

Academic Rate And Gender Relationship To University Distance-Learning Students' Satisfaction On Educational Discussion Forums

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Abstract: In this study, we examine the relationship between academic rate and gender (sex) to the degree of satisfaction of students in university distance-learning programs on educational discussion forums (EDFs). We used the descriptive approach to examine the relationship between variables. The measure of satisfaction with the educational environment of discussion aimed to measure the degree of student satisfaction on education, learning, interaction, collaboration, and teamwork. The research sample consisted of 384 students in distance-learning programs at King Faisal University for the university academic year 2022–2023. The result of the research showed that the degree of satisfaction of students in distance-learning programs at the University with EDFs was large and that variables of academic or gender ratio had no statistically significant impact on the sample's responses to the scale of satisfaction with EDFs.

Keywords: Distance Learning, University Education, Educational Discussion Forums, Educational Satisfaction, Academic Rate, Gender.

Introduction

Distance university education is an investment in human development because of the return beneficiaries receive. Through distance learning, people become aware of wishes they have not been able to accomplish and conditions that prevent them from completing their education. In addition, distance learning stimulates learning and increases rates of excellence and educational achievement when the environment is attractive and supportive.

There are many distance-learning apps. They have contributed to the delivery of scientific content and interaction between parties in the educational process, including educational discussion forums (EDFs), an asynchronous communication tool in the electronic environment. An EDF is defined as a social software on the Internet that allows users to send messages to members to discuss and comment, either in a successive way or in a staggered way (Mathy, 2011). Hew, Cheung,

and Ng (2018) defined EDFs as an online communication environment that allows individuals to interact with each other without limitations of time and space, either by text or by visual communication tools. Asynchronous discussions begin with an initial post, and followers can respond with comments, questions, or any other thoughts (Afifi, 2017). This indicates that what distinguishes EDFs from other forms of communication is the organization of ideas, promotion of critical thinking, support for building collaborative knowledge, promotion of active education, or self-regulation of learning (Al-Oqab, 2017). In addition, Al-Omari (2016) noted that many studies have shown a positive correlation between the educational environments of the Internet and different knowledge outputs in the educational process because human interaction is an important part of learning. Al-Omari also recommended the use of various no simultaneous e-learning tools, including discussion forums, which have a significant

role in increasing learner interaction, increasing their social presence and belonging with their study group and their teachers. In contrast, learner satisfaction levels are an important aspect through which the quality of the distance learning environment can be assessed (Virtanen et al., 2017). Student satisfaction is defined as “the perceived value of the learner’s experiences in the educational environment” (Bolliger & Erichsen, 2013, p. 5). Satisfaction is generally seen as a result of experience, and learner satisfaction is one of the most desirable outcomes in the use of new technologies and services. Previous studies have addressed the concept of satisfaction in different educational settings, including learning environments as the main result of the use of technology (Virtanen et al., 2017).

Research Problem

University education programs have diversified and multiplied for many reasons, including significant growth in the use of distance learning. Many universities have been keen to introduce programs that are attractive to teachers by developing educational platforms and flexible learning systems that are controlled in terms of quality; effectiveness; and variety in terms of applications, including EDFs. These platforms are important for promoting the achievement of the goals of education, learning, solving learning problems, stimulating learning, and achieving educational satisfaction. Parker (2000) indicated that forums are a useful tool in solving many students’ educational problems. Many studies have also shown the benefits of using EDFs. Afifi (2017) indicated that many studies have demonstrated the effectiveness of using EDFs to improve learning outcomes in students. Al-Oqab (2017) found that EDFs play a significant role in enhancing academic performance but that there are obstacles to participating in forums, including lack of computer skills and the passivity of some students, which limits their participation and reduces their motivation. Hamilton and Harland (2012) also found that

