a Learning Management System (LMS) in a higher educational environment in the U.S., found no statistically significant gender differences in the SoC scores. Hwu (2011) also found no significant difference between gender and faculty concerns in adopting online teaching. However, studies conducted in Saudi Arabia and in Arabian Gulf countries found that gender does have a significant relationship with one's SoC (Al-Sarrani, 2010; Alshammari, 2000). Al-Sarrani (2010), found that gender had a significant relationship with the stages of concerns (Informational and Collaboration) in Saudi Arabia; where female showed higher concern level at those two stages.

The present study conforms to the results of the studies in Arabian Gulf countries (Pillai's Trace (7, 101) = .155,  $p < .05$ , partial  $\eta^2 = .155$ ). Females expressed a higher degree of concern than males at stage one (Informational) ( $p < .05$ ), and stage two (Personal) in adopting online teaching. The reasons for these differences could be diverse. It is possible that female teachers could be concerned about the inequity in technology facilities in the women's colleges. Most of the higher level administrators of King Abdulaziz University are male, and the new technologies are usually introduced to male faculty first. It is also possible that female teachers' voices are

not heard by the stakeholders regarding the university's important decisions. To address this concern, female teachers should be encouraged to share their opinions regarding the university's online teaching strategy. This difference in concerns may be due to other factors, as well, such as beliefs about gender and women's capabilities. While this is conjecture, further study that is more qualitative in nature is needed to address this issue.

Finally, the findings related to Research Question One indicated no significant differences between faculty concerns in adopting online teaching and country of graduation or years of teaching experience. This finding was consistent with what Al-Sarrani's (2010), which was that participant concerns in adopting blended learning were not influenced by their country of graduation nor by their years of teaching experience.

### ***Research Question Two***

*What type of relationship exists between full-time faculty contextual characteristics (administrative support of technology, college/department, and academic rank) and their concerns in adopting online teaching?*

Hall and Hord (2010) found that certain conditions, such as administrative support, associated with implementation efforts were more likely to be predictive of concerns than traditional demographic variables (e.g., age and gender). The findings that address Research Question Two show a significant relationship (Pillai's Trace (35, 475) = .495, with partial  $\eta^2=.099$ ) between administrative support of technology and participants' concerns in adopting online teaching ( $p<.05$ ). Only departmental administrative support was found to be predictive of faculty stages of concerns in adopting online teaching. ANOVA results indicated that departmental administrative support of teaching and learning with technology was predictive of faculty's Unconcerned and Management concern scores (stage zero,  $p<.05$  and stage three,

$p < .01$ ). This finding is similar to that of Hwu (2011), who found that perceived academic administrative support was predictive of faculty Consequence concerns score (stage four,  $p < .05$ ) and Refocusing concerns score (stage six,  $p < .01$ ). Petherbridge (2007) also found that perceived academic administrative support was predictive of faculty's Management concerns score (stage three).

Descriptive statistics on survey questions regarding departmental administrative support of technology indicated that half of the participants (50.3%) thought that administrators in their departments are supportive of faculty members who taught online classes, though 21.1% of the participants either disagreed or disagreed strongly that the administrators in their departments were supportive. Some faculty (11.57%) selected "don't know" for the last three questions regarding the support of the administrators at the department level. These findings display that the greater the perceived departmental support, the greater the involvement with online teaching. Therefore, it is necessary for administrators at higher levels (College administrators and Senior campus academic administrators) to recognize the additional workload required to teach online courses as well as to communicate with faculty about the value of teaching online courses. Dusick (1998) found that "although the teacher may have control over some environmental factors (classroom setup, for example), a supportive administrative staff and support staff, are critical to encouraging the adoption of innovation" (p. 131).

The findings of Research Question Two indicated no significant difference between department association and faculty concerns in adopting online teaching. This finding is consistent with Hwu's (2011) conclusion that department association was non-predictive. The findings also indicated no significant difference between academic rank and faculty concerns in adopting online teaching. This finding aligns with Al-Sarrani's (2010) assessment of rank as

being non-predictive. Alharbi (2002) found that faculty members in Saudi Arabia had positive attitudes toward the implementation of online courses and that among the major barriers preventing faculty from adopting online courses were lack of technical and administrative support and incentives.

### ***Research Question Three***

*To what extent do full-time faculty's technographic characteristics (prior instructional technology use, technology-related professional development, and attitudes toward teaching with technology) influence faculty use of technology in teaching?*

The findings of Research Question Three indicated statistically significant differences between faculty prior instructional technology use and faculty use of technology in teaching. Faculty members who had used EMES for more than three semesters were more likely to use most EMES features (e.g., calendar, quizzes, etc.) and to provide their students with course material ( $p < .001$  and  $.004$ ). Moreover, faculty members who had used CENTR for more than three semesters were more likely to interact with their students through the King Abdulaziz University M-Learning system ( $p < .001$ ).

The data also showed that completed computer-technology related professional development hours significantly affect technology use ( $p < .01$ , partial  $\eta^2 = .523$ ). George, Hall, and Stiegelbauer (2006) argued that professional development was the most important among the demographic variables in determining concerns about an innovation adoption. The descriptive statistics indicated that 68% of the participants had participated in fewer than 10 hours of computer technology related professional development in the last two years. The results of question 49 indicate that 84.3% agreed or strongly agreed that faculty members need regular instructional technology seminars/workshops. This finding corresponds with the findings of

Hwu (2011), Al-Sarrani (2010), Petherbridge (2007), Adams (2002), and Atkins and Vasu (2000). Adams (2002) found a significant positive correlation between the amount of professional development courses taken and positive attitudes toward using the technology in teaching.

Hwu (2011), who found a significant relationship ( $\text{sig} = .020$ ) between technology-related professional development and faculty use of technology in teaching, argued for more accessible training opportunities and professional development in order for faculty to adopt online learning. Rogers (2000) said that there was need for a major “shift from teaching to learning, which requires adequate training in technology and learning styles” (p. 19). Petherbridge (2007) stated that “faculty members will need a variety of professional development activities in order to move beyond intrinsic concerns associated with using a new innovation, achieving the ideal concerns area of impact consequence and impact-collaboration” (p. 246). The findings of this study represent clearly the importance of providing more training opportunities, as well as giving faculty a stronger voice in the technology professional development program choices and topics. It is also important to develop training programs for administrators in order to increase their support of faculty who teach online.

Finally, findings from Research Question Three demonstrate a statistically significant difference in the participants’ use of technology in teaching based on their attitudes toward teaching with technology ( $p < .05$ ). ANOVA results revealed that faculty beliefs about online teaching’s benefits resulted in statistically significant differences in their use of EMES features (e.g., calendar, quizzes, etc.) ( $p < .01$ , partial  $\eta^2 = .199$ ), EMES course materials ( $p < .001$ , partial  $\eta^2 = .167$ ) and CENTRA tools (e.g., drawing, sharing links, sharing files, etc.) ( $p < .001$ , partial  $\eta^2 = .149$ ).

These results were consistent with the findings of the reviewed literature (Hwu, 2011; Al-Sarrani, 2010; Petherbridge, 2007). Hwu (2011) found a statistically significant difference ( $p < .001$ ) in the participants' use of online teaching in teaching and their attitudes toward teaching with technology. Al-Sarrani (2010) found that in Saudi Arabia participant use of technology in teaching was influenced by their attitudes towards technology integration in the science curriculum ( $p < .05$ ). Most, or 83.5%, of the participants were highly interested in learning how to integrate technology into online teaching, and 82.1% of the participants are highly interested in learning how to change their pedagogy to be able to teach online. This finding indicates that the participants had generally positive attitudes toward online teaching. The tailing up in stage six (Refocusing) suggests that participant resistance to online teaching was due to lack of knowledge and professional development and not lack of interest.

