# Institutional Factors Affecting Students' Intentions to Withdraw From Distance Learning Programs in the Kingdom of Saudi Arabia the Case of the Arab Open University (AOU)

***Manal Ibrahim***
***Doctor of Business Administration of Maastricht School of Management***
***Maastricht , Netherlands***

***Kami S.P. Rwegasira***
***Department Chair & Professor of Finance Maastricht School of Management (MSM)***
***Maastricht , Netherlands***

***Ahmed Taher***
***Assistant Professor of Marketing School of Business , Economics and Communication***
***The American University in Cairo***

## Abstract

This paper focuses on the relationship between institutional factors and the intention of undergraduate students to withdraw from or complete their distance education courses in the Arab Open University (AOU). The model was examine on a pilot sample of 127 students and then re-examined on the field study of 587 students. Mixed paradigms were selected, the quantitative approach was, the dominant technique, using factor analysis followed by discriminant analysis. The qualitative approach used content analysis for the in-depth interviews and open ended questions to explore the problem details. This study seems to suggest that, the intention to stay in the Arab Open University (AOU) distance learning (DL) programs depends critically on the quality of instructors and the variety of technology used to support and deliver these (DL) programs .

## Introduction

Distance learning (DL) may be a new phenomenon in the developing economies but it is certainly not a new trend in the field of education in the developed economies such as the USA and the UK . In fact, distance learning can be traced back to the late 1800's when correspondence courses were first introduced ( Willis , 1994). Nowadays, there is a vast and rapid growth of distance learning at all levels of education to the extent that it moves from being a marginal to becoming an integral part of the overall educational and training provision ( Moore , 2002; UNESCO, 2002). This means that a significant number of learners all over the world receive their education by means of distance learning programs. Meanwhile, the recent advancements in technology offer many options for delivering and receiving education over geographic distances. Although it is clear that DL widens the scope of educational opportunities for those learners who already have an access to educational facilities, the high attrition in DL universities is regarded as a dilemma for which an appropriate solution has yet to be found.

**Problem Definition**

It has always been the concern of educators to retain the greatest possible number of learners in distance learning. The percentage of students who withdrew from traditional higher education remained steady between 40-45% over the past 100 years (Tinto V., 1982). In the context of online learning, some scholars found that the attrition rate of distance learning students is significantly higher than that in traditional classes ( Carr , 2000; Diaz , 2002; Frankola, 2001 ) . Student retention and attrition rates have all along been a concern of administrators of educational and training institutions in not only Asia and Latin America but also, as pointed out by Rwegasira (1988), in Africa . This problem is, in this research, re-examined in the context of the Arab world. Do the factors, which account for this phenomenon in the Middle East , differ from what has been found elsewhere? In addition, if so how and what are the theoretical and policy implications?

The major problem discussed and hence analysed in this research is:

*Why do students fail to complete their distance learning programs and thus fail to persist with the degree completion or fulfilment of their educational goals?*

A variety of terms has been used to describe non-completion and these terms have been defined in different ways in different education sectors (McGivney, 2004). Gallie (2005) defines attrition as the number of students at the start of the course minus those who complete the course. *Attrition* refers to the decrease in the number of students enrolled in some courses; and such decrease can be attributed to one reason or another. Attrition may refer to stop-outs or dropouts. Stop-outs are those students who leave universities and return to it sometime later. *Dropouts* are students who leave and do not return to universities. According to Astin (1970) , students cannot be classified as dropouts until they die. An antonym of attrition is retention. *Retention* describes students who are promoted from one phase of education to the next and are enrolled over a considerable period ( Martinez , 2004). In this study, and fo r the purposes of developing a model of attrition of students in distance learning, a dropout is considered any student who is enrolled at an Arab Open University (AOU) for one semester but does not intend to be enrolled the next semester. Retention will be any student who is enrolled at an AOU for one semester and intends to continue to be enrolled the next semester. Attrition or retention is the predicted or the dependent variable. There are many independent variables or the predictors, which are responsible for either attrition or retention . In this study, we are interested in institutional variables either social or academic. The model developed is based on intentions of the students to leave or stay in the program rather than actual numbers of stop-outs or drop-outs. The predictions of a model based on intentions are likely to give opportunities and time for remedial actions for pre-emption of the attrition problem.

**Research Question**

To what extent do *institutional variables* significantly discriminate between *intention of attrition or retention* of students in DL?

The main objective of this paper is to examine to what extent institutional variables affect the attrition or retention of students in DL as defined above. This can be determined through the identification of the characteristics that differentiate significantly from the statistical point of view between attrition and retention of DL students. Discrimanant analysis was used to

determine which of the independent variables accounts for the highest average score profile of attrition and retention of DL students.

**Distance Learning in the Arab States**

The Arab States have witnessed a notable increase in enrolment rates in higher education institutions. This increase is due a number of reasons amongst which is the constant increase in public demand for education, which is the direct and natural result of high rates of population growth. Nevertheless, most Arab governments are not financially capable of meeting their needs of establishing higher education institutions. In this context, DL with its modern communication and technologies has emerged in an attempt to solve the dilemma; and according to another report published by UNESCO (1998), DL succeeded in making available the chance of pursuing higher education at a reasonable cost.