there is a need for forums in higher education. Abdulaty (2011) showed that students had positive perceptions about the importance of using EDFs to develop their knowledge, skills, and attitudes, while also recognizing that EDFs supported communication and developed a spirit of cooperation. One of the Saudi universities with a pioneering experience in distance learning is King Faisal University, which made various distance education programs available to contribute to human development and respond to the demand for university education for those who were unable to attend at the typical age. Curricula has been introduced through the University’s educational platform, and most of the tools and applications of e-learning systems have been activated, including EDFs. EDFs provide an environment for interaction between students, educational content, and teachers from a socially structured learning perspective. They contribute to the development of learners’ thinking and support learning communities. However, there are several reasons education goals may not be achieved from interaction and participation in EDFs. Some professors have revealed that lack of or the absence of good interaction within EDFs may affect students’ dissatisfaction with the discussion environments in learning forums. Solving this problem requires understanding the things that affect students’ satisfaction with EDFs and their relationship to gender and academic rate.

Research Hypotheses

1. Learning, interaction, and teamwork through EDFs produces a degree of satisfaction among university distance-learning students.
2. There are statistically significant differences in the responses of study subjects according to specific variables (gender, academic rate).

Research Objectives

- Clarification of the relationship between academic rate and gender to

the degree of satisfaction with the EDFs of students in distance-learning programs

- Monitoring and measuring the level of satisfaction with EDFs in the opinion of distance-learning students.
- Learning about the general picture of EDFs in distance-learning programs at the university level.

Research Importance

This research is important in several respects:

- Expanding research prospects for the development of distance-learning systems at the university level
- Clarifying the views of the beneficiaries of distance-learning programs at the university level and their relation to the expansion of programs
- Giving the people responsible a picture of the status of the distance-learning system at the university level and informing them of the negative and positive factors affecting the success of the system of management and operation of distance-learning programs.

Research Terms

- **Academic rate:** The student's level of progress in university education programs offered by the distance-learning system that expresses the academic rate in either a favorable proportion or estimates with digital connotations (accepted, good, very good, excellent)
- **Student satisfaction:** The perceived value of the learner's experiences in the educational environment (Bollinger & Erichsen, 2018). The researcher defined student satisfaction procedurally as the level of acceptance and positive or negative perception shown by students of university

distance-learning programs featuring EDFs.

- **Distance learning:** Al-Samhan (2021) defined this as planned education that usually takes place in a location different from normal teaching. It requires the design of curricula, special teaching methods, communication through multiple technological means, and special administrative and organizational procedures. The researcher defined distance learning procedurally as a form of teaching and learning offered through electronic environments using applications and tools in a unified system.
- **EDFs:** A tool of the distance-learning system that allows student and teacher users to share and discuss information written for educational purposes. It is one of the social software systems on the Internet that allows users to send messages to members for discussion in a successive or staggered way. EDFs can include different sections specializing in particular topics (Mathy, 2011). Also, Omari (2016) defined EDFs as one of the communication tools in the learning management system (Blackboard) between a group of learners in a joint course, through which they participate in writing in the course's subjects, send inquiries and educational content, and make available meaningful discussions among members of the group under the direct supervision of the professor in a combined effort to support the professor's traditional lectures.

Research Determinants

- **Objective determinants:** The topic of research was limited to studying the relationship between academic rate and gender regarding the satisfaction of students in university distance-learning

programs featuring EDFs at King Faisal University.

- **Human determinants:** Students enrolled in distance-learning programs during the university academic year 2022–2023 at King Faisal University were identified for the purpose of achieving research objectives.
- **Time determinants:** The application of the research was limited to the university academic year 2022–2023
- **Spatial determinants:** The research was conducted at King Faisal University in the eastern region of Saudi Arabia.

