

# Effectiveness of Communication Techniques in Distance Education and its Impact on Learning Outcomes at Jordanian Universities (Northern Province)

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## Abstract

The present study aimed at investigating the effectiveness of communication techniques in distance education programs. It aimed to explore the impact of such effectiveness on the student's learning outcomes at Jordanian universities. The researchers adopted a descriptive analytical approach. They developed a questionnaire based on the relevant literature. Questionnaire forms were distributed to 300 students enrolled at Jordanian universities located in the Northern Province. Those students were selected randomly. All the questionnaire forms were retrieved and considered valid and the response rate is one hundred percent. The researchers found that the effectiveness of communication techniques in distance education programs at Jordanian universities is moderate. The communication techniques have moderate impact on students' outcomes in distance education at Jordanian universities. Significant differences exist between the respondents' attitudes which can be attributed to gender and faculties for the favor females and the ones enrolled in human sciences faculties. There isn't any statistically significant difference between the respondents' attitudes which can be attributed to university year. The researchers recommend developing distance education.

**Keywords:** communication techniques, distance education, Jordanian universities

## 1. Introduction

Technology can be used in various areas. It can be used for meeting various needs and requirements. In this regard, the significance of ICT-related developments can't be overlooked. That is because such developments play a significant role in several areas, including the educational and scientific areas. Hence, it has become essential to identify the way of using technology in the educational area. That shall enable one to adapt to life changes and crises. That is needed because many crises have been experienced during the contemporary age.

The 21<sup>st</sup> century is called the (information revolution age) or the social revolution age). During this age, major developments were made to information technologies (Rahman, 2014). Due to such development, the term distance education emerged. Distance education refers to the education that is delivered without having the instructor and the student in the same place (Taylor, 2006). It should be noted that effective communication plays a significant role in delivering education in general and distance education in particular. Through having effective communication, students can share information, thoughts, and ideas. Effective communication provides learners with many learning opportunities. In addition, it contributes to clarifying information. It promotes enthusiasm in learning among students. It contributes to creating relationships between learners (Nkingwa, 2013).

ICTs have significantly improved the teaching-learning process in schools and higher educational institutions (Dintoe, 2018). It should be noted that distance education today involves using ICT (Rahman, 2014). Distance education involves using internet as a medium for communication. It enables students to overcome the spatial and temporal limitations hindering them from learning. It enables students to learn in virtual classrooms and create their own websites and pages (Kayode, 2018)

The teachers and faculty members delivering distance education must be provided with training courses for improving their communication skills. They must be provided with courses about the way of using technology effectively in a

manner that promotes much interaction between students (Kelsey, 2000). Using technologies has many benefits. For instance, it facilitates the way of communicating with others. It enables people to hold global forum online. It enables people to share global news. It enables organizations to make internal networks. It enables people to exchange expertise with each other. It improves the organizational performance and improve the quality of education (Al-Ash'hab, 2015).

It has been proved that technology plays a significant role in delivering education. For instance, it enables students to communicate easily with their colleagues. It enables students to communicate easily with their teachers through using email and chat rooms. It enables teachers to communicate easily with their parents. It enables people to exchange views and opinions which contribute to expanding knowledge, and feel equality. It enables people to express their opinions (Al-Shbool and Alyan, 2014).

During the end of the 20<sup>th</sup> century and the beginning of the 21<sup>st</sup> century, major technological developments were achieved to ICTs. Such developments were achieved for meeting various goals. For instance, they were achieved for achieving social and economic development. They were achieved for improving education. Hence, schools and universities today must employ modern technologies (Kareem, 2015).

## **2. Statement of the Problem**

Information and communication technologies (ICTs) play a significant role in the educational field. For instance, they play a significant role in promoting knowledge and awareness among people. They play a significant role improving the quality of education. They play a significant role in storing, managing and disseminating information. They play a significant role in promoting interaction among learners.