*A Glance at the Distance Higher Education in the Arab Region*

In the Arab region, there are three modes of DL institutions: dual mode, single mode, and virtual mode. Firstly, the dual mode universities are institutions that have extended educational activities to provide off-campus programs as well as on-campus programs such as the Open Learning Centres in Egypt (1989) and the Distance Education Centre of Juba University in Sudan . Secondly, the single Mode Distance Education Universities have a sole function of distance education; single mode universities offer all of their activities to that end such as Al-Quads Open University (1991), Arab Open University (1999) and the Open University in Libya (2004). Finally, the Syrian Virtual University (SVU) is the first online university in the Arab region to use the virtual mode. It was established in 2002 to provide world -class education without limitations, and to link the Arab region to the western world. The objective of the university is to bring American, European, and other international universities to each home in the Arab States so that students do not have to leave their countries to study abroad. Besides, the degrees awarded are internationally accredited (Mohamed , 2005).

*The AOU and Distance Higher Education*

Culturally speaking, the Arab States have many features in common, particularly on the linguistic and religious levels. However, there are obvious differences amongst them in many aspects, such as population size, national income, natural resources, stability, and prosperity.

AOU , established under the umbrella of the Arab Gulf Program for United Nations Development Organizations (AGFUND), adopted broad regional educational goals. The model adopted by AOU is the United Kingdom Open University, with a few adaptations in pre-entry qualifications. AOU requires pre-entry qualifications that confine accessibility to those who aim to get academic credits.

AOU is a single mode university. Its main campus is in Kuwait and it extends to cover six different Arab countries: Bahrain , Egypt , Lebanon , Jordan , and Saudi Arabia . In Saudi Arabia , it has four different branches, which are located in Riyadh , Jeddah, Haeel, and Ehssaa.

*Impediments to the Development of Distance Education in the Arab Region*

The Arab League Educational, Cultural, and Scientific Organization (ALECSO) identified a number of issues that have a negative impact on the growth of distance education in the Arab region. These are:

1. Traditional distance instructional media are still used broadly at open education universities.

2. Most delivery systems at the Arab open universities are via printed materials; and the majority of these printed materials were developed by existing traditional universities.

3. The bulk of the part-time instructors are borrowed from the traditional universities. Besides, they are not trained to conduct classes of distance higher education, and their attitudes towards distance education are not much different from the rest of the people who look at distance education as a second-class form of education.

To overcome some of these problems, it is vital to guarantee the high quality of DL programs and to ensure the suitability of the programs to Arab students.

*Some Obstacles of DL in the Arab Region*

There are two important obstacles hindering the process of DL in the Arab region; one is related to the society and the other to the government.

First, the majority of the Arab societies are still sceptical about the practices of DL education programs, believing that DL is another form of correspondence and not a novel approach to instruction. This blurred image is even reinforced by the fact that some DL students fail to finish their program.

Second, some Arab countries do not recognize distance education institutions, and therefore do not grant a license to anyone. These situations have serious implications for the development of DL mode in the region.

The notion that DL is new to the Arab region denotes that distance education may be distrusted because its graduates are oftentimes left without being awarded recognized qualifications. In support of this view, UNESCO (2002: p.10) States that:

“Two attitudes have emerged in the market place on the way to the qualifications obtained from DL institutions. One could be considered as ‘pure market value' and then leave the competencies take place without consideration of their source. The other option is more sensible and requires authentication of the qualifications through recognition by accreditation of the institution. The two attitudes have left heavy bills and no recognized qualifications” (Mohamed, 2005) .

To redress the doubt surrounding the concept and the practice of distance education, great efforts should be made to ensure low attrition rate of such programs. The retention of distance higher education students in the Arab region must be taken seriously if Arab countries want this mode of education to thrive. Developing a strategy to reduce the drop out rate for distance learner would be helpful for implementing such models in the region, and it would be a major step towards attaining accreditation of such institutions and their programs by internationally recognized bodies.

The observations discussed above are likely to lead to the conclusion that Arab States are falling short of ensuring quality distance higher education programs. More worrisome is the persistence of this state of affairs, the predictable consequences of poor programs and unrecognized credentials.

**Review of Literature**

From a historical perspective, the percentage of students who drop out of traditional higher education remains constant between 40 and 45% during the past 100 years (Tinto, 1982). In 344 colleges and universities in USA , the degree of completion rate was estimated to be 58% while the drop rate was almost 42%. (CSRDE Report, 2000-2001). Recently, Seidman (2005) announced that only 50% of those who enter higher education in US actually earn a bachelor's degree. In the context of distance and online learning, dropout rate appear to be higher than this in traditional one. Despite the unavailability of reliable national statistics for completion rates of distance learning students, dropout rates are estimated by some researchers in the field to be higher than that in the traditional by 10 to 20 % , with special reference to Carr, S. 2000; Frankola, K. 2001, Diaz, D. P. 2002. However, the satiation in the AOU is more dramatic because no study on attrition topic had been done before. There is a need for further research to explore the details of the attrition problem at the global level. In 1999, the Institute for Higher Education Policy in USA stated, “research does not adequately explain why the dropout rates of distance learners are higher than those in regular education.” However, in the Arab world, this topic has not been investigated adequately.

Sr. Tillman , C.A. (2002) cited that in the study of Mountain Empire Community College , the dropout rate mounted to about 50% of first-to-second-year. Because attrition is usually costly for the institution as well as for the individual, the whole college community collaborated in seeking to comprehend how to implement effective retention strategies. When reviewing all college records, it was found out that there was a deterioration of more than five million dollars in tuition revenue; and this was due to student attrition over the three years preceding the study. With an annual operating budget of less than 10 million dollars, this amount was deemed significant.