Theoretical Framework for Previous Research and Studies

1. Types of EDFs in Distance-Learning Management Systems, Their Educational Characteristics, and Benefits

The forms of EDFs vary according to the scientific subject under discussion. Nasr (2013) stated that they have several forms: lectures, debates, discussion, reports, and intellectual sessions. There are many factors that characterize EDFs, including mobility, communication and interaction, access and availability, flexibility, exchange and sharing, ease of control, economics and cost reduction, relay, complementarity, registration and preservation, acceptance of views, and positive impact on users (Bowden, 2012; Hancock & Rowland, 2017; Tan, 2017).

The use of EDFs in distance-learning environments has many benefits for the educational situation:

- Increasing accessibility and opportunities for interaction and educational flexibility because discussions are nonsynchronized and independent in time and space
- Providing students with extra time to think and look for additional

information before contributing to the discussion

- Encouraging students to interact positively in the discussion in a variety of ways, including through written and audio messages
- Creating a shared, interactive, and effective learning environment that allows students to express their views and ideas freely
- Encouraging learners to engage in dialogue and exchange views among themselves
- Encouraging learners to build knowledge and connect what they are currently learning with their past knowledge
- Developing learning communities by promoting learning and collaborative teamwork
- Allowing learners to express their thoughts and accept others' thoughts with freedom and ease
- Developing structured thinking skills that allow learners to interpret and analyze, process information, and clarify their suggestions and ideas rather than respond from memory
- Discussing ideas and reading favorite subjects to exchange solutions and opinions to problems, as required by their involvement in constructive critical processes, creative thinking, and critical thinking
- Establishing a virtual community to give learners a sense of group's identity
- Developing writing skills and accuracy because there is time flexibility, which gives students the opportunity to think deeply about what they write, as opposed to oral discussions where there is a great deal of improvisation (Abdelaty et al., 2017; De Wever et al., 2010; Hancock & Rowland, 2017).

In a related context, many studies have emphasized the importance and role of EDFs

for learners in the university learning process. Abdulaty (2011) showed that students had positive perceptions about the importance of using EDFs in developing their knowledge, skills and attitudes, communication, and cooperation. Hamilton and Harland (2012) showed the need to use forums in higher education. Naranjo et al. (2011) aimed to identify university students' views about the quality of the knowledge gained from discussion forums and found statistically significant differences in students' trends regarding the use of forums as a tool for obtaining knowledge. Bowen et al. (2012) aimed to learn about the perceptions and perspectives of university students in Canada regarding the importance of using electronic panel discussions. Al-Omari (2016) demonstrated the importance of employing various nonsimultaneous e-learning tools, including EDFs, which have a significant role in increasing learner interaction and increasing their social presence and belonging among their study group and with their teachers. Olivier (2016), wrote a paper called "The Impact of Direct Communication & Online Discussion Forums on the Academic Performance of Students of Open Distance Learning," the most notable result of which was that students who participated in EDFs performed significantly better. Lai-Wah (2016) also aimed to verify the effectiveness of e-discussion forums in the learning process. A study by Afifi (2017) found that assigning roles to learners in EDFs had a significant impact on the development of critical thinking skills and contributed to the development of social learning skills. The Al-Oqab study (2017) also found that EDFs play a significant role in enhancing academic performance. There are also obstacles to participation in forums, including lack of computer skills and passivity of some students, which limits their participation and reduces their motivation. Ohliati and Abbas (2019) showed that quality of service was the most common factor affecting user satisfaction within the learning management system. Al-Jehani (2020) showed that the first fundamental

step to achieving success in any learning management system is initial acceptance from the end-user and satisfaction with its use. High user satisfaction indicates a future desire to reuse learning tools and predictions about students' perceptions and beliefs about the use of these tools.