It has been proved that information and communication technologies contribute to improving the learning experiences of students. ICTs contribute to improving the quality of education. They increase the amount of knowledge that students have. They improve the students' skills in presenting information. In the light of the aforementioned information, the problem of this study is represented in the following questions: How effective the communication techniques in distance education programs is in the Jordanian universities located in the Northern Province? What is the impact of the effectiveness of those techniques on students' learning outcomes in Jordanian universities?

## **3. The Study's Objectives and Questions**

This study aimed to explore the effectiveness of communication techniques in distance education and their impact on students' learning outcomes at Jordanian universities. It aimed to explore whether there is any significant difference between the respondents' attitudes which can be attributed to (gender, university year, or faculty). To be more specific, this study aimed to answers following questions:

Q.1. How effective the communication techniques in distance education programs is in the Jordanian universities located in the Northern Province?

Q.2. What is the impact of the effectiveness of those techniques on students' learning outcomes in Jordanian universities?

Q.3. Is there any statistically significant difference between the respondents' attitudes which can be attributed to (gender, university year, or faculty)?

## **4. The Study's Significance**

This study is significant due the scarcity of the studies that aim to shed a light on the relationship between the communication methods in distance education programs and students' outcomes. Thus, it fills a gap in the relevant literature. It is significant due to the significance of ICTs in education. For instance, ICTs play a significant role in delivering distance education. They are significant because they play a significant role in education -including distance education- in Jordanian universities from the students' perspective. Using ICTs effectively in education shall improve the planning and interpretation skills of students. It shall enable students to solve problems and hold discussions about the potential solutions of the problems they face. It shall provide students with opportunities to explore the effectiveness of the possible solutions

## **5. Definition of Terms**

The study's terms are defined below:

Communication techniques: They refer to auxiliary tools that increase the effectiveness of education. They contribute to developing the quality of education and facilitating the process of delivering it due to their advantages (Satll, 2018, 34).

Distance Education: It refers to the education through which the instructor and the students are spatially separated. It

involves using a medium for communication (Nkingwa, 2013, 12).

## 6. The Study's Limits

**Spatial limits:** The present study targets the Jordanian universities in the Northern Province (i.e. (i.e. the universities located in Irbid, Jarash, Ajloun and Mafraq).

**Temporal limits:** This study was conducted during the period (June- August, 2020).

**Human limits:** This study targets the students enrolled in the Jordanian universities in the Northern Province (i.e. (i.e. the universities located in Irbid, Jarash, Ajloun and Mafraq).

**Thematic limits:** This study aimed at investigating the effectiveness of communication techniques in distance education programs. It aimed to explore the impact of such effectiveness on the student's learning outcomes at Jordanian universities.

## 7. Limitations

The results of this study can't be generalized, because they are limited to the study's sample, temporal and spatial limits and instrument.

## 8. Previous Studies

Nour Al-Din & Al-Otaibi (2020) aimed to explore the extent to which e-learning contributed to improving the performance of universities in the Arab world. They collected data through reviewing the relevant literature. They adopted a meta-analytical approach. They found that universities in the Arab World seek improving their performance through exploiting all the available internal resources and employing a strategy that improves the quality of their outcomes in terms of education and research. They found that it's challenging for those universities to keep up with the latest challenges in the field of education. They found that those universities deliver e-learning in the aim of improving their performance. They found that improving the performance of those universities requires carrying out a strategic analysis for the workplace environment. It requires preparing all the stakeholder for e-learning

Kayode (2018) aimed to explore the relationships between communication management indicators (i.e. communication practices, and communication tools) form one hand and students' cognitive engagement from another hand in distance learning programs. A conceptual framework for communication management was developed based on Moore's Transactional Distance Learning Theory (TDLT) and other references. The researcher employed quantitative research design. A questionnaire was used to explore the perceptions of 450 instructors who were randomly selected from 3 Malaysian Public universities. The latter universities deliver blending learning programs. It was found that effective communication practices and communication tools have a strong positive impact on distance students' cognitive engagement.