*Different Theories and Models of Students' Attrition and Retention*

Reviewing the academic research papers as well as the theoretical literature shows that the phenomenon of retention underlies a lot of controversy, complexity, and multi-dimensions. In general, retention theories discuss the factors that influence students' retention positively or negatively (Kinder, Gillis, Reed, Arooz and Carr-Locke, 2002). Several theoretical models of retention have been offered in both domains of traditional and DL.

The theory proposed by Tinto in 1975 and then modified twice in 1982 and 1993 respectively, is one of the most widely recognized retention theories in the field. Many theorists adopt it as an accredited model of student departure and persistence. Tinto's theory highlights two factors of students' motivation: their commitment to their academic objectives and their commitment to the institution where they are pursuing these objectives. Many variables are suggested to have a direct impact on these factors; some are peculiar to the student, such as prior qualifications, individual characteristics, etc., and others are specific to the institution, such as teaching, learning support, facilities, etc. When theses two groups of variables are combined, students are ensured with a sense of both academic and social integration; when one or both are compromised, students are more likely to drop out.

In their elaborate explanation of Tinto's theory, Cabrera et. al (1992) point out that individual attrition from academic institutions can be ascribed to a longitudinal process of interactions between an individual with certain characteristics, skills, financial means, educational background, and dispositions (intentions and commitments) and other members of the academic and social systems of the institution. Intentions and commitments are usually adapted and modified by the student's personal experience in those systems, as well as by his/her academic and social personal integration. Positive experiences, otherwise coined as integrative experiences, enhance persistence because of their obvious influence on aroused intentions and commitments, which eventually lead to two objectives: academic completion and adherence to the institution in which the student is enrolled. As for negative experiences, they have the potential to disintegrate intentions and commitments, especially commitment to the institution, and therefore enhance attrition.

According to Tinto (1993), student departure takes two forms: academic failure and voluntary withdrawal. The former (failing to achieve the required educational standard) constitutes only 15% to 25% of the total number of dropouts, while the latter (propensity to give up education) constitutes the remaining 75% to 85%. Apparently, Tinto's model holds that students join university education with a wide range of differentiating factors: family and community backgrounds (e.g. social status, parental education), individual attributes (e.g. sex, race), skills (social, intellectual), financial resources, dispositions (e.g. motivations, political preferences), and various types of pre-college educational experiences and achievements. Such factors are then moderated through the students' commitment to the institution and their ultimate objective: graduation or completion of the academic degree. Moreover, each factor will have its own direct impact upon departure from college.

Indeed, the reason for adopting Tinto's model is twofold. First, it is the most widely known and accredited hypothesis dealing with retention. Second, it has stimulated the main bulk of empirical research in the field. For example, Sweet (1986) used Tinto's hypothetical framework and applied it to DL. In his validation study, he reported that such factors as goal satisfaction, institutional commitment, and tutor contact have their own influential bearing. He also notes that grade point average (GPA) is the most salient predictor of persistence.

Astin (1970, 1984, 1993) claims that retention can be enhanced when students are positively involved in both the academic and social aspects of the entire educational set up. Such involvement requires investments of both physical and psychological energy. Besides, Astin asserts that the success of any educational policy depends on the amount of involvement achieved. This can be explained by the following chain statement: the more students study, the more time they spend on campus, the more involved they are in student organizations, the more they interact with faculty and other students, the more likely they are to persist and succeed. He also noted that grade point average (GPA) is the most salient predictor of persistence. Both Tinto and Astin studies hold similar views on large-scale multi-institutional studies examining the factors that affect retention and other types of students' outcome. Thus, McEwen, B. C. and Gueldenzoph, L. E (2003) said that Astin's Student Involvement Theory is analogous to that proposed by Tinto, but with more emphasis on the role played by students' motivation and behaviour.

In other treatment of the variables affecting students' persistence, Braxton et al. (1997) indicate that the five perspectives account for college students' persistence; economic, societal, psychological, organizational, and interactional. However, Garland (1993) reported that the reasons given by the students for withdrawing from DL courses can be grouped into four

categories; situational, dispositional, institutional, and epistemological.

In his treatment of retention, Barbadillo (1989) designed a four-variable model, which is assumed to predict students' completion of DL courses. The four variables thereby mentioned are categorized as follows: background variables, organizational variables, outcome/attitudinal variables and environmental variables. Berge and Huang (2004) endorse the model proposed by Boyles (2000) which includes three sets of variables: (1) background and defining variables, (2) environmental variables and (3) academic variables. Besides, the model has seven singular variables: academic self-confidence, academic integration, academic outcome (GPA), institutional size, social integration, psychological outcomes, and utility.

As for the importance of the role played by the instructor, Frankola (2001) initially emphasized it where he notes that students will drop even in the most refined course in the absence of interaction between them and the instructor. Such interactivity is a key component of successful online courses.