### **Recommendations for King Abdulaziz University**

The current research was undertaken in order to better understand what types of professional development and/or support faculty may need, depending on their concerns, to successfully adopt online teaching. The following recommendations are based on the study's findings and may help King Abdulaziz University with their adoption process:

1. *Professional development*: George, Hall, and Stiegelbauer (2006) stated that professional development was the most important of the demographic variables in determining concerns about an innovation adoption. The findings of this study represented, clearly, the importance of training opportunities. Thus, to increase impact-consequence and impact-collaboration concerns among faculty and instructors in the College of Arts and Humanities at King Abdulaziz University, a corresponding increase is needed in the amount of training in how to integrate technology with curriculum. It is also important to

give faculty a stronger voice in the technology professional development program choices and topics. Finally, performing an educational technology needs assessment to provide baseline data and direction for training is highly recommended.

2. *EMES and CENTRA professional development and workshops*: The data showed that faculty members who were experienced with EMES or CENTRA were more likely to use most EMES features (e.g., calendar, quizzes, etc.) ( $p < .001$ ), to use it to disseminate course material ( $p < .01$ ), and to interact with their students through the KAU M-Learning system ( $p < .001$ ). According to Hall and Hord (1987), it is important to provide clear and accurate information about the innovation, using a variety of means; then, gradually, the amount of information offered can be increased. Therefore, an appropriate intervention strategy might be as follows: First, information must be provided about EMES and CENTRA and how to use them effectively for online teaching via "one-legged interviews" (a change intervention used to informally monitor a teacher's progress in putting an innovation into practice (Hall & Hord, 2010), e-mail, brochures, short media presentations, and workshops; Second, faculty need to know the purposes and uses of these two systems in addition to the other online learning systems provided by the Deanship of Distance Education at King Abdulaziz University (e.g., M-Learning, DDL-Data Collection System, E-Exam System, or E-SCRS).
3. *Administrator training*: It is also important to develop training programs for administrators, in order to increase their support of faculty who teach online. Dusick (1998) stated that "a supportive administrative staff and support staff are

critical to encouraging the adoption of innovation” (p. 131). The data showed that administrator support highly affected faculty management concerns ( $p < .01$ ).

4. *Learning environment and teaching method*: Online teaching is an instructional innovation that can provide personalized and student-centered instruction. Volery (2000) stated that in the online teaching environment the role of teacher should be shifted “from intellect-on-stage and mentor towards a learning catalyst” (pp. 222-223). This new role requires King Abdulaziz University faculty to be trained in using the designated software, managing online course, integrating web sources, and interacting with students through the web (Ko & Rossen, 1998). Worley and Tesdell (2009) found that to create a successful online teaching environment, the teacher might need to take new roles, such as online course designer, manager, technology expert, [and] learning-management-system manager” (p. 139). A teacher cannot fulfill all of these roles without proper training and support.
5. *Financial support for adopting online teaching*: The data showed that 70% of the faculty members had not received any grants to support the adoption of online teaching. Eighty percent of the faculty members would have liked to have a workshop on obtaining a grant to develop an online course. The need for addressing faculty compensation is recognized in the literature (Hwu, 2011; Allison & Scott, 1998; Hall & Hord, 1987). Alharbi (2002) found that the major barriers preventing faculty from the adoption of online teaching in Saudi Arabia was the lack of incentives (Alharbi, 2002). These financial incentives could be used to buy necessary equipment, or perhaps more importantly, “release time, may be the carrot that entices some faculty to integrate technology into instruction” (Petherbridge, 2007, p. 267).

6. *Technical support*: Comprehensive technical support available 24/7 for King Abdulaziz University faculty members is needed. The results of this study showed a high significance ( $p < .001$ ) between faculty use of technology in teaching and having access to personnel (e.g., student assistants, staff) that can help with any of the online teaching systems.
7. *Gender equity*: The findings indicated a significant difference between gender and faculty concerns in adopting online teaching. This findings echo those found by Al-Sarrani (2010). Since females comprised 53.1% of the participants, while 46.9% of the participants were male in this study, a significant percentage of King Abdulaziz University teaching faculty may be impacted by these differences. Thus, further study that is more qualitative in nature is needed to address gender equity issues on access to and use of technology.
8. *Internet connections*: A high percentage of the participants (93.1%) agreed or strongly agreed that they are in need of reliable access to the internet. Thus, for successful implementation of online teaching at King Abdulaziz University, internet access should be available for both faculty members as well as for students.

### **Recommendations for Future Studies**

Although a large body of research exists on both educational reform and the Stages of Concern, limited research on adopting online teaching in Saudi Arabia has been conducted.

Based on the findings of this study, opportunities for further investigation include:

1. This study was limited to six departments in the College of Arts and Humanities at King Abdulaziz University, Jeddah, Saudi Arabia. This study should be replicated in other Saudi Universities so that the results may be more generalizable.

2. A study should investigate the relationship between professional development programs and the adoption of online teaching.
3. In general, there is a lack of qualitative studies regarding online education in Saudi Arabia. A qualitative study would provide more insight into how to motivate and reward faculty in adopting online teaching, since the country needs it. Such a study would add to the literature and would be valuable to the decision maker (Saudi Ministry of Higher Education) planning to adopt online teaching and other educational technologies. Qualitative research is also needed to evaluate the benefits of specific interventions and professional training programs regarding online teaching.
4. There is a need to explore the types of professional development may be most effective for promoting excellence in online teaching in Saudi Arabia. More research is needed that compares different professional development approaches for their impact on faculty tasks and concerns.
5. The findings on gender differences in this study echo those found by Al-Sarrani (2010). Since females comprised 53.1% of the participants, while 46.9% of the participants were male in this study, a significant percentage of the university teaching faculty may be impacted by these differences. Future studies should be conducted to learn more about how gender differences may affect women faculty's access to and use of technology for online teaching.
6. According to Peters (2002), the online learning environment "has experienced the strong influence of constructivist learning theory and a paradigm shift from teacher-controlled to learner-centered instruction" (as cited in Zhang & Kenny, 2010, p. 2). Thus, studies are

needed that investigate the best way to endorse a constructivist, and student-centered learning environment in Saudi Arabia.

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## Appendix A - KSU IRB Approval



University Research Compliance Office

TO: Rosemary Talab  
Curriculum & Instruction  
226 Bluemont

Proposal Number: 6486

FROM: Rick Scheidt, Chair   
Committee on Research Involving Human Subjects

DATE: 12/06/2012

RE: Proposal Entitled, "The concerns and professional development needs of faculty and King Abdul-Aziz University in Saudi Arabia in adopting online learning."

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written - and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, 45 CFR §46.101, paragraph b, category: 2, subsection: ii.

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

## **Appendix B - Letter of Consent**

### **Informed Consent Form**

#### **SURVEY PURPOSE**

This survey is given to King Abdulaziz University faculty members who are willing to share their opinion in the study's focus topics. This survey aims to investigate participants concerns regarding the adoption of online teaching in six departments in the College of Arts and Humanities at King Abdulaziz University (History, Geography, Information Science, Sociology and Social Work, Mass Communication, and Islamic Studies). Additionally, it will investigate King Abdulaziz University faculty professional development needs in adopting online teaching. Participation in this survey is totally voluntarily and participant can quite any time or skip any question. Participation is anonymous and responses will only be used for the research purposes of this study.

#### **SURVEY PROCEDURES AND LENGTH OF STUDY**

If you agree to participate, you will be asked to response to the survey items that include closed-ended questions and an open item, at the end of each section, to give participants more freedom to add more information not covered in the closed-ended questions. Completing this paper-and-pencil mail survey will require about 20-25 minutes to response.

#### **RISKS**

There are no foreseeable risks for participating in this survey.

#### **BENEFITS**

Even though, there are no direct benefits to you as a participant; however, King Abdulaziz University's successful adoption of online teaching would provide college-level Saudi students with learning environment that better serves their learning needs. Also, I believe the findings will help give direction to adopt online teaching in your department, particularly in addressing the professional development needs of faculty members in technology integration in teaching in the university.

#### **CONFIDENTIALITY**

The data in this study will be confidential to the researcher. Moreover, participation will be anonymous and there is no personal information will be asked.