2. Factors Affecting Learners' Satisfaction With the Debate in the E-Learning Environment

Previous literature and research findings on key factors affecting learners' satisfaction with discussion in an e-learning environment has varied, including the study by Cidral et al. (2018), in which researchers focused on the determinants of student satisfaction within e-learning environments. The results showed that the determinants of student satisfaction within an e-learning environment were the quality and use of the system, the curriculum, the professor's trend toward e-learning, diversity in evaluation methods, the quality of collaboration or perceived learning with others, the quality of information, and perceived individual impact of the user. Similarly, Mtebe and Raphael (2018) examined the factors that affect the satisfaction of learners from the e-learning system at the University of Dar es Salaam, Tanzania. The researchers found that the quality of the system, the quality of the professor, the quality of the service, and the quality of the course had a significant positive impact on learner satisfaction. Also, Al-Samarraie et al. (2017) identified key factors that affect students' satisfaction with e-learning in the context of higher education. The results showed five key factors that affect student satisfaction within the e-learning environment: quality of information, quality of the system, aptitude for technological tasks, realization of benefit, and usefulness.

Chen and Yao (2016) also addressed the underlying factors affecting learner satisfaction in the integrated learning environment. They defined five dimensions of learner satisfaction: satisfaction with the professor, course content, satisfaction with the technology used, the existence of design, and

general satisfaction with the learning environment. The results of the single variable regression analysis revealed that all six dimensions are positively associated with the satisfaction of the perceived e-learner, and the multivariable regression analysis also demonstrated that the design dimension is a critical factor affecting the learner's satisfaction with the integrated learning environment. Social presence and the ability to perceive others in an online learning environment have been shown to affect students' motivation and participation (Richardson et al., 2017). Al-Jahni (2020) also showed that the quality of the system, the quality of information, and the quality of the service had a positive impact on user satisfaction, and the use of the system also had a positive impact on user satisfaction.

Methodology

This research used the descriptive approach, which not only describes the phenomenon and collects data but also includes the organization of data, interpretation, analysis and comparison, and achievement of accurate scientific findings on the nature of the phenomenon and appropriate solutions to it. This method was used to learn about learners' satisfaction with distance learning programs regarding EDFs.

Community and Sample Research

The research community is composed of all 384 students enrolled in distance learning programs for the university year 2022–2023. King Faisal University sent all 384 distance students an electronic link to the measurement tool. One hundred eighteen students responded with a correct response rate of 24.38%, the size of the target sample. The distribution of the sample according to research variables was as follows: sex variable (42 males, 76 females), academic rate variable (15 excellent, 21 very good, 47 good, 35 acceptable).

Research Tools

The achievement of research objectives required development of a measurement of students' satisfaction with EDFs. The dimensions and vocabulary of the measurement have been defined after access to various research frameworks, theoretical orientations, and definitions to take advantage of previous studies and the metrics used. In light of the research objectives, the dimensions of the scale have been identified in two main pillars that measure students' satisfaction with distance learning program regarding EDFs. Fourteen included language that follows educational satisfaction (education and learning) and were measured by a number (eight phrases). Satisfaction with interaction, cooperation, and collective action is also measured by a number (six phrases).

The phrases of the scale were formulated to ensure that the language was clear and easy to understand and that the phrases were varied and comprehensive to the dimension below. The researcher used the five-step measurement method, according to the Likert scale, to measure students' satisfaction with EDFs to be very satisfactory (5), highly satisfied (4), acceptable (3), dissatisfied (2), and highly dissatisfied (1).

To verify the veracity of the scale, the wording in its preliminary form was presented to a group of experts and amended in light of the experts' observations. The necessary adjustments were made, thereby ascertaining the suitability of the measure.

The researcher also verified the internal authenticity of the scale—internal homogeneity—by calculating the matrix of the correlation coefficients between the grades of its expressions and the overall degree of the dimension below which the phrase falls as well as the correlation coefficients between the dimensions of the scale and its overall degree. To demonstrate the internal consistency of its components, the coefficients' values ranged from 0.418 to 0.739, which are indication at 0.05, indicating the internal consistency of the components of the scale and the coherence of

its expressions. Also, the scale constant has been calculated by the alpha reliability coefficient, valued at 0.842, and the previous value indicates that the scale in question is highly stable and fit for use for the current research.