*Different Institutional Characteristics that Affect intention of Attrition*

When Anderson (1979) and Garrison (1990) studied the approach upon which interactive classes were designed, they came up with the conclusion that the instructional design had a significant influence on student's comprehension of the material presented. Exclusive focus on the acquisition and deployment of technology, irrespective of achieving development of opportunity for mutual interaction between the teacher and the learner, could not build up a community of learners with critical thinking. Hilgenberg and Tolone (2000) who widened the scope of the relationship between the instructional design and critical thinking to include an obvious link between instructional design and student satisfaction in the context of teaching and learning through video-based technology reached the same finding. With regard to effective teaching practices, Graham et.al.(2001) developed and recommended seven principles expected to reflect a good overall instructional design in any class

*What is Expected of DL Students*

Students in a distance learning course should be active and engaged in knowledge generation. They cannot sit passively and expect to be spoon-fed; that is, they should not wait until the instructor pours the course into their minds. Many scholars have looked at attrition rates as well as success rates of distance students and have found that certain characteristics lead to a “better” distance learning student (Buchanan, E.) . More over. Cohen, V. L 2001 believes that a distance learning learner should participate in three areas: knowledge generation, collaboration, and process management. In knowledge generation, the learner must be responsible for actively seeking solutions to problems contained within the framework of the course. Through this process, students generate and construct their own knowledge base with the guidance and help of the instructor. In collaboration, students are expected to work in pairs or groups to solve problems and evaluate material. Many distance learning courses fail because they do not facilitate a collaborative learning process, leading to feelings of isolation. The last area students must engage in is process management. In this area, students must be involved in a new environment for the sake of interacting with other students in a communicative manner if the content of the course or discussion is running in a direction that is comfortable for them. In this case, students may take the initiative of forming an online community of learners. Besides, they

must be in charge of the whole process of becoming a student in a distance learning course.

*The Amount of Interaction and the Transactional Distance*

McEwen and Gueldenzoph (2003) said that Astin's Student Involvement Theory is analogous to that proposed by Tinto, but with more emphasis on the role played by students' motivation and behaviour. Astin (1970, 1984, 1993) emphasizes the role of students' involvement in the organization, the more they interact with faculty and other students, the more likely they are intent to stay and succeed.

Moore (1994) holds that DL programs are governed by two variables: distance and autonomy. The former is determined by measuring the program's ability to support two ways of communication (dialogue/interaction) and the extent to which it is flexible in responding to students' needs (structure). The latter is determined by measuring the student's ability to specify his/her own objectives, learning activities, and assessment procedures. Moore 's definitions of distance as “a function of transaction which has an inverse relation between dialogue and structure, also supported by Saba and Shearer (1994). Many researchers in the field investigated the relevance of interaction to all sorts of educational settings and proved its close relatedness to positive attitude and higher achievement (Garrison, 1990; Hackman and Walker, 1990; Navarro and Shoemaker, 1999).

Interaction has recently been accorded the attention it really deserves in the research work based on meta-analysis, and was proved to be highly effective in tele-courses. The main bulk of that research was reviewed by Machtmes and Asher (2000) who concluded that interaction significantly influences learner's achievement. Interaction in the online environment has been explored in a variety of ways. Several scholars have examined determinants of interaction in DL including Kanuka and Anderson (1998), McLean and Morrison (2000), and Moore (2000). Moore classifies interaction in DL into three types: learner-content, learner-instructor, and learner-learner.

*Social Isolation*

Braxton et al. (1997) tested a series of fifteen propositions, which are assumed to be directly connected with student departure decisions. It is their ninth proposition which touches upon the issue of social integration. They believe that higher levels of social integration lead to corresponding levels of commitment to the institution. In other words, students with clear social involvement on campus were found to persist to a greater degree than those who keep themselves socially isolated for one reason or another.

Students who are so reluctant to utilize their time, energy, and resources in establishing social relationships with their colleagues do not usually develop a sense of belonging or affiliation to the institution, as do their sociable peers. In this context, it was found that peer pressure might be a very influential factor. For example, students who do not have substantial relationships with other students may think about dropping out, only to avoid being criticized by others. Sometimes it is easier to bear or stand severe criticisms when you have a friend who shares the criticisms and peer pressure with you. Therefore, educational institutions must introduce the kinds of creative programs that will encourage interaction and involvement from its participants. It is the responsibility of educators not to ignore the importance of good old–fashioned friendships in the

student persistence formula.

Communication via the medium of writing is another vital point studied by Murray (2001). He points out several reasons for students dropping from an online program. One of the reasons discussed is the fallacy that taking an online class is easier than attending other traditional classes. In fact, online courses often require more time to be assigned to the actual course than the time invested in a face-to-face session. This includes more typing where a lot of communication takes place through written form and more reading where the students construct and develop their knowledge by reading. In the distance learning class, nearly most communication is achieved through writing, so it is necessary that students feel comfortable in expressing themselves in writing. This may require remedial efforts on the part of the student. Meaningful and quality input into the online classroom is an essential part of the learning process.

In addition, students who have an easy access to computers will likewise have positive attitudes towards the use of computers in learning. Also having the required computer proficiency affects students' comprehension of the material presented. (Hong, K.-S., Ridzuan, A. A. , & Kuek, M.-K. 2003). Other researchers found that those who joined a distance-learning course with poor technical skills did not progress as well with the course content and oftentimes they found themselves overwhelmed by some of the assignments. Moreover, student's ability to deal with the modern communication media is necessary to participate in a distance learning course; and this skill is positively correlated with success in that course. ( Cohen V. L. 2001) .