#### **PARTICIPATION**

Your participation is voluntary, and you may withdraw from the study at any time and for any

reason. If you decide not to participate or if you withdraw from the study, there is no penalty or loss of benefits to which you are otherwise entitled. There are no costs to you or any other party.

#### CONTACT

If you have any question or concern regarding this survey, please contact the study supervisor:  
Dr. Rosemary Talab at: [talab@ksu.edu](mailto:talab@ksu.edu)

#### CONSENT

The Kansas State University Institutional Review Board waives the requirement for a signature on this consent form, below, if you check the appropriate box and print your name.

CONSENT I, \_\_\_\_\_, have read this form and agree to voluntarily participate in this research study. My name and all personal information will be confidential.

The Kansas State University Institutional Review Board has waived the requirement for a signature on this consent form. However, if you wish to sign a consent, please contact Rosemary Talab at 785-532-5716 or via e-mail at [talab@ksu.edu](mailto:talab@ksu.edu) for a consent form.

I give consent to participate in this study.

I do NOT give consent to participate in this study.

# Appendix C - Southwest Educational Development Laboratory

## License Agreement



### SEDL License Agreement

To: Kamal Bakor (Licensee)  
2159 Prairie Glen Pl.  
Manhattan, KS 66502

From: Nancy Reynolds  
Information Associate  
SEDL  
Information Resource Center-Copyright Permissions  
4700 Mueller Blvd.  
Austin, TX 78723

Subject: License Agreement to reprint and distribute SEDL materials

Date: October 18, 2012

Thank you for your interest in using the **Stages of Concern Questionnaire** (SoCQ 075) published by SEDL in *Measuring Implementation in Schools: The Stages of Concern Questionnaire* written by Archie A. George, Gene E. Hall, and Suzanne M. Stiegelbauer in 2006, as Appendix A, pages 79-82; it is also available in electronic format as SEDL's *Stages of Concern Questionnaire (SoCQ) Online* (which can be purchased on the SEDL website at <http://www.sedl.org/pubs/catalog/items/cbam21.html>) and in the book *Taking Charge of Change*, revised ed., published in 2006 and written by Shirley M. Hord, William L. Rutherford, Leslie Huling, and Gene E. Hall, on pages 48-49.

SoCQ 075 will be referred to as the "work" in this permission agreement. SEDL is pleased to grant permission for use of the work cited above by the Licensee in a dissertation titled *The Concerns and Professional Development Needs of Faculty at King Abdul-Aziz University in Saudi Arabia In Adopting Online Learning* at Kansas State University in Manhattan, KS. The following are the terms, conditions, and limitations governing this limited permission to reproduce the work:

1. All reprinting and distribution activities shall be solely in the media in which the work has been made available for your use, *i.e.*, copy made from a print copy or SEDL's SoCQ Online version, and shall be used for educational, non-profit use only. Precise compliance with the following terms and conditions shall be required for any permitted reproduction of the work described above.
2. No adaptations, deletions, or changes are allowed with the exceptions of substituting the words "the innovation" with a word or phrase that participants will recognize, such as the name of the innovation or initiative, and adding questions to identify demographic indicators of participants before or after the instrument, but otherwise, the wording and order of items cannot be changed. No derivative work based on or incorporating the work will be created without the prior written consent of SEDL.

Voice: 800-476-6861

Fax: 512-476-2286

[www.sedl.org](http://www.sedl.org)

4700 MUELLER BLVD., AUSTIN, TX 78723

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6. This License Agreement to reproduce the work is limited to the terms hereof and is personal to the person and entity to whom it has been granted; and it may not be assigned, given, or transferred to any other person or entity.
7. SEDL is not charging the Licensee a copyright fee to use the work.

I'm e-mailing you a PDF of this agreement. Please print and sign one copy below, indicating that you understand and agree to comply with the above terms, conditions and limitations, and send the original back to me. If you wish to keep a copy with original signatures, please also print, sign, and return a second copy and, after I receive and sign it, I'll return it with both of our signatures to you.

Thank you, again, for your interest in using SEDL's **Stages of Concern Questionnaire**. If you have any questions, please contact me at 800-476-6861, ext. 6548 or 512-391-6548, or by e-mail at [nancy.reynolds@sedl.org](mailto:nancy.reynolds@sedl.org).

Sincerely,

\_\_\_\_\_  
Nancy Reynolds for SEDL

\_\_\_\_\_  
Date signed

Agreed and accepted:

Signature: \_\_\_\_\_

\_\_\_\_\_  
Date signed

## Appendix D - The Survey

### Invitation to Survey Participants

Dear Colleague,

My name is Bakor Kamal, and I am a Ph.D. candidate in the Department of Curriculum and Instruction, College of Education, Kansas State University. I am seeking your help in a survey of Concerns and Professional Development Needs of Faculty at King Abdul-Aziz University in Saudi Arabia in Adopting Online Teaching. This study is being conducted as research for my dissertation. This study will investigate the concerns of faculty at King Abdul-Aziz University, Saudi Arabia, in adopting online teaching. This study will also investigate King Abdul-Aziz University faculty's professional development needs in adopting online teaching. I believe the findings will help give direction to adopting online teaching in the College of Arts and Humanities faculty, particularly in addressing the professional development needs of faculty members in technology integration in teaching.

Your response to this survey will be appreciated. It will take approximately 20 minutes to complete the survey. Your participation is voluntary, and therefore you may discontinue participation at any time without penalty. By agreeing to complete the survey, I will assume your agreement to participate in this study.

The confidentiality of your responses is an ethical issue I will respect in this study. Your professional and personal information is required in anonymous form to protect your individual identity and privacy.

If you have any questions regarding this study or the survey, please contact the researcher, Bakor Kamal, at [bakor@ksu.edu](mailto:bakor@ksu.edu) Cell: 1-541-968-4422, or Dr. Talab, the researcher's Major Professor, at [talab@ksu.edu](mailto:talab@ksu.edu).

Thank you for taking time to complete this task and for your assistance.

Kind Regards,

Bakor A. Kamal  
PhD Student  
Department of Curriculum and Instruction  
Kansas State University

## Section I: Concerns about the Innovation

Questions 1 – 35, reprinted with permission of the Southwest Educational Developmental

Laboratory

The purpose of this questionnaire is to determine what people who are using or thinking about using various programs are concerned about at various times during the adoption process. The items were developed from typical responses of school and college teachers who ranged from no knowledge at all about various programs to many years' experience using them. Therefore, **many of the items on this questionnaire may appear to be of little relevance or irrelevant to you at this time.** For the completely irrelevant items, please circle "0" on the scale. Other items will represent those concerns you do have, in varying degrees of intensity, and should be marked higher on the scale.

For example:

This statement is very true of me at this time.	0 1 2 3 4 5 6(7)
This statement is somewhat true of me now	0 1 2 3(4) 5 6 7
This statement is not at all true of me at this time.	0(1) 2 3 4 5 6 7
This statement is irrelevant to me	(0) 1 2 3 4 5 6 7

Please respond to the items in terms of *your present concerns*, or how you feel about your involvement with **Online Teaching**. Online Teaching is an open and distributed learning environment that uses pedagogical tools, enables by web-based technologies (EMES, CENTRA, M-Learning, DDL-Data Collection System), to facilitate learning and knowledge building through meaningful action and interaction.

Since the \*first\* part of this questionnaire is used for a variety of innovations, the name "**Online Teaching**" does not appear. However, phrases such as "the innovation," "this approach," and "the new system" all refer to **Online Teaching**.

Remember to respond to each item in terms of your present concerns about your involvement or potential involvement with **Online Teaching**.

Thank you for taking time to complete this task.