Data Analysis

To analyze research data and information, the researcher used appropriate statistical methods for the study, which are frequencies and percentage descriptions of the research sample and analysis of their responses to satisfaction scale phrases; arithmetic means and standard deviation were used to determine students' responses. The Pearson correlation coefficient was used to calculate the sincerity of the internal consistency of the satisfaction scale, and Cronbach's alpha coefficient was used to calculate the scale's stability. A t-test was used to find the difference significance of the sample's responses according to their variables. A one-way ANOVA was used to find the difference significance of the sample responses according to their variables. The Scheffe test was used for multiple comparisons between arithmetic means.

Research Results

First: Findings Related to Hypothesis 1: Learning, Interaction, and Teamwork Through EDFs Achieves a Degree of Satisfaction Among University Distance-Learning Students

The researcher calculated the frequencies, percentages, and arithmetic means (M) of the study sample responses on the student satisfaction scale in the following aspects:

- Educational satisfaction (teaching and learning)
- Satisfaction with interaction, cooperation, and teamwork

The researcher discussed the results in light of the following: the student satisfaction score was "Very High" if M was above 4.2.¹ The score was "High" if M was between 3.4 and 4.19. The degree was "accepted" if the M of service importance was between 2.6 and 3.39; "Unsatisfied" if the average arithmetic of service importance was less than 2.59 and 1.8. The degree was "Largely Dissatisfied" if the M of service importance was less than 1.8. The results were as follows:

1. **Educational Satisfaction.** Table 1 shows students' educational satisfaction with distance learning programs related to EDFs.

Table 1: Arithmetic Means (M) and Standard Deviations (SD) of Students' Answers to Educational Satisfaction in EDFs

No	Phrase	M	SD	Degree of satisfaction
1	EDFs have contributed to increasing my interest, focus, and retention of information.	4.16	0.96	High
2	The educational discussion environment allowed me to carry out my educational tasks more effectively.	4.16	0.96	High
3	The content of the discussion was clear, useful, and interesting.	4.08	0.93	High
4	It was easy for me to understand content through discussion forums.	4.11	0.97	High
5	The instructions were clear to me.	4.16	0.91	High

¹Range = (the difference between the greatest value and the lowest value) divided by the number of response categories.

6	The methods used in the discussion desks were varied and allowed me deep understanding.	40.6	0.95	High
7	My level of participation in the discussion forums was fun and appropriate for me.	3.86	0.97	High
8	I received immediate feedback from my colleagues during the discussion via the forum.	3.80	0.96	High
	General average	4.04	0.37	High

By reviewing the results in Table 1, the degree of student satisfaction with distance learning programs regarding EDFs was High with the M of the responses to all of this aspect's phrases (4.04), with a standard deviation of capacity (0.37). This value falls well within the range of satisfaction.

Table 2: Arithmetic Means (M) and Standard Deviations (SD) of Students' Answers About

No	Phrase	M	SD	Degree of satisfaction
9	The discussion forums provided me with easy and quick identification of information about my colleagues and teachers.	4.20	0.97	Very High
10	The system of discussions supports active engagement with my colleagues and teachers.	4.022	0.95	Very High
11	The discussion forums support interaction with content and generate interest in the topic.	4.07	0.94	High
12	I learned more through interaction with colleagues in discussion groups than through lectures in classroom rooms.	4.33	0.84	Very High
13	The discussion forums provided me with easy and comfortable communication with my colleagues and teachers.	4.13	0.82	High
14	The EDFs provided me with discussion forums to collaborate and share files and content easily with my colleagues.	4.40	0.83	Very High
	General average	4.25	0.42	Very High

By reviewing the results in Table 2 students' degree of satisfaction with distance learning programs regarding interaction, collaboration, and teamwork in EDFs was Very High), with the M of their responses on all phrases of this aspect (4.25) reached by a standard deviation of capacity (0.42). This value falls within the acceptable range of satisfaction.