**Conceptual Framework**

The most recent trends in DL focus on outcomes rather than structure. Students' intention of retention becomes an essential fundamental of higher DL quality. Thus, increasing retention has become a goal for many institutions, and a way of judging the quality of education. The review of literature has shown that several attempts have been made to link many institutional variables to the students' success; and these variables are to be considered significant in predicting attrition or retention for DL students.

On the basis of the previous studies, we can group institutional variables as follows:

Table 1: Institutional Variables

| 1. Academic variables | 2. Social and interaction variables |
|---|---|
| • Difficulty of program<br>• Degree of faculty support<br>• Degree of administrative support<br>• Media varieties used for course delivery and interaction<br>• Quality of online instructors | • Feedback received from instructors on assignments<br>• Interaction with instructors all over the course<br>• Amount of face-to-face interaction<br>• The amount and nature of interaction with peers |

| | |
|---|---|
| (Moore and Kearsley, 1996 ) | • The amount of interaction occurring through means of technology such as e-mail, e-class, CD, video tapes, etc<br>• The feeling of isolation |

**The Research Design**

According to the discriminant analysis function, the students of AOU are classified into those who intend to withdraw from, and those who intend to complete their distance education courses in the Arab Open University. This classification is based on a set of linear combinations of the independent (or predictor) variables. In this way, discriminant analysis can be used to estimate the relation between withdrawal from or completion of their distance education courses as a single, non-metric dependent variable and institutional variables in AOU as a set of metric independent variables.

Several in-depth interviews were conducted to fully explore and understand the nature of the case and define the important areas of information from the professional experts and management point of view. Using 95 % of the confidence level is the most common rule used for calculating the random sample size. The population examined in the study amounts to 4000 students, all enrolled in AOU, Riyadh branch. By convention, a sample error of 5% is accepted, thus allowing a sample of 400 students. To cover the percentage of non-responses, extra 200 units were randomly collected for 587 respondents after discarding incomplete questionnaires (Malhotra, 1999). The independent variables were operationalized as a series of five-point Likert scale questions. As for the dependent variable, a dichotomus scale included two possible answers indicating the students' intention to withdraw or continue.

Discriminant Analysis (DA) is the most appropriate technique for this study because the independent (institutional) variables are several and metrical, while dependent is binomial. The main purpose of a discriminant function analysis is to predict group membership based on a linear combination of the interval variables (Malhotra, 1999 ; Hair et al., 1998). The procedure begins with a set of observations where both group membership and the values of the interval variables are known. The result of the procedure is a model that allows prediction of group membership when only the interval variables are known.

**Research Design and Analysis**

This article explores the institutional factors that affect the retention/attrition of DL programs students at AOU. To determine the institutional factors that distinguish between those who intend to stay at AOU versus those who intend to leave AOU, a multiple discriminant analysis was used. The dependent variable is the student's intention; it is a two-group categorical variable indicating the student if he/she intend to stay or leave. The independent variables have been profiled using demographic variables to validate the discriminant function in order to ensure their correspondence with the conceptual bases used in the model formulation process (Hair et al., 1998). Such a profile assisted in understanding the characteristics of each group according to the predictor variable. The cross-validation approach is the other way for validating the discriminant results. T he sample that consists of 400 respondents will be used for estimation and development of the discriminant function while the rest 187 respondents is devoted for the

validation of the DA results using holdout sample. The hold out sample was randomly selected from the 587 respondents.

To minimize the measurement error first, internal validity and face validity were done. Then *Cronbach's Alpha* (a) test was applied to guarantee the internal consistency of the respondent's responses . The reliability is appropriate > 0.5, which means that analysis can be conducted. (Hair et al., 1998)

Alpha = .6511

We began with an exploratory factor analysis as a reduction technique to handle the 23 items measuring the academic and social interaction variables suggested in the literature. Given that this is the first time the research is done in this context, the factor analysis was necessary to group the variables objectively. The Eigenvalue used as a cut-off is 1, and 2 variables with factor scores below 0.5 were eliminated from further analysis. The remaining 21 variables loaded on eight factors, which were labelled, as usual, according to the items they included, and then used as our independent discriminant ‘variables' (see table 2).

Table 2: Results of Exploratory Factor Analysis

| | Component | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **Factor 1: Belief in Value of DL and Use of Computer** | | | | | | | | |
| **I do not appreciate the value of DL** | .746 | | | | | | | |
| I believe I am a good user of the computer | .667 | | | | | | | |
| **I feel confident using the computer** | -.633 | | | | | | | |
| I really believe in the value of DL | -.506 | | | | | | | |
| Factor 2: The Quality of Interaction with Instructors | | | | | | | | |
| Quality of instructor was very high | | .780 | | | | | | |
| **Receive reasonable amount of feedback from my instructor** | | .718 | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Instructor can mange the groups well | | .678 | | | | | | |
| **Feedback of my instructor was poor** | | -.544 | | | | | | |
| **Factor 3: Appreciating The Use of Different Media Types at AOU** | | | | | | | | |
| **Use different type of technology at AOU** | | | .763 | | | | | |
| Media varieties which are used in AOU for course delivery are helpful | | | .734 | | | | | |
| **Do not find a great importance for using the media varieties** | | | -.618 | | | | | |
| **Factor 4: Difficulty in Understanding Course Content** | | | | | | | | |
| **I find a great difficulty in understanding the course's content** | | | | .768 | | | | |
| It is easy for me recognize the content of syllabuses | | | | -.573 | | | | |
| **Factor 5: Administrative and Academic Support** | | | | | | | | |
| **Administration support me in choosing the right topics for my study** | | | | | .815 | | | |
| I believe that I got a enough academic support during the course | | | | | .516 | | | |
| Factor 6: **Required skills of writing** | | | | | | | | |
| It is easy for me to communicate through writing | | | | | | -.836 | | |
| **I find difficulty in expressing myself in** | | | | | | .805 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **writing** | | | | | | | | |
| **Factor 7:Requered skill of reading** | | | | | | | | |
| **I enjoy reading books and magazines** | | | | | | | .894 | |
| In general , I do not like reading | | | | | | | -.627 | |
| **Factor 8: Difficulties Dealing with Administration & Peers** | | | | | | | | |
| **Receive reasonable amount of feed back from your peers** | | | | | | | | -.750 |
| I found a great difficulty to deal with the administration | | | | | | | | .564 |