Dintoe (2018) aimed to shed a light on the way the faculty members find it difficult to use of information and communication technology (ICT) for teaching and learning at the University of Botswana. He aimed to explore the impact of demographic variables on the use of technologies. Data is collected through conducting interviews. 9 participants were sampled. Those participants were selected from the Department of Adult Education, at the Faculty of Education at the University of Botswana. The researcher found that the majority of the faculty members use teacher-centered instructional approaches rather than student centered approaches. The extent of using technology for delivering online education is low due to the poor infrastructure.

Hosseini (2018) aimed to explore the use of social media in the social and human sciences faculty. A survey was used to answer the questions of the study. The observation method was used for collecting data. The sample consists form 67 faculty members. It was found that most respondents use social media for communicating with people. The respondents use computers and mobile phones for browsing Facebook and YouTube pages. It was found that social media is used for searching for information in the area of specialization. Gender doesn't affect the respondent's attitudes towards the use of social media in the social and human sciences faculty.

Durak et al (2017) aimed to shed a light on trends in distance education at higher education institutions in Turkey during the period (1986 -2015). They conducted a content analysis. It was found that the academic disciplines that are favored the most are: education and training, followed by Computer Engineering and computer science and control, science and technology, technical education, electrical and electronics engineering and business administration, respectively. In terms of the research area, it was seen that certain areas were dominantly favored. Such area include: "educational technology", instructional design, learner characteristics", distance education systems

Rahman (2014) aimed to explore the role of information and communication technologies (ICTs) in open and distance

educational programs. He aimed to explore the role of social media which is very important for distance learners. It was found that ICTs improve the quality of the provided education. In addition, using ICTs aims to making reforms to the educational system. The rapid advancements related to information and communication technologies (ICTs) provide students with new opportunities. ICTs enable government to address problems related to the quality of education and management of educational systems.

Nkingwa (2013) aimed to explore the barriers hindering people from communicating effectively in distance educational programs at the Open University of Tanzania (OUT) - Tanga Regional Centre. The required data was collected through using a questionnaire. 69 faculty members were surveyed. It was found that the meaning condensation technique was used to analyze the qualitative data which was obtained. The researcher found that Low IT literacy and low English language competency are amongst the main barriers hindering people from having an effective communication in distance educational programs. He found that the management of the latter university didn't provide students with internet service of high quality. The latter management didn't provide students with e-curricula for all courses.

Osaat & Nsereka (2012) aimed to explore the impacts of information and communication technology on the quality of distance education in Nigeria. They aimed to collect data through using a questionnaire. They collected data from 200 students. The reliability of the questionnaire was measured through calculating Cronbach Alpha coefficient. The collected data was analyzed. It was found that information and communication technologies (ICTs) have great impacts on the quality of the provided distance education and the academic success. It was found that the management of National Open University of Nigeria (NOUN) doesn't employ ICTs much. Such ICTs include: radio/television broadcast of lectures, computer aided instruction and tele/video conferencing.

Kelsey (2000) aimed to explore the impact of communication apprehension (CA) on the students enrolled in distance education programs. He aimed to explore the impact of ICT skills on interaction in distance educational programs. Data was collected from 73 students through using a questionnaire. Nine students were interviewed to collect data from them. It was found that having a high communication apprehension affects students' desire to interact with others in distance education programs.

### 9. Comments on the Aforementioned Studies

Contrary to the aforementioned studies, the present study is the only study that targets the universities located in the central province in Jordan. Contrary to the aforementioned studies, it is the only one that sheds light on communication methods in distance education programs and learning outcomes

### 10. Methodology

#### a. Approach

The researchers adopted a descriptive analytical approach.

#### b. Population:

The population consists from all the students enrolled in the Jordanian universities that are located in the Northern Province of Jordan. The universities that are located in the Northern Province of Jordan are: (i.e. the universities located in Irbid, Jarash, Ajloun and Mafraq).

