On Rapid Transitioning to Online Learning Under COVID-19: Challenges and Solutions at Al al-Bayt University

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Abstract: *The aim of this research work is to study the issues and challenges that Al al-Bayt University faculty members faced in the transition from face-to-face learning to online learning during the COVID-19 pandemic, and to highlight successful online learning strategies adopted. These issues and challenges are identified using question and solution-based analysis covering several issues that include the procedures and mechanisms adopted for the rapid transition from face-to-face learning to online learning, the online learning environment used, the impact of the transition to online learning on faculty members, courses' content and students, and the challenges of online learning and the impacts it had on teaching and scientific research. The successful strategies adopted provide many practical methods for faculty members and leaders to follow for future online learning. In addition, the results of this work are expected to provide faculty members with a clear and insightful view on how to successfully integrate online learning and traditional learning into a blended learning approach.*

Keywords: *Online learning, face-to-face learning, rapid transitioning, COVID-19 pandemic.*

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1. Introduction

Due to the COVID-19 pandemic that has affected the world recently, academic institutions worldwide shifted from face-to-face learning to online learning for various periods of time [4, 5, 6, 7, 10, 12, 13, 14, 15, 16, 20]. The researchers in [8] found that only 23 percent of students were satisfied with online learning, and approximately 19 percent were confident they could build positive relationships within the online learning environment. With these non-encouraging percentages and the possibility that faculty members will likely administer more classes than ever before using an online environment, it is essential to identify challenges and issues in these environments. The researchers in [4, 14, 15] found that many challenges were faced during the rapid transition from face-to-face learning to online learning. These challenges were identified through a series of reflection questions that dealt with how to mitigate obstacles to teaching online.

Transitioning rapidly from face-to-face learning on campus to remote online learning took place at Al al-Bayt University (AABU) and other Jordanian public universities [1, 2, 3]. Many faculty members had never delivered lectures or sessions in an online environment, therefore they needed training in online course preparation, teaching and assessment skills in a very short period of time. They were required to change their teaching method from face-to-face to online and select suitable methods for engaging, encouraging and motivating their students to be involved in the new online learning environment [1, 2, 3, 10, 14, 16, 20]. There are pedagogical approaches to designing online courses that require special techniques for instructional design and remote communication over the internet [9, 19]. Due to the urgency of the COVID-19 situation, academic institutions did not often have enough time to plan for and adopt the proper and systematic way of transitioning to online learning, which normally requires substantial capacity building (i.e., offering learning and development training to students and faculty members) and change management (i.e., striving to reduce the inevitable resistance to institutional changes and its counterproductive consequences). The learners who were familiar with face-to-face learning had to rapidly adapt to online learning. Moreover, the challenges of rapidly transitioning to online learning were exacerbated by the various changes and restrictions accompanying the surges of COVID-19 cases, and the resulting psychosocial stressors that students and faculty members faced [3, 6, 10, 11, 12, 13, 14, 16, 17, 20]. In particular, faculty members and students needed to increase networking and enhance their communication effectiveness during online engagements [5, 16].

This research work aims mainly to study the issues and challenges that AABU faculty members faced while transitioning from face-to-face learning to online learning during the COVID-19 pandemic and highlight successful online learning and transitioning strategies

adopted for dealing with this change. We identify the strategies employed and the challenges faced through question and solution-based analysis that covers a number of issues that include the procedures and mechanisms for the rapid transition from face-to-face learning to online learning due to Covid-19, the online learning environment and procedures used, the impact of this transition on faculty members and courses' content, the impact of the transition on students, and the challenges of online learning and its impact on teaching and scientific research. The successful strategies adopted provide many practical methods for faculty members and leaders to follow for future online learning.

This paper is an extension of that published recently in the 23rd International Arab Conference on Information Technology (ACIT'2022) [3]. The purpose of this paper is to present the online learning environment and procedures used in the transitioning from face-to-face learning to online learning at Al al-Bayt University during COVID-19, and the impact of this transition on students.

The remainder of this paper is organized as follows: Section 2 presents the objectives of this study. Its importance is presented in section 3. Section 4 presents the methodology used in the study. Section 5 contains the results and their discussion. The conclusion and future directions are in section 6.

2. Objectives of the Study

This study aims to achieve the following objectives:

1) Identifying the issues and challenges that AABU faculty members faced in the rapid transition from face-to-face learning to online learning.
2) Identifying the successful teaching strategies they used in online learning.
3) Identifying the successful strategies used in online learning to facilitate integrating online learning into university academic programs.

3. Importance of the Study

This study is important because of its impact on improving the ability of faculty members to use online learning in an effective way, in order to achieve superior educational quality and overcome the challenges faced during the transition from face-to-face learning to online learning.

We believe that this study will also benefit faculty members in higher education institutions when faced with rapid transition to online instruction.

4. Methodology

The descriptive-analytical method [18] was used in the conduct of this study, as it is appropriate for this type of research.

This research was carried out in the form of an online survey of faculty members at AABU using google forms that were administered during the period from February 28 to March 27, 2022. The survey data was automatically stored in the Google Drive database. The survey was sent to AABU deans' WhatsApp group, who then sent it to the faculty members in their colleges. The respondents were 122 out of 430 faculty members from all colleges, including humanities and scientific colleges.

The questionnaire used contains questions about the procedures and mechanisms for the rapid transition from face-to-face learning to online learning during Covid-19, the online learning environment and procedures used, the impact of transitioning to online learning on faculty members, courses' content and students, and the challenges of online learning and its impact on teaching and scientific research. Data was collected online, which allows collecting large amounts of data in a relatively short period of time [15].

5. Results and Discussion

The results in this work paper are associated with the following issues:

1) Procedures and mechanisms for the rapid transition from face-to-face learning to online learning during the Covid-19 pandemic.
2) The online learning environment and procedures used.
3) The impact of the transition to online learning on faculty members and courses' content.
4) The impact of the transition to online learning on students.
5) The challenges of online learning and its impact on teaching and scientific research.

A set of items were determined for each one of these issues. They were to be responded to by the faculty members at Al al-Bayt University. The issues and the analysis of the responses for each item are presented in sub-sections below.

5.1. Rapid