In light of the foregoing, previous findings in Tables 1 and 2 indicate a high

2. Satisfaction With Interaction, Cooperation, and Teamwork.

Table 2 shows students' satisfaction with distance-learning programs regarding interaction, cooperation, and teamwork in EDFs.

Satisfaction With Interaction, Cooperation, and Teamwork in EDFs.

degree of satisfaction among university distance-learning students regarding learning, interaction, and teamwork across EDFs. This validates Hypothesis 1.

Second: Findings Related to the Hypothesis 2: There are Statistically Significant Differences in the Responses of Study Subjects According to Variables (Gender, Academic Rate).

The researcher used a one-way ANOVA disparity analysis, and a t-test to indicate the differences in individual sample responses to

- 1) Gender: (male, female)
- 3) acceptable, good, very good, excellent)

(a) The gender variable effect of the sample's responses on the axis of the satisfaction scale with the discussion in the distance educational environment.

Table 3 shows the computational averages and standard deviations, the value of the V test, and

the axes of the debate satisfaction scale in the electronic environment, according to the following variables:

- 2) Academic rate: (

the level of indication of the sample responses to the study scale of satisfaction with the distance educational debate environment according to the variable: sex/gender (male, female).

Table 3: Arithmetic Means Averages (M), Standard Deviations (SD), T-Test Value, and Indicative Level of Study Sample Responses on the Scale of Satisfaction with the Educational Remote Discussion Environment According to Variable **Gender**.

Satisfaction Scale Axes	Males (n = 42)		females (n = 76)		Degree of freedom	Value of "T"		Indicator of indication	Indicative level
	M	SD	M	SD	M	SD	M	SD	
Educational satisfaction	4.05	0.31	4.04	0.40	116	0.147	0.880		Irrelevant
Satisfaction with interaction, cooperation, and teamwork	4.23	0.35	4.28	0.47	116	0.605	0.139		Irrelevant

Table 3 shows that no statistically significant impact in sample responses on the scale of satisfaction with EDFs in the distance-learning environment in its dimensions (educational satisfaction, satisfaction with interaction, collaboration, and teamwork) in the distance discussion environment is due to the variable type of male or female scholars, thus rejecting the validity of the second hypothesis.

(b) The impact of the academic rate variable on the sample's responses to the axes of the debate satisfaction scale in the electronic environment.

Table 4 shows the statistical description of the sample's responses, and Table 5 shows the difference between responses using the one-way ANOVA. This is as follows:

Table 4: Arithmetic Means (M) and Standard Deviations (SD) of Sample Study Responses on the Scale of Satisfaction With Debate in the Electronic Environment According to Variable: Sex (Male, Female).

Satisfaction scale axes	Acceptable N = 35		Good n = 47		Very good n = 21		Excellent n = 15	
	M	SD	M	SD	M	SD	M	SD
Educational satisfaction	4.01	0.43	3.98	0.35	4.20	0.35	4.14	0.20
Satisfaction with interaction, cooperation, and teamwork	4.31	0.41	4.24	0.52	4.19	0.37	4.26	0.21

Table 5: One-Way ANOVA of Sample Study Responses on the Scale of Satisfaction with Discussion Forums in the Electronic Environment According to Variable: Academic Average

Axes	Source of variation	Total boxes	Degree of freedom	Average boxes	Value T	Indicator of indication	Indicative level
Educational satisfaction	Intergroup	0.889	3	0.296	2.22	0.09	Irrelevant
	Within Groups	15.209	114		0.133		
	All	16.098	117				
Satisfaction with interaction, cooperation and teamwork	Intergroup	0.216	3	0.072	0.384	0.765	Irrelevant
	Within Groups	21.373	114	0.187			
	All	21.589	117				

Table 5 indicates that there is no statistically significant impact on the sample's responses to the measure of satisfaction with the e-discussion environment in its dimensions (educational satisfaction, satisfaction with interaction, collaboration, and teamwork in the remote educational environment) due to the academic rate variable (excellent, very good, good, acceptable); the validity of the second hypothesis is thus rejected.