#### c. Sample:

The researchers developed a questionnaire based on the relevant literature. Questionnaire forms were distributed to 300 students enrolled at Jordanian universities located in the Northern Province. Those students were selected randomly. All the questionnaire forms were retrieved and considered valid and the response rate is one hundred percent. The approval of the managements of the universities were obtained. In addition, the approval of each student who participated in the study was obtained.

Table 1. Distribution of the sample in accordance with (university, gender, university year, and faculty)

| Variable   | Category                             | Frequency | Percent |
|------------|--------------------------------------|-----------|---------|
| University | Yarmouk University                   | 166       | 55.0    |
|            | University of Science and Technology | 134       | 45.0    |
|            | Total                                | 300       | 100.0   |
| Gender     | Male                                 | 127       | 42.0    |

|                    |                           |     |       |
|--------------------|---------------------------|-----|-------|
|                    | Female                    | 173 | 58.0  |
|                    | Total                     | 300 | 100.0 |
| University<br>year | First Year                | 69  | 23.0  |
|                    | Second Year               | 74  | 25.0  |
|                    | Third Year                | 87  | 29.0  |
|                    | Forth Year                | 70  | 23.0  |
|                    | Total                     | 300 | 100.0 |
| Faculty            | Humane sciences faculties | 178 | 59.0  |
|                    | Scientific faculties      | 122 | 41.0  |
|                    | Total                     | 300 | 100.0 |

#### d. The Study's Instrument

The study's questionnaire was developed based on the relevant literature. It includes 14 statements. It aims to explore the attitude of the members of the sample towards the effectiveness of the communication techniques in distance education and their impact on students' learning outcomes at Jordanian universities. The rating categories in the latter questionnaire are: never, rarely, sometimes, often and always. The scores of these categories are: 1, 2, 3, 4 and 5 respectively. Demographic data was obtained about the sample through the first part of the questionnaire. The second part of the questionnaire collects data about the effectiveness of communication techniques in distance education at Jordanian universities. It consists from seven items. The third part of the questionnaire collects data about the impact of the effectiveness of the communication methods on learning outcomes. It consists from seven items. The questionnaire forms were passed in Arabic language to students and by hand in Arabic language.

#### e. Validity of the Scale

The validity of the scale refers to the capability of the questionnaire to measure what's intended to measure. It was measured through passing the initial version of the questionnaire to 3 experts who are specialized in education. Those experts were selected from a Jordanian university in order for them to assess it. They suggested that the questionnaire is reliable, clear and relevant to the study's goals. Thus, no changes were made to the initial version of the questionnaire

#### f. Reliability of the Scale

The reliability of the questionnaire was measured through calculating the Cronbach alpha coefficient value. The value of Cronbach alpha is 0.798 which is accepted.

#### g. The Study's Variables

The study's variables are listed below:

The independent variables: Gender, university year, and faculty.

The independent variables: They include the effectiveness of using the communication techniques in distance education. They include: the students' learning outcomes.

#### h. Methods & Statistical Analysis

The SPSS program was used for analyzing the collected data. Several methods were used to analyze data statistically such as frequencies, percentages, means and standard deviations Cronbach alpha coefficient value and multivariate analysis were conducted.

The following criteria were used to classify means:

1–2.49: low

2.50–3.24: moderate

3.25–4: High

## 11. Results and Discussion

### 11.1 Results and Discussion Related to the First Question

Q.1. How effective the communication techniques in distance education programs is in the Jordanian universities located in the Northern Province?