0	1	2	3	4	5	6	7
Irrelevant	Not true of me now		Somewhat true of me now			Very true of me now	

Circle One Number For Each Item

1. I am concerned about students' attitudes toward the innovation.	0	1	2	3	4	5	6	7
2. I now know of some other approaches that might work better.	0	1	2	3	4	5	6	7
3. I am more concerned about another innovation.	0	1	2	3	4	5	6	7
4. I am concerned about not having enough time to organize myself each day.	0	1	2	3	4	5	6	7
5. I would like to help other faculty in their use of the innovation.	0	1	2	3	4	5	6	7
6. I have a very limited knowledge of the innovation.	0	1	2	3	4	5	6	7
7. I would like to know the effect of reorganization on my professional status.	0	1	2	3	4	5	6	7
8. I am concerned about conflict between my interests and my responsibilities.	0	1	2	3	4	5	6	7
9. I am concerned about revising my use of the innovation.	0	1	2	3	4	5	6	7
10. I would like to develop working relationships with both our faculty and outside faculty using this innovation.	0	1	2	3	4	5	6	7
11. I am concerned about how the innovation affects students.	0	1	2	3	4	5	6	7
12. I am not concerned about the innovation at this time.	0	1	2	3	4	5	6	7
13. I would like to know who will make the decisions in the new system.	0	1	2	3	4	5	6	7
14. I would like to discuss the possibility of using the innovation.	0	1	2	3	4	5	6	7
15. I would like to know what resources are available if we decide to adopt the innovation	0	1	2	3	4	5	6	7
16. I am concerned about my inability to manage all that the innovation requires.	0	1	2	3	4	5	6	7
17. I would like to know how my teaching or administration is supposed to change.	0	1	2	3	4	5	6	7
18. I would like to familiarize other departments or persons with the progress of this new approach.	0	1	2	3	4	5	6	7

<b>0</b> Irrelevant	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b> Very true of me now
Not true of me now			Somewhat true of me now				

Circle One Number For Each Item

19. I am concerned about evaluating my impact on students.	0	1	2	3	4	5	6	7
20. I would like to revise the innovation's approach.	0	1	2	3	4	5	6	7
21. I am preoccupied with things other than the innovation.	0	1	2	3	4	5	6	7
22. I would like to modify our use of the innovation based on the experiences of our students.	0	1	2	3	4	5	6	7
23. I spend little time thinking about the innovation.	0	1	2	3	4	5	6	7
24. I would like to excite my students about their part in this approach.	0	1	2	3	4	5	6	7
25. I am concerned about time spent working with nonacademic problems related to the innovation.	0	1	2	3	4	5	6	7
26. I would like to know what the use of the innovation will require in the immediate future.	0	1	2	3	4	5	6	7
27. I would like to coordinate my efforts with others to maximize the innovation's effects.	0	1	2	3	4	5	6	7
28. I would like to have more information on time and energy commitments required by the innovation.	0	1	2	3	4	5	6	7
29. I would like to know what other faculty are doing in this area.	0	1	2	3	4	5	6	7
30. Currently, other priorities prevent me from focusing my attention on the innovation.	0	1	2	3	4	5	6	7
31. I would like to determine how to supplement, enhance, or replace the innovation.	0	1	2	3	4	5	6	7
32. I would like to use feedback from students to change the program.	0	1	2	3	4	5	6	7
33. I would like to know how my role will change when I am using the innovation.	0	1	2	3	4	5	6	7
34. Coordination of tasks and people is taking too much of my time.	0	1	2	3	4	5	6	7
35. I would like to know how the innovation is better than what we have now.	0	1	2	3	4	5	6	7

36. Provide your comments and/or concerns about online teaching in the space below. If there is not enough space for your comments, then write on the back as well:

**Section II: Administrative Support for Teaching Online Classes**

37. Please indicate your agreement with the following statements by circling your response, with “1” indicating a strong disagreement and “5” indicating a strong agreement. Mark "don't know" only if you feel you simply cannot provide an opinion regarding the question.

	1	2	3	4	5	DK
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Don't Know
<b>a1.</b> Administrators in my department are supportive of faculty members who teach online classes.	1	2	3	4	5	DK
<b>a2.</b> Administrators in my department recognize the additional workload required to teach online classes.	1	2	3	4	5	DK
<b>a3.</b> Administrators in my department communicate with faculty about the value of teaching online classes.	1	2	3	4	5	DK
<b>b1.</b> Administrators in my college are supportive of faculty members who teach online courses.	1	2	3	4	5	DK
<b>b2.</b> Administrators in my college recognize the additional workload required to teach online courses.	1	2	3	4	5	DK
<b>b3.</b> Administrators in my college communicate with faculty about the value of teaching online courses.	1	2	3	4	5	DK
<b>c1.</b> Senior campus academic administrators (e.g., Vice-Presidents & above) are supportive of faculty members who teach online courses.	1	2	3	4	5	DK
<b>c2.</b> Senior campus academic administrators (e.g., Vice- Presidents & above) recognize the additional workload required to teach online courses.	1	2	3	4	5	DK
<b>c3.</b> Senior campus academic administrators (e.g., Vice- Presidents & above) communicate with faculty about the value of teaching online courses.	1	2	3	4	5	DK

### **Section IV: Attitudes Toward Teaching Online**

*Please circle the option that best reflects how you feel about each of the following statements.*

Rating Scale: Strongly Agree (SA = 5), Agree (A = 4), Neutral (N = 3), Disagree (D = 2), Strongly Disagree (SD = 1)

<b>Statement</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
<b>38.</b> I am interested in learning how to integrate technology into online teaching.	5	4	3	2	1
<b>39.</b> I am interested in learning how to change my pedagogy to be able to teach online.	5	4	3	2	1
<b>40.</b> I believe that online classes would be beneficial to our students.	5	4	3	2	1
<b>41.</b> I need more resources to learn about how to teach online.	5	4	3	2	1
<b>42.</b> I believe that teaching online is not a good way for students to learn.	5	4	3	2	1
<b>43.</b> I am interested in attending workshops on how to teach online classes.	5	4	3	2	1
<b>44.</b> Adopting online teaching requires necessary curriculum reforms.	5	4	3	2	1

### **Section IV: Professional Development Needs and Prior Instructional Technology Use**

*Please circle the option that best reflects how you feel about each of the statements.*

Rating Scale: Strongly Agree (SA = 5), Agree (A = 4), Neutral (N = 3), Disagree (D = 2), Strongly Disagree (SD = 1)

<b>Statement</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
<b>45.</b> I have an immediate need for more training with curriculum that integrates technology.	5	4	3	2	1
<b>46.</b> I need reliable access to the internet.	5	4	3	2	1
<b>47.</b> I need more technical support to support using technology in instruction.	5	4	3	2	1
<b>48.</b> I believe faculty members must have a stronger voice in the professional development program choices and topics.	5	4	3	2	1
<b>49.</b> I need regular instructional technology seminars/workshops.	5	4	3	2	1
<b>50.</b> My university's faculty technology professional development plan meets my technology needs.	5	4	3	2	1

**51.** Please indicate your experience with the following online teaching tools by:

- a. Checking the system you primarily use as the entry point for students to conduct or supplement your courses (that is, where do you send your students \*first\* to access Web-based resources if you use these systems?).
- b. Indicating the number of semesters you have used a particular system (column

B).

If you have not used a particular system, please select **None**.

	A. System	B. Check the system you primarily use as the entry point for your students.
<input type="checkbox"/>	EMES	
<input type="checkbox"/>	CENTRA	
<input type="checkbox"/>	M-Learning	
<input type="checkbox"/>	DDL-Data Collection System	
<input type="checkbox"/>	Other (Please describe):	
<input type="checkbox"/>	None - I don't use any online teaching tool	

Please circle the option that best reflects how you feel about each of the statements.

Rating Scale: Strongly Agree (SA = 5), Agree (A = 4), Neutral (N = 3), Disagree (D = 2), Strongly Disagree (SD = 1)

Statement	SA	A	N	D	SD
52. I use my mobile device to interact with my students through KAU M-Learning system.	5	4	3	2	1
53. I am not interested in using mobile devices for assignments, reminders, or advising.	5	4	3	2	1
54. I provide my students with electronic resources (e.g., e-books, lectures, etc.) that can be accessed through mobile devices.	5	4	3	2	1
55. I provide my students with course materials through EMES.	5	4	3	2	1
56. I activate and use most EMES features (e.g., calendar, quizzes, etc.)	5	4	3	2	1
57. I allow my students to interact during live sessions on CENTRA using its tools (e.g., drawing, sharing links, sharing files, etc.)	5	4	3	2	1
58. I ask my students to use the DDL-Data Collection System to provide feedback regarding the course.	5	4	3	2	1

59. Approximately how many computer-technology related professional development hours have you completed/attended in the last two years? Please write your response on the line. (Note: computer-technology related professional development hours may include workshops, seminars, programs, institutes, or conferences that you have attended.)