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a Rotation converged in 13 iterations.

We studied the difference in group means for the 400 hundred respondents for each of the eight factors and found it to be significant for only two factors, namely: *Factor 2: the quality of the interaction with instructors* and *Factor 3: appreciation of the value of technology used in the University* . All factors were entered into the discriminant analysis using stepwise technique, which allows for the determination of variables' relative discriminant ability, only to confirm the selection two factors mentioned above. Applying the standardized coefficients for the two significant factors, the canonical discriminant function is;

Intend to Stay at AOU = + 0.806 quality of instructors + 0.627 Variety of technology used

The discriminant function above suggests that the two categories of DL students, “those who intend to stay at OAU” and “those who intend to withdraw” can largely be distinguished by the extent to which the DL student perceives the institution to have quality DL instructors and a variety of technology used to deliver and support the DL programs. Of the two institutional factors, which seem to influence the students' intentions to leave or persist in the DL programs, the quality of DL instructors the institution has, comes first.

*Classification Statistics and Model Evaluation*

How well does this model perform in such predictive categorization or classification ?

Table 3: Classification Results

| Group Membership | Predicted to Stay | Predicted To Leave | Total |
|---|---|---|---|
| Intend to Stay | **9 (50%)** | 9 | 18 (100%) |
| Intend to Leave | 40 | **76 (65.5%)** | 116 (100%) |

Overall Hit Ratio = 63.4% correctly classified

Errors = 36.6%

Correctly classified “intend to Leave” = 50%

Correctly classified “intend to Stay” = 65.5%

This discriminant function, was used to test the discriminating power of the two factors on the hold-out sample of 187 respondents. The two factors function was able to correctly classify the students who said they intended to stay with a success rate of almost two thirds, and to correctly classify half of those who intend to leave. The overall hit ratio turns out to be 63.4% correctly classified cases ( Table 3): this performance is better than what could be achieved by mere chance . The use of the holdout sample data helped in avoiding over-fitting the model, which could have happened if that model were tested on the data, which were used to develop it.

**Discussion**

It is noteworthy that the measure of attrition or retention that we were able to acquire for this research was the propensity or intention to continue or leave AOU. Many students intend to leave but do not do that for a variety of reasons including lack of viable options, pressure from parents, peers, and mentors, and not willing to turn their investment so far in DL into waste. We believe that when we can obtain data about the actual decision of those students a year or two from now, we can test better the validity of the discriminant model.

The two factors that had discriminating power actually confirm the previous research. The importance of the use of various media types was demonstrated by (Moore, M.G. & Kearsley, G. 1996). AOU (inaugurated in February 2002) is the first university to use distance learning system in education in Saudi Arabia where the rest of the educational institutions are using traditional forms of education. Thus, the barriers to accepting the use of different media have placed an extra load on the administration to develop the basics requirements needed by the students. Interaction was found to have an amazing effect on academic achievement especially in the context of distance learning .

The importance of the quality of the instructors in DL is an issue that has gained wide acceptance. In the literature review, we have presented the different points of view. As for the significance role of the instructor's role, Frankola (2001) primarily emphasized that students will withdraw even in the most sophisticated course in the absence of interaction between the students and the instructor. The instructor role is considered the key component of successful online courses. Here we would like to point out again the seven principles expected to reflect a good

overall instructional design in any class developed and recommended by ( Cohen , 2003) with regard to effective teaching practices.

The model results have some implications to several interested parties. The prominent role played by the quality of DL instructors suggest that the institution administration has either to recruit a new calibre of instructors well adapted to handle DL programs or to transform traditional program instructors into quality DL instructors. This is because DL instructors need different skills and methods of delivering knowledge to students.

The importance of technology in DL is indicated by the fact that the degree to which DL program students appreciate the value of technology provided by the institution, is also a factor. This implies that the administration needs to keep an eye on the latest developments in various areas of relevant technology in order to always be in position to provide adequate support in the delivery and support of DL programs.

Can one generalize the results of this research, as Yin (1994) would recommend, only with caution; and largely to DL programs of institutions with features, attributes and characteristics close to those of AOU. The resultant model is case- study based. However, by testing and re-testing the model on other institutions, particularly in the Arab world and other emerging economies, one can progressively investigate the extent to which the results of this resultant model can be extended beyond the AOU in the Kingdom of Saudi Arabia .