Table 2 shows the means and standard deviations. It presents the respondents' attitudes toward the effectiveness of using communication techniques in distance education at Jordanian universities

Table 2. Means and standard deviations for identifying the level of the effectiveness of communication techniques in distance education at Jordanian universities

| No    | Statements  | M    | S.D  | Rank | Degree   |
|-------|---|------|------|------|----------|
| 5     | Communication techniques play a very important role in delivering distance education                                      | 3.66 | 0.87 | 1    | Moderate |
| 3     | Communication techniques are available for all students in distance education programs                                    | 3.65 | 0.91 | 2    | Moderate |
| 7     | The university seeks using communication techniques in order to ensure that the distance education programs are effective | 3.61 | 0.34 | 3    | Moderate |
| 1     | Due to the nature of the educational environment in the university, I am willing to enroll distance education.            | 3.59 | 1.24 | 4    | Moderate |
| 3     | Offering distance education programs is a new measure for addressing crises   | 3.57 | 1.11 | 5    | Moderate |
| 2     | Students use the latest communication methods   | 3.53 | 0.82 | 6    | Moderate |
| 4     | Distance education can replace <i>face-to-face</i> education through using communication techniques                       | 3.51 | 0.66 | 7    | Moderate |
| Total |   | 3.63 | 0.91 |      | Moderate |

Based on table 2, the extent of effectiveness of the communication techniques in distance education is moderate. That is because the overall mean is 3.63 which is moderate. The overall standard deviation is 0.91.

Statement (5) states the following: "*Communication techniques play a very important role in delivering distance education*". The mean of the latter statement is 3.66 which is moderate. The standard deviation of the latter statement is 0.87.

The mean of statement (4) which states: "*Distance education can replace face-to-face education through using communication techniques*". The mean of the latter statement is 3.51 which is moderate. The standard deviation of the latter statement is 0.66.

The latter result may be attributed to the fact that communication techniques are available to all students and members of the Jordanian society. In fact, internet has become available for all people in society. It has become fast. In addition, smart phones are widely available.

### 11.2 Results and Discussion Related to the Second Question

Q.2. What is the impact of the effectiveness of those techniques on students' learning outcomes in Jordanian universities?

Table 3 shows the means and standard deviations of the respondents' attitudes in this regard.

Table 3. Means and standard deviations for explore the impacts of communication techniques on student's learning outcomes in distance education at Jordanian universities

| No | Statements  | M    | S.D  | Rank | Degree   |
|----|---|------|------|------|----------|
| 9  | Communication techniques directly affect students' academic outcomes                              | 3.63 | 0.67 | 1    | Moderate |
| 11 | Distance learning can't meet the intended goals without having effective communication techniques | 3.62 | 0.71 | 2    | Moderate |
| 8  | Students show better understanding through distance education                                     | 3.61 | 0.63 | 3    | Moderate |

|       |   |      |      |   |          |
|-------|---|------|------|---|----------|
| 10    | Students communicate better with the faculty members through distance education | 3.57 | 0.93 | 4 | Moderate |
| 14    | Students can obtain information faster through distance education               | 3.56 | 0.52 | 5 | Moderate |
| 13    | Distance education contributes to eliminating the differences between students  | 3.52 | 0.56 | 6 | Moderate |
| 12    | Faculty members dedicate more time to students through distance education       | 3.50 | 0.83 | 7 | Moderate |
| Total |   | 3.60 | 0.71 |   | Moderate |

Based on table (3), the degree to which communication techniques affect student's learning outcomes is moderate. That is because the overall mean is 3.60 which is moderate. The overall standard deviation is 0.71. The latter result is inconsistent with the result concluded by Nour Al-Din & Al-Otaibi (2020). For instance, the latter researchers found that e-learning has a major positive impact on the outcomes of universities. The latter result is inconsistent with the result concluded by Kayode (2018). For instance, the latter researchers found that communication practices, and communication tools have a positive impact on cognitive engagement.

Statement (9) states the following: "Communication techniques directly affect students' academic outcomes". The mean of the latter statement is 3.63 which is moderate. The standard deviation of the latter statement is 0.67. Statement (12) states: " Faculty members dedicate more time to students through distance education". The mean of the latter statement is 3.50 which is moderate. The standard deviation of the latter statement is 0.83.

This results in this regard may be attributed to the fact that the communication techniques provide students with opportunities to communicate more with faculty members. Through distance education, students can access the academic material at any time and place. That positively affect the learning outcomes of students.