\_\_\_\_\_

60. Have you received any formal training (sponsored by the university) in adopting online teaching for instruction?

YES       NO

61. Would you like a workshop on obtaining a grant to support your use of learning management systems (EMES, CENTRA, M-Learning, or DDL-Data Collection System)?

YES       NO



**Section V: Demographic Information.**

<b>67. Age</b>	
<b>68. Gender</b>	<input type="checkbox"/> Male <input type="checkbox"/> Female
<b>69. Country of Graduation</b>	<input type="checkbox"/> Arab country <input type="checkbox"/> Non-Arab country ( <i>Please identify country</i> ) *Country: _____
<b>70. Years of Teaching Experience</b>	
<b>71. Department</b>	
<b>72. Academic Rank</b>	<input type="checkbox"/> Professor <input type="checkbox"/> Associate Professor <input type="checkbox"/> Assistant Professor <input type="checkbox"/> Lecturer

## Appendix E - The Arabic Survey

بسم الله الرحمن الرحيم

سعادة عضو هيئة التدريس بكلية الآداب و العلوم الإنسانية بجامعة الملك عبدالعزيز حفظكم الله

السلام عليكم ورحمة الله وبركاته، وبعد:

فأنا أحد المبتعثين في برنامج الملك عبد الله للابتعاث الخارجي؛ للحصول على درجة الدكتوراة بمشيئة الله تعالى في تقنيات التعليم بجامعة كانساس الحكومية Kansas State University في الولايات المتحدة الأمريكية . أرجو مساعدتي في تعبئة هذه الاستبانة المرفقة ، والتي تختص بدراستي لإتمام متطلبات الحصول على درجة الدكتوراه، وعنوانها:

"مخاوف واحتياجات التطوير الاحترافي لأعضاء هيئة التدريس بجامعة الملك عبدالعزيز لتبني التعليم عن بعد"

**"The Concerns and Professional Development Needs of Faculty at King Abdul-Aziz**

**University in Saudi Arabia in Adopting Online Teaching"**

هذه الدراسة ستقوم بمعرفة وتحديد مخاوف أعضاء هيئة التدريس بكلية الآداب و العلوم الإنسانية من تبني التعليم عن بعد في التدريس ، كما ستقوم - أيضاً - بتحديد احتياجات التطوير المهني لأعضاء هيئة التدريس ، لتبني وتطبيق التعليم عن بعد في التدريس .

إنّ نتائج هذه الدراسة سوف تساعد - بمشيئة الله - على إيجاد طريقة مناسبة تساعد أعضاء هيئة التدريس على تبني التعليم عن بعد في جامعة الملك عبدالعزيز ، وتقديم برامج التطوير المهني الضرورية لهم؛ لدمج التقنية الحديثة بالتدريس في التدريس الجامعي .

مشاركتم في هذه الاستبانة تطوعية، وستثري البحث، وستضيف له قيمة علمية، كما ستسهم إلى حد كبير في الوصول به إلى أفضل النتائج. علماً بأنّ المعلومات الشخصية التي ستقدم في هذه الاستبانة سرية ، وستستخدم فقط لأغراض هذا البحث.

أشكر لسعادتكم - سلفاً - تعاونكم واهتمامكم، ولأني سؤال أو استفسار الرجاء الاتصال بالباحث عن طريق العنوان الموضح في الأسفل . ملاحظة: يمكنكم ملأ النسخة الإلكترونية (بدل الورقية) من الرابط التالي: <http://goo.gl/anzda> و الذي يمكن الوصول له عن طريق الرمز التالي (QR Code)



هذا ولكم خالص تحياتي وتقديري،،،

الباحث

بكر عبدالباسط بكر كمال

جامعة كانسس الحكومية

كلية التربية/ قسم المناهج وطرق التدريس

الولايات المتحدة الأمريكية

هاتف: 0015419684422

البريد الإلكتروني [bakor@ksu.edu](mailto:bakor@ksu.edu)

## المحور الأول: اسئلة لمعرفة الاهتمام

الأسئلة من 1-35 تم إعادة طباعتها بموافقة Southwest Educational Developmental Laboratory

إنَّ الهدف من هذه الاستبانة تحديد كيفية تقبل أعضاء هيئة التدريس للتعليم عن بعد وشعورهم نحو هذا التغيير، ثم تطوير هذه الأسئلة بناءً على الإجابة المعتادة لمعلمي المدارس و أساتذة الجامعات التي تتفاوت خبراتهم من معرفة تامة بالموضوع إلى عدم معرفة نهائياً ؛ لذا فإنَّ جزءاً كبيراً من الأسئلة قد يبدو لكم من أول وهلةٍ أنَّه لا علاقة له بالموضوع حالياً أو العكس .

الرجاء عند الإجابة على هذه الأسئلة، أن تعطيتها علامات تتطابق مع شعورك في الوقت الحاضر. تتراوح الإجابة على هذه الأسئلة من (0) إلى (7) ، حيث يمثل الرقم (0) عدم اهتمام كليّ ، أو معرفة بالسؤال المطروح ، والرقم (7) يمثل معرفة تامة و تطابق كليّ ، بينما تشكل الأرقام ما بينهما نسبة معرفتك وشعورك تجاه الموضوع ؛ لذا يرجى وضع دائرة واحدة حول الإجابة المناسبة على المقياس المدرج المعطى.

مثلاً:

0 1 2 3 4 5 6 7	إن هذا التعبير صحيح جداً في الوقت الحاضر.
0 1 2 3 4 5 6 7	إن هذا التعبير ينطبق علي بعض الشيء.
0 1 2 3 4 5 6 7	إن هذا التعبير لا ينطبق علي في الوقت الحاضر.
0 1 2 3 4 5 6 7	إن هذا التعبير لا يعني لي شيئاً.

الرجاء الإجابة على العبارات بناءً على شعورك تجاهها في الوقت الحاضر، وبناءً على اهتمامك بالتعليم عن بعد.

شاكرًا لكم سلفاً حُسن تعاونكم.

76	543	21	0
ينطبق علي جداً حالياً	ينطبق علي بعض الشيء حالياً	غير صحيح بالنسبة لي حالياً	لا يعني لي شيئاً