Finally, which way next for further research, we believe that because the focus of this research was to define the institutional variables that significantly discriminate between attrition and retention of students in DL, future research should explore factors that go beyond the academic institution such as the learners' characteristics, and other circumstantial variables. It would of great benefit to try to fit a model that tackles all three categories to see which category of the three (learner's characteristic, institutional and circumstantial variables) has the highest impact on the attrition or retention of students in distance education.

Quantitative Research Considerations,
http://www.Chanimal.com/html/quantitative_research.html

---

**References**

Andersen, J. (1979). " *Teacher immediacy as a predictor of teaching effectiveness "*. In D. Nimmo (Ed.), Communication Yearbook 3, New Brunswick , NJ : Transaction Books, pp. 543

Al-Quds Open University (2001) . Retrieved August 13, 2003 at http://www.qudsopenu.edu/

Arab Gulf Program For United Nations Development Organizations (1999) . Arab O pen University . Retrieved August 11, 2003 at http://www.agfund.org/ebody_aou.html .

*Arab Gulf Program for United Nations Development Organizations* at http://www.agfund.org/

*Arab League Educational, Cultural and Scientific Organization* at
http://www.alecso.org.tn/index.htm

Arab Open University : the main site (2002). at http://www.arabou.org . ; Arab Open University Saudi branch at http://wwwarabou.org.sa .

Astin, A. (1970). *"The Methodology of Research on College Impact (II)"* in *Sociology of Education 43* , 223-254.

Astin, A. (1977). *Four Critical Years: Effects of College on Beliefs, Attitudes, and Knowledge* , San Francisco : Jossey-Bass.

Astin, A. (1993). *What Matters in College: Four Critical Years Revisited* , San Francisco : Jossey-Bass.

Barbadillo J .(1998). "The Distance Learning Student", at

http://seamonkey.ed.asu.edu/~mcisaac/disted/week2/8focuscd.html

Berge and Huang (2004). " A Model for Sustainable Student Retention: " *A Holistic Perspective on the Student Dropout Problem with Special Attention to e-Learning"* , Volume 13 – Issue 5, at http://www.ed.psu.edu/acsde/deos/deosnews/deosnews13_5.pdf

Boyles, L.W. (2000). *Exploration of a Retention Model for Community College Student* , University of North Caroline at Greensboro : Doctoral Dissertation.

Braxton, J.M., Johnson, R.M. and Shaw-Sullivan, A.V. (1997). "Appraising Tinto's Theory of College Student Departure" in J. C. Smart (ed.), *Higher Education: A Handbook of Theory and Rresearch* , New York : Agathon Press.

Buchanan , E . *Assessment Measures: Pre- Tests for Successful Distance Teaching and Learning* , School of Library and Information Science: University of Wisconsin- Milwaukee .

Cabrera, A. F., Nora, A. and Castaneda, M. B . (1992). "The Role of Finances in the Student Persistence Process: A Structural Model" in *Research in Higher Education, 33* (5), 571-59.

Cairo University Open Education Centre at http://www.ou.cu.edu.eg/

Carr, S. (2000). "As Distance Learning Comes of Age, the Challenge is Keeping the Students" in *Chronicle of Higher Education, Information Technology Section* , Retrieved on October 10, 2002, at http://chronicle.com/free/v46/i23/23a00101.htm

Cohen V. L. (2001) . *A Model for Assessing Distance Learning Instruction,* at http://alpha.fdu.edu/~cohen/Assessmentmodel.htm

Cohen V.L. (2003). "Model for Assessing Distance Learning Instruction," in *Journal of Computing in Higher Education* , Spring 2003 Vol. 14, No 2, 98–120.

CSRDE (2000-1). Consortium for Student Retention Data Exchange, *The Retention and Graduation Rates in 344 Colleges and Universities* at http://tel.occe.ou.edu/csrde/execsum.

Diaz, D. P. (2000) . " Comparison of Student Characteristics, and Evaluation of Student Success " in An Online Health Education Course , Unpublished Doctoral Dissertation, Nova South-Eastern University , Fort Lauderdale , Florida . Retrieved on January 26, at http://www.LTSeries.com/LTS/pdf_docs/dissertn.pdf

Diaz, D. P. (2002)."Online Drop Rates Revisited", Retrieved on October 9, at http://ts.mivu.org/default.asp?show=article&id=981

Frankola, K. (2001). "Why Online Learners Drop Out" in *Workforce, 80 ,* 53-58.

Gallie, K. (2005). Student attrition before and after modifications in distance course delivery. *Studies in Learning, Evaluation, Innovation and Development , 2* (3), P.68-75.

Garland , M.R. (1993). "Student Perceptions of the Situational, Institutional, Dispositional, and Epistemological Barriers to Persistence" in *Distance Education, 14:2* , 181-198.

Garrison, D.R . (1990), "An analysis and evaluation of audio teleconferencing to facilitate education at a distance", The American Journal of Distance Education, 4(3), 16-23.

Graham, C., Cagiltay, K., Byung-Ro, L., Craner, J., & Duffy, T. M . 2001, March/April. [online], "Seven Principles of effective teaching: a practical lens for evaluating online courses", *Technology Source* . Retrieved February 18, 2002, from http://ts.mivu.org/default.asp?show=article&id=839

Hackman, M.Z., & Walker , K.B. (1990), "Instructional communication in the televised classroom: The effects of system design and teacher immediacy on student learning and satisfaction", Communication Education, 39, 196-206.