### 11.3 Results Relate to the Third Question

Q.3: Is there any statistically significant difference between the respondents' attitudes which can be attributed to (gender, university year, or faculty)?

Means and standard deviations are calculated. Table 4 presents these values:

Table 4. Means and standard deviations for identifying whether there is any statistically significant difference between the respondents' attitudes which can be attributed to (gender, university year, or faculty)

| Variable        | Category    | No  | S.D  | M    |
|-----------------|-------------|-----|------|------|
| Gender          | Male        | 127 | 3.57 | 0.81 |
|                 | Female      | 173 | 3.60 | 0.84 |
| University year | First Year  | 69  | 3.63 | 0.78 |
|                 | Second Year | 74  | 3.62 | 0.81 |
|                 | Third Year  | 87  | 3.66 | 0.73 |
| College         | Forth Year  | 70  | 3.65 | 0.73 |
|                 | Humane      | 178 | 3.67 | 0.71 |
|                 | Scientific  | 122 | 3.59 | 0.94 |

Based on table 4, it appears that there are differences between the attitudes which can be attributed to (gender, university year, and college). To identify whether these differences are statistically significant or not at the statistical significance level of  $\alpha=0.05$ , the multivariate analysis of variance was conducted. The results of the latter analysis are presented below through table 5:

Table 5. The results of the multivariate analysis of variance to explore whether the differences are statistically significant

| Source          | Sum of Squares | Df | Mean Square | F     | Sig. * |
|-----------------|----------------|----|-------------|-------|--------|
| Gender          | 0.655          | 1  | 0.655       | 0.786 | 0.000  |
| University year | 0.065          | 1  | 0.065       | 0.154 | 0.115  |

|         |          |     |       |        |       |
|---------|----------|-----|-------|--------|-------|
| College | 8.031    | 1   | 8.031 | 17.711 | 0.030 |
| Error   | 73.345   | 297 | 0.500 |        |       |
| Total   | 1745.609 | 300 |       |        |       |

Based on table 4, it was found that there are statistically significant difference between the respondents' attitudes which can be attributed to (gender, and college). The latter differences are for the favor females and the ones enrolled in human sciences faculties. It was found that there isn't any statistically significant difference between the respondents' attitudes which can be attributed to university year. The latter results are inconsistent with the result concluded by Hosseini (2018). The latter researcher found that gender doesn't affect the respondent's attitudes towards the use of social media in the social and human sciences faculty

The latter result may be attributed to the fact that the number of females in Jordanian universities is greater than the number of males. The latter result may be attributed to the fact that students in human sciences faculty are in need for receiving practical training rather than receiving theoretical knowledge.

## 12. Conclusion

The present study aimed at investigating the effectiveness of communication techniques in distance education and its impact on student's learning outcomes at Jordanian universities. Analysis was conducted to investigate such effectiveness and impact. Through this analysis, the researchers found that the effectiveness of communication techniques in distance education programs at Jordanian universities is moderate. The communication techniques have moderate impact on students' outcomes in distance education at Jordanian universities. Significant differences exist between the respondents' attitudes which can be attributed to gender and faculties for the favor females and the ones enrolled in human sciences faculties. There isn't any statistically significant difference between the respondents' attitudes which can be attributed to university year. The researchers recommend developing distance education.

## 13. Recommendations

The researchers recommend:

Making changes to improve the quality of the provided distance education at Jordanian universities.

Using modern e-learning platforms at Jordanian universities

Providing students with training courses about the way of using ICTs. That shall contribute to providing distance education of high quality during any crisis.

Making sure that there is an e-version for all curricula at Jordanian universities

## 14. Suggestions for Future Research

The researchers recommend

-Conducting more studies about the effectiveness of distance education programs in universities

-Conducting studies that explore the impacts of distance education programs in universities on achievement

-Conducting studies about the factors affecting the quality of communication in distance education programs in universities

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