يرجى وضع دائرة واحدة حول الإجابة المناسبة

7	6	5	4	3	2	1	0	1. أنا مهتم بمعرفة شعور الطلبة تجاه التعليم عن بعد.
7	6	5	4	3	2	1	0	2. أنا على معرفة بطرق أخرى قد تحقق نتائج أفضل.
7	6	5	4	3	2	1	0	3. أنا لذي اهتمامات أخرى أكثر أهمية غير التعليم عن بعد.
7	6	5	4	3	2	1	0	4. أنا قلق لعدم وجود وقت كافٍ لتنظيم نفسي كل يوم.
7	6	5	4	3	2	1	0	5. أرغب بمساعدة المدرسين الآخرين على تعلم كيفية استخدام التعليم عن بعد.
7	6	5	4	3	2	1	0	6. عندي معرفة محدودة جداً عن التعليم عن بعد .
7	6	5	4	3	2	1	0	7. أرغب بمعرفة تأثير عملية استخدام التعليم عن بعد على مركزي الوظيفي .
7	6	5	4	3	2	1	0	8. أنا قلق بالنسبة للتضارب بين اهتماماتي ومسؤولياتي .
7	6	5	4	3	2	1	0	9. أنا مهتم بمراجعة وتصحيح استعمالي للتعليم عن بعد .
7	6	5	4	3	2	1	0	10. أرغب بإقامة علاقة عمل مع كل من طاقم التعليم الخاص بنا وطاقم تعليم من خارج الجامعة يستعمل التعليم عن بعد .
7	6	5	4	3	2	1	0	11. أنا مهتم بمعرفة تأثير التعليم عن بعد على الطلبة .
7	6	5	4	3	2	1	0	12. أنا غير مهتم بالتعليم عن بعد حالياً.
7	6	5	4	3	2	1	0	13. أرغب بمعرفة من سيتخذ القرارات في هذا النوع من التعليم الجديد .
7	6	5	4	3	2	1	0	14. أرغب بفتح نقاش عن إمكانية استخدام التعليم عن بعد في الجامعة .
7	6	5	4	3	2	1	0	15. أرغب بمعرفة المصادر والوسائل التعليمية المتوفرة في حال قرر استعمال التعليم عن بعد في الجامعة .
7	6	5	4	3	2	1	0	16. أنا قلق بالنسبة لعدم مقدرتي على تلبية متطلبات التعليم عن بعد .
7	6	5	4	3	2	1	0	17. أرغب بمعرفة كيفية تغيير طريقة تعليمي أو إدارتي عند استعمال التعليم عن بعد.
7	6	5	4	3	2	1	0	18. أرغب بتزويد الأقسام المختلفة والأفراد بمعلومات عن عملية سير هذا التوجه الجديد في حال تطبيقه .
7	6	5	4	3	2	1	0	19. أنا مهتم في تقييم تأثيري على الطلبة .
7	6	5	4	3	2	1	0	20. أرغب بمراجعة وتصحيح مسار تطبيق التعليم عن بعد في الجامعة .
7	6	5	4	3	2	1	0	21. أنا مشغول كلياً بأشياء أخرى .
7	6	5	4	3	2	1	0	22. أرغب بتعديل استخدامنا للتعليم عن بعد بناءً على تجارب طلبتنا .

7 6	5 4 3	2 1 0	2 1	0
ينطبق علي جداً حالياً	ينطبق علي بعض الشيء حالياً	لا ينطبق علي شيئاً	غير صحيح بالنسبة لي حالياً	لا يعني لي شيئاً

7	6	5	4	3	2	1	0	23.	لم أصرف جزءاً كبيراً من وقتي للتفكير في التعليم عن بعد .
7	6	5	4	3	2	1	0	24.	أرغب ببث الحماس بين طلابتي حول دورهم في التعليم عن بعد .
7	6	5	4	3	2	1	0	25.	أنا قلق بالنسبة للوقت المخصص للمسائل غير التعليمية المتعلقة بالتعليم عن بعد.
7	6	5	4	3	2	1	0	26.	أنا أرغب بمعرفة متطلبات استعمال التعليم عن بعد على المدى القريب .
7	6	5	4	3	2	1	0	27.	أرغب بتنسيق جهودي مع الآخرين للحصول على أقصى فوائد التعليم عن بعد .
7	6	5	4	3	2	1	0	28.	أرغب بالحصول على معلومات أكثر حول الوقت والجهد اللذين يتطلبهما تطبيق التعليم عن بعد .
7	6	5	4	3	2	1	0	29.	أرغب بمعرفة ما يفعله الأساتذة الآخرون في التعليم عن بعد .
7	6	5	4	3	2	1	0	30.	في الوقت الحاضر أنا منشغل بأولويات أخرى أكثر أهمية تمنعني من الاهتمام بالتعليم عن بعد .
7	6	5	4	3	2	1	0	31.	أنا أرغب في معرفة كيفية تطوير أو استبدال التعليم عن بعد باستراتيجية أخرى .
7	6	5	4	3	2	1	0	32.	أرغب في استعمال ردة فعل الطلبة بالنسبة للتعليم عن بعد بهدف تغييره .
7	6	5	4	3	2	1	0	33.	أرغب في معرفة كيفية تغيير دوري بعد تطبيق التعليم عن بعد .
7	6	5	4	3	2	1	0	34.	إن التنسيق بين الأعمال والأشخاص يأخذ الكثير من وقتي .
7	6	5	4	3	2	1	0	35.	أود أن أعرف لماذا يعتبر التعليم عن بعد أفضل مما لدينا حالياً .

36. أكتب أي مخاوف أو ملاحظات أخرى حول استخدام التعليم عن بعد في تدريسك. يمكنك الكتابة خلف الصفحة عند الحاجة.

### المحور الثاني: مستوى دعم المسؤولين لاستخدام التقنية في التعليم

37. من فضلك ضع دائرة حول الخيار الذي يتفق مع درجة موافقتك أو عدم موافقتك، وذلك بناءً على المقياس التالي:

1	2	3	4	5	لا أعلم
لا أوافق أبداً	لا أوافق	غير متأكد	أوافق	أوافق بشدة	لا أعلم

#### دعم مسؤولي القسم

أ.	مسؤولو القسم الذي أنتمي إليه يشجعون أعضاء هيئة التدريس الذين يستخدمون التقنية في التعليم.	1	2	3	4	5	لا أعلم
ب.	مسؤولو القسم الذي أنتمي إليه يدركون أن استخدام التقنية في التعليم يتطلب جهداً إضافياً.	1	2	3	4	5	لا أعلم
ج.	مسؤولو القسم الذي أنتمي إليه يخبرون أعضاء هيئة التدريس بأهمية استخدام التقنية في التعليم.	1	2	3	4	5	لا أعلم

#### دعم مسؤولي الكلية

أ.	مسؤولو الكلية يشجعون أعضاء هيئة التدريس الذين يستخدمون التقنية في التعليم.	1	2	3	4	5	لا أعلم
ب.	مسؤولو الكلية يدركون أن استخدام التقنية في التعليم يتطلب جهداً إضافياً.	1	2	3	4	5	لا أعلم
ج.	مسؤولو الكلية يخبرون أعضاء هيئة التدريس بأهمية استخدام التقنية في التعليم.	1	2	3	4	5	لا أعلم

#### دعم مسؤولي الجامعة

أ.	مسؤولو الجامعة يشجعون أعضاء هيئة التدريس الذين يستخدمون التقنية في التعليم.	1	2	3	4	5	لا أعلم
ب.	مسؤولو الجامعة يدركون أن استخدام التقنية في التعليم يتطلب جهداً إضافياً.	1	2	3	4	5	لا أعلم
ج.	مسؤولو الجامعة يخبرون أعضاء هيئة التدريس بأهمية استخدام التقنية في التعليم.	1	2	3	4	5	لا أعلم

### المحور الثالث: اتجاهات أعضاء هيئة التدريس حول التعليم عن بعد

من فضلك ضع دائرة حول الخيار الذي يتفق مع درجة موافقتك أو عدم موافقتك، وذلك بناءً على المقياس التالي:

1	2	3	4	5	لا أوافق أبداً
لا أوافق أبداً	لا أوافق	غير متأكد	أوافق	أوافق بشدة	لا أعلم

38.	لدي اهتمام بتعلم المزيد حول معرفة أفضل طرق التعليم عن بعد.	1	2	3	4	5
39.	لدي اهتمام بتعلم المزيد حول التغييرات اللازمة للمقرر الدراسي لكي يمكن تقديمه عن بعد.	1	2	3	4	5
40.	أؤمن بأن التعليم عن بعد له فوائد كبيرة للطلبة.	1	2	3	4	5
41.	أحتاج إلى المزيد من المراجع التي تشرح كيفية التدريس عن بعد.	1	2	3	4	5
42.	أؤمن بأن التعليم عن بعد ليس الطريقة المثلى لإيصال المعلومات للطلبة.	1	2	3	4	5
43.	لدي اهتمام بأن أحضر ورش عمل متعلقة بالتعليم عن بعد.	1	2	3	4	5
44.	تبني التعليم عن بعد يتطلب القيام بتغييرات ضرورية على المنهج.	1	2	3	4	5

المحور الرابع: إدراك أعضاء هيئة التدريس لتطوير احتياجاتهم التقنية

من فضلك ضع دائرة حول الخيار الذي يتفق مع درجة موافقتك أو عدم موافقتك، وذلك بناءً على المقياس التالي:

5	4	3	2	1
أوافق بشدة	أوافق	غير متأكد	لا أوافق	لا أوافق أبداً

5	4	3	2	1	45. أحتاج إلى فرص تدريبية أكثر فيما يتعلق بطرق التدريس التي تدمج التقنية في التدريس .
5	4	3	2	1	46. أحتاج إلى اتصال دائم بالانترنت .
5	4	3	2	1	47. أحتاج لتوفر الدعم التقني لضمان استمرارية عمل أجهزة الحاسب الآلي أثناء التدريس .
5	4	3	2	1	48. أعتقد بأنه يجب أن يكون لأعضاء هيئة التدريس صوت أقوى في برنامج التطوير المهني .
5	4	3	2	1	49. أحتاج إلى المزيد من ورش العمل وحلقات النقاش الدوريه التي تتعلق باستخدام التقنية في التدريس .
5	4	3	2	1	50. تلمي خطة الجامعة في مجال التطوير المهني احتياجاتي في مجال التقنية .

51. أرجو توضيح درجة معرفتك أو إلمامك بالبرامج التعليمية التالية من خلال:

أولاً: ضع علامة صح بجانب النظام الذي كنت قد استخدمته مع طلابك في إحدى المراحل

ثانياً: حدد في عمود (ب) عدد الفصول الدراسية التي استخدمت فيها واحدًا أو أكثر من هذه الأنظمة المذكورة في عمود (أ)

أ. النظام	ب. عدد الفصول الدراسية التي استخدمت فيها هذا النظام بما فيها الفصل الحالي
<input type="checkbox"/> إدارة التعليم الإلكتروني عن بعد EMES	
<input type="checkbox"/> الفصول الافتراضية CENTRA	
<input type="checkbox"/> التعلم عبر الجوال M-Learning	
<input type="checkbox"/> برنامج الاستبانة الإلكترونية DDL-Data Collection System	
<input type="checkbox"/> أخرى (أرجو التحديد):	
<input type="checkbox"/> لا شيء: لم أستخدم أي نظام تعليمي	XX

من فضلك ضع دائرة حول الخيار الذي يتفق مع درجة موافقتك أو عدم موافقتك، وذلك بناءً على المقياس التالي:

5	4	3	2	1
أوافق بشدة	أوافق	غير متأكد	لا أوافق	لا أوافق أبداً

5	4	3	2	1	52. أستخدم جوالي للتفاعل مع طلابي عن طريق نظام التعلم عبر الجوال M-Learning
5	4	3	2	1	53. لست مهتما باستخدام نظام التعلم عبر الجوال M-Learning لمتابعة الواجبات أو للتذكير بالمتطلبات أو لدعم الطلبة عن طريق نظام
5	4	3	2	1	54. أقدم لطلابي مواد (كتب إلكترونية، محاضرات مسجلة) يمكن الوصول عن طريق نظام التعلم عبر الجوال M-Learning

5	4	3	2	1	55. أستخدم نظام إدارة التعليم عن بعد الإلكتروني EMES للتفاعل مع طلابي
5	4	3	2	1	56. أقدم لطلابي مواد (كتب إلكترونية، محاضرات مسجلة) يمكن الوصول عن طريق نظام إدارة التعليم عن بعد الإلكتروني EMES
5	4	3	2	1	57. أستخدم نظام الفصول الافتراضية CENTRA لتمكين الطلاب من التفاعل خلال المحاضرات مع استخدام أدوات النظام ( مشاركة الرسومات، الروابط، الملفات، إلخ.)
5	4	3	2	1	58. أطلب من طلابي تعبئة استبانات باستخدام نظام الاستبانة الإلكترونية DDL-Data Collection System لمعرفة اقتراحاتهم و آرائهم حول المنهج

59. تقريبا كم عدد الساعات التي قضيتها في حضور الدورات المتعلقة باستخدام التقنية في التعليم في العامين الماضيين؟ الرجاء كتابة الجواب في السطر أدناه. (ملاحظة: الدورات المتعلقة بالتقنية قد تتضمن حضور ورش العمل، البرامج، الدورات، المؤتمرات، المعارض ذات العلاقة).

60. هل سبق وأن حصلت على أي تدريب من الجامعة على استخدام أنظمة التعليم الإلكتروني Online Teaching ؟  
 لا  نعم

61. هل ترغب بالحصول على أي تدريب من الجامعة على استخدام أنظمة التعليم الإلكتروني Online Teaching ؟  
 لا  نعم

62. هل سبق وأن حصلت على دعم مادي لدعم استخدامك لنظام أو أكثر من أنظمة التعليم الإلكتروني التالية (EMES, CENTRA, M-Learning, or DDL-Data Collection System) ؟  
 لا  نعم

63. هل ترغب بالحصول على دعم مادي لدعم استخدامك لنظام أو أكثر من أنظمة التعليم الإلكتروني التالية (EMES, CENTRA, M-Learning, or DDL-Data Collection System) ؟  
 لا  نعم

64. هل تحصل على مساعدة من قبل موظف أو أكثر من العاملين في الجامعة تساعدك في استخدام أي من أنظمة التعليم الإلكتروني؟  
 لا  نعم

65. ماالنشاطات التطويرية المهنية والحوافز والدعم التي تحتاج إليها لدعم استخدامك لأنظمة التعليم الإلكتروني في تدريسيك؟ يمكنك الكتابة خلف الصفحة عند الحاجة.

66. حدد أهم نشاط أو تطوير مهني (من تلك التي حددتها في السؤال السابق) تحتاجه في الفترة الحالية لكي تستخدم أنظمة التعليم الإلكتروني لزيادة فاعلية تدريسيك؟

المحور الخامس: بيانات ديموغرافية (تعريفية)

67. العمر	
68. الجنس	<input type="checkbox"/> ذكر <input type="checkbox"/> أنثى
69. حصلت على آخر مؤهل علمي من	<input type="checkbox"/> دولة عربية <input type="checkbox"/> دولة غير عربية من فضلك أذكر اسم الدولة:
70. عدد سنوات الخبرة في التدريس	
71. القسم	
72. الرتبة الأكاديمية	<input type="checkbox"/> أستاذ <input type="checkbox"/> أستاذ مشارك <input type="checkbox"/> أستاذ مساعد <input type="checkbox"/> محاضر أو معيد

شاكر لكم كريم تعاونكم،،،

## Appendix F - Support Letters

KINGDOM OF SAUDI ARABIA

Ministry of Higher Education

**KING ABDULAZIZ UNIVERSITY**

Faculty of Science

Department of Mathematics



المملكة العربية السعودية  
وزارة التعليم العالي  
جامعة الملك عبد العزيز  
كلية العلوم  
قسم الرياضيات

Ref.: .....

Date: *May 28, 2012*



الرقم: .....

التاريخ: .....

### To Whom It May Concern

King Abdul-Aziz University (KAU) has been a leader in online learning in Saudi Arabia. In fact, it started this type of education in 2005. KAU established a deanship of distance learning in early 2006, and since then lots of resources were allocated to excel in this new venue of higher education. The university is already offering full online B. Sc. programs. Indeed professional development was part of the comprehensive implementation plan at KAU.

Therefore, I think the Ph. D. thesis entitled "The Concerns and Professional Development Needs of the Faculty Members at King Abdul-Aziz University in Saudi Arabia in Adopting Online Learning" will be a real added value to e-learning at KAU. I think also that Mr. Bakor Kamal will be a good candidate to carry on such research.

I hope it will be an original successful addition to knowledge in this area.

I would also like to mention that I was VP for Development at KAU (2004-2007), and online learning was part of my broad duties.

Professor Salem Sahab, Ph. D.  
Department of Mathematics  
King Abdul-Aziz University  
Jeddah, Saudi Arabia

ص.ب: ٨٠٢٠٣ جدة : ٢١٥٨٩  
P.O. Box: 80203 Jeddah: 21589

برقياً: «جامعة عبدالعزيز»  
Cable: "Jameatabdulaziz"

فاكس: ٦٩٥٢٦٦٩ (٠٢)  
Fax.: (02) 6952669

☎: ٦٩٥٢٢٩٧ (٠٢)  
☎: (02) 6952297



**TO WHOM IT CONCERN**

It gives great pleasure to write this letter on behalf of Mr. Baker A. B. Kamal, who is studying at Kansas State University to get a Ph.D. in Educational Technology, and his thesis title is "The Concerns and Professional Development Needs of Faculty at King Abdul-Aziz University in Saudi Arabia in Adopting Online Learning". I confirm here that I am willing to be one of the members of his committee of experts in the field to help to fulfill the requirement of his graduation program.

This letter is issued upon his request with no further obligations towards the institution.

Waleed S. M. Al-halfawy- Assistant prof.  
*Waleed S. M. Al-halfawy*  
Educational Tech. Dep. - Faculty of Education-KAU  
e-mail: [wsalim90@yahoo.com](mailto:wsalim90@yahoo.com)  
Mobile: 00966-54870246

الرقم: \_\_\_\_\_ التاريخ: \_\_\_\_\_ Date: \_\_\_\_\_ التوقيع: \_\_\_\_\_

## Appendix I Translation

KINGDOM OF SAUDI ARABIA  
Ministry of Higher Education  
**KING ABDULAZIZ UNIVERSITY**  
Deanship of Distance Learning  
Women Campus

“To Whom It May Concern”

The study of The Ph.D. candidate student Bakor A. Kamal entitled “*The Concerns and Professional Development Needs of Faculty at King Abdul-Aziz University in Saudi Arabia in Adopting Online Teaching*” will be an important addition to the King Abdul Aziz University Distance Education program. It will also help with establishing future strategic plans for distance education at King Abdulaziz University.

Vice Dean of e-Learning and Distance Education

Dr. Lila J. Al-Ghalib

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## Appendix G - Petherbridge's Permission

10/17/12

K-State Webmail

**K-State Webmail**

**bakor@k-state.edu**

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### Re: Permission request on using Dissertation Survey

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**From :** Donna Petherbridge <pether@ncsu.edu>

Wed, Oct 17, 2012 11:18 AM

**Subject :** Re: Permission request on using Dissertation Survey

**To :** Bakor Kamal <bakor@k-state.edu>

Hi Bakor,

You have my permission to use any part of the survey that's mine (if you need SoCQ, you do need to go through the clearinghouse for that instrument).

Best of luck in your work,

Donna :-)

On Wed, Oct 17, 2012 at 12:15 PM, Bakor Kamal <bakor@k-state.edu> wrote:

> Dear Dr. Petherbridge,

>

> My name is Bakor Kamal, a PhD candidate at Kansas State University. I would like to ask your permission to use your dissertation survey (the part after SoCQ) for my dissertation survey.

>

> Thank you,

> Bakor Kamal

>

> Bakor A. Kamal

> PhD Student

> Department of Curriculum and Instruction

> Kansas State University

> Phone: (541)968-4422

> <http://people.cis.ksu.edu/~bakor/>

>

--

=====  
Dr. Donna Petherbridge

Associate Vice Provost, Instructional Technology Support and  
Development Services

Distance Education and Learning Technology Applications  
(delta)

Teaching Assistant Professor, Workforce and Human Resource Development  
Leadership, Policy & Adult and Higher Education  
College of Education

919.513.3737(phone)

<https://webmail.k-state.edu/zimbra/h/printmessage?tid=41952&xim=1>

1/2

## Appendix H - Yidana's Permission

10/25/12

K-State Webmail

**K-State Webmail**

**bakor@k-state.edu**

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### Re: Permission request on using Dissertation Survey

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**From :** Issifu Yidana <iyidana@uow.edu.gh> Thu, Oct 25, 2012 11:53 AM  
**Subject :** Re: Permission request on using Dissertation Survey  
**To :** Bakor Kamal <bakor@k-state.edu>

Hi Kamal,

Please, you may use any part of the survey (with citation) that is relevant to your study. Wish you all the best in your work.

Issifu Yidana, Ph.D.

Quoting Bakor Kamal <bakor@k-state.edu>:

> Dear Dr. Issifu Yidana,  
>  
> My name is Bakor Kamal, a PhD candidate at Kansas State University.  
> I would like to ask your permission to use part of the survey from  
> your  
> dissertation (2007) in my dissertation:  
>  
> Thank you so much,  
> Bakor Kamal  
>  
>  
> Bakor A. Kamal  
> PhD Student  
> Department of Curriculum and Instruction  
> Kansas State University  
> Phone: (541)968-4422  
> <http://people.cis.ksu.edu/~bakor/>  
>  
>

--iyidana

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This message was sent using IMP, the Internet Messaging Program.

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<https://webmail.k-state.edu/zimbra/h/printmessage?id=42090&xim=1>

## Appendix I - Letters in Arabic

KINGDOM OF SAUDI ARABIA  
Ministry of Higher Education  
**KING ABDULAZIZ UNIVERSITY**  
Deanship of  
Distance Learning  
Women s Compus



المملكة العربية السعودية  
وزارة التعليم العالي  
جامعة الملك عبد العزيز  
عمادة التعليم عن بعد  
شطر الطالبات

Ref. : .....

الرقم : .....

Date : .....

التاريخ : .....

Encl. : .....

المرفقات : .....

"إلى من يهمه الأمر"

إن موضوع بحث طالب الدكتوراه (بكر عبد الباسط بكر كمال)، وعنوانه:

«اهتمامات واحتياجات التنمية المهنية لإعضاء هيئة التدريس بجامعة الملك عبد العزيز في المملكة العربية السعودية لتبنى التعليم عن بعد»

*"The Concerns and Professional Development Needs of Faculty at King Abdul-Aziz University in Saudi Arabia in Adopting Online Learning"*

هو موضوع مهم وحيوي، يتناسب مع تطلعات التعليم في المملكة العربية السعودية، ومتوافق مع الخطة الاستراتيجية لجامعة الملك عبدالعزيز. وهو موضوع جدير بالبحث والدراسة.

وكليلة عمادة التعلم الإلكتروني  
والتعليم عن بعد

د. ليلى بنت جابر آل غالب

ص.ب. ٤٢٦٤٣ جدة ٢١٥٥١  
P.O. Box 42643 Jeddah 21551

موقع الإنترنت  
http://clearning  
Kau.edu.sa

فكس : ٦٩٥٦٣٦٦  
Fax. : 6956366

٦٩٥٣٣٧٢ : ☎  
☎ : 6953372

## Translation of the letter

KINGDOM OF SAUDI ARABIA  
Ministry of Higher Education  
**KING ABDULAZIZ UNIVERSITY**  
Deanship of Distance Learning  
Women Campus

“To Whom It May Concern”

The study of The Ph.D. candidate student Bakor A. Kamal entitled “*The Concerns and Professional Development Needs of Faculty at King Abdul-Aziz University in Saudi Arabia in Adopting Online Teaching*” will be an important addition to the King Abdul Aziz University Distance Education program. It will also help with establishing future strategic plans for distance education at King Abdulaziz University.

Vice Dean of e-Learning and Distance Education

Dr. Lila J. Al-Ghalib

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## Appendix J - KSU IRB Training Certificates



**Kansas State University**

**University Research Compliance Office**

**Certifies the individual named below has completed the  
IRB Module 3 - K-State Federalwide Assurance (FWA)  
for the Protection of Human Subjects - training module  
and quiz.**

Name: Bakor A Kamal  
Department: Curriculum and Instruction  
Telephone: 5419684422  
E-Mail: bakor@k-state.edu  
Confirmation #: 117226379  
Date: October 19th, 2012

**Kansas State University**

**University Research Compliance Office**

**Certifies the individual named below has completed the  
IRB Module 4 - The Belmont Report - training module  
and quiz.**

Name: Bakor A Kamal  
Department: Curriculum and Instruction  
Telephone: 5419684422  
E-Mail: bakor@k-state.edu  
Confirmation #: 117226571  
Date: October 19th, 2012