Hair et al . (1998). *Multivariate Data Analysis with Readings* , Fourth Edition, New Jersey : Prentice Hall

Hilgenberg, C., & Tolone, W . (2000), "Student perceptions of satisfaction and opportunities for critical thinking in distance education by interactive video", *The American Journal of Distance Education* , 14(3), 59-73

Hong, K. S., Ridzuan, A. A., and Kuek, M. K. (2003) . *Students' Attitudes Toward the Use of the Internet for Learning: A Study at a University in Malaysia . Educational Technology and Society* , at http://ifets.ieee.org/periodical/6-2/5.html

Kanuka, H., & Anderson, T. (1998), "On-line social interchange, discord and knowledge construction", *Journal of Distance Education* , 13(1), 57-74.

Kinder, Gillis, Reed, Arooz and Carr-Locke, (2002) . " *Student Success and Retention Task Force Report* , Appendix A , at http://www.ryerson.ca/lt/resources/task_force/appendixA.

Libyan Open University (2004 ) . Retrieved February 10 , at http://www.libopenuniv.edu.org/

Machtmes, Krisanna, and J. William Asher. 2000, "A Meta-Analysis of the Effectiveness of

Telecourses in Distance Education.", *American Journal of Distance Education,* 14 (No. 1), 27-46

Malhotra, N. K . (1999). *Marketing Research: An Applied Orientation* , Third Edition, Library of Congress Cataloging –in –Publication Data.

Martinez , M. (2004). "High Attrition Rates in e-Learning: Challenges, Predictors, and Solutions" in the e- Learning Developers' Journal, July 14, at http://www.elearningguild.com

McEwen, B. C. and Gueldenzoph, L. E. (2003). "Retaining Your Online Students", North Carolina A&T State University Greensboro, at http://www.osra.org/2003/mcewen.pdf

McGivney, V . (2004). Understanding persistence in adult learning. *Open Learning ,19* (1), 33-46.

McLean, S. and Morrison, D . (2000), "Learnersê Socio-Demographic Characteristics and Participation in Computer Conferencing", *Journal of Distance Education,* 15, 2, 17-

Mohamed, A. (2005). " Distance Higher Education in the Arab Region: The Need for Quality Assurance Frameworks" in Online Journal of Distance Learning Administration, Volume VIII, Number I, Spring 2005 , State University of West Georgia, Distance Education Center .

Moore, M. G. (2002). "The Pennsylvania State University , USA : The Open University, UK and others" in *Division of Higher Education* .

Moore , M.G, and Anderson , G.W. (2000). "Learners and Learning: The Need for Theory" in Anderson , W.G. (eds.) *A Handbbok of Distance Learning,* The Pennsylvania State University Press.

Moore , M.G. (1994) . "Editorial: Autonomy and Interdependence" in *The American Journal of Distance Education, 8* (2), 1-4.

Moore , M.G. and Kearsley, G. (1996). Distance Education: A systems View , Wadsworth Publishing Company.

Murray, B. (2001) . "What Makes Students Stay?" in *E-Learn Magazine* , at http://elearnmag.org

Navarro, P., Shoemaker, J. (1999), "The power of cyber learning: An empirical test" ., *Journal of Computing in Higher Education* , 11(1), 33

Rwegasira , K. (1988). *Administering Management Development Institutions in Africa* , UK : Avebury Gower Publishing Co

Saba, F. & Shearer, P . (1994), "Distance in Education", *Handbook of research for educational communications and technology* , Edited by David H. Jonassen, New York : Macmillan. In David

Seidman, A. (Ed.) (2005). *College student retention: Formula for student success* . Westport , CT : American Council on Education/Praeger

Sweet, R. (1986). “Student Dropout in Distance Education: An Application of Tinto's Model” in *Distance Education, 7* (2), 201-213.

Syrian Virtual University (2003). Retrieved on February 12, at http://www.svuonline.org/

Tillman, Sr., C.A. (2002). Barriers to Student Persistence in Higher Education, at http://www.nazarene.org/iboe/riie/Didache/Didache_vol2_1/barriers1.html

Tinto, V. (1975). “Dropouts from Higher Education: A Theoretical Synthesis of the Recent Literature” in *A Review of Educational Research, 45* , 89-125.

Tinto, V. (1982). “Limits of Theory and Practice in Student Attrition” in *Journal of Higher Education , 53* (6), 687-700.

Tinto, V. (1993). “Leaving College: Rethinking the Causes and Cures of Student Attrition” in *Research in Higher Education, 27* (1), 15-38.

UNESCO (2002). *“Globalization and Higher Education: Case Study – Arab States* ", a Paper Prepared under the Supervision of the UNESCO Regional Office for Education in the Arab States, First Global Forum on International Quality Assurance, Accreditation and the Recognition of Qualifications in Higher Education” , October 17 – 18, Paris .

UNESCO (2002). Open and Distance Learning, Trends, Policy and Strategy Considerations , Paris , Division of Higher Education.

Willis, B. (1994). *Distance Education - Strategies and Tools and Distance Education - A Practical Guide* , Englewood Cliffs, NJ: Educational Technology Publications.

Yin, R.K., *Case Study Research : Design and methods* ( Sage 1994)

---