Conclusion

The results of this study revealed that the degree of satisfaction of students in university distance-learning programs with EDFs from the educational aspect was generally high. The interpretation of large and very large satisfaction scores from EDFs from the study sample's point of view may be due to the following:

- Increase communication and interaction. Discussion forums provided more opportunity for simultaneous and asynchronous contacts and interactions between learners and teachers, among students, and with content that increased levels of satisfaction with the educational discussion environment.

- Exchange and partnership. The discussion forums provided students in university distance-education programs with more collaboration, participation, sharing of files and documents, photos and videos, and engagement with one another in fulfilling the educational duties and assignments required of them in the forums, increasing their levels of satisfaction.
- Increased relay in presenting topics for continuous discussion or taking place in a series of successive processes where comments can be sent to this series or start a new series.
- Increasing the positive impact of EDFs on members' interactions with one another also contributed to the opportunities for student satisfaction with discussion in the electronic environment

Also, the findings revealed that there is no statistically significant impact in the sample responses to the scale of satisfaction with the environment of the EDFs in Bei Distance Education in its dimensions (educational satisfaction, satisfaction with interaction,

cooperation, and teamwork) due to a gender variable or to their academic rate variable (excellent, very good, good, acceptable). This means there is no influence on students' gender variables (male, female) or their academic rate of response on the scale of satisfaction with the discussion forum in the distance-learning environment. This suggests that everyone was very satisfied with the discussion forums in the distance-learning environment. The outcome of the research can be explained by the connectivism theory, a recent theory presented by George Siemens and Stephen Downs (2005) that embraces the idea of networks and communities made up of individuals who want to exchange ideas on a common theme of learning. In the communication model, learners participate in the creation of knowledge through contributions to social media platforms and other forms of online communication. The connectivism theory confirms that information on the Internet is constantly changing, knowledge is constantly flowing and renewed, and the learner's understanding is constantly changing. Communication in its concept depends on the availability of knots and networks with which the learner can interact, a clear reflection of the rapidly evolving nature of social networking technology (Siemens, 2005). Thus, communication theory becomes more appropriate for application in e-distance learning environments. By applying its principles, the learner can learn, share with other learners, and collaborate with other learners. These are among the most important factors of students' satisfaction with distance education programs, in addition to the above (Jehani, 2020). The first fundamental step to achieving the success of any learning management system is the initial acceptance from the end user and satisfaction with its use. The presence of high user satisfaction indicates a future desire to reuse learning tools and predictions about students' perceptions and beliefs about the use of these tools, including EDFs in the distance learning environment. In a related context, the high degree of satisfaction of students of distance university education

programs on EDFs can be explained by the statement that many studies have demonstrated the effectiveness of using EDFs in improving the learning outcomes of many students (Afifi, 2017).

Research Recommendations and Proposals

In light of the results of the current research, the researcher recommends the following:

- 1) Upgrade universities' e-learning tool systems.
- 2) Give attention to the quality of EDFs through a survey of beneficiaries' views.
- 3) Establish a network of EDFs for distance-learning environments among universities for the purpose of increasing the number of beneficiaries.
- 4) Give students in university distance learning programs more academic freedom to promote educational satisfaction and increase self-learning.
- 5) Improve the interface of distance education forums in the learning management systems of university programs.
- 6) Identify the roles and responsibilities of learners in EDFs to facilitate supporting the climate of collective discussion among the members of the same group, exchange experiences, provide facilities for topics of discussion, and provide feedback that will develop discussion among the members of the forum.
- 7) Conduct further research to study ways to increase the positive impact of e-discussion forums on distance learning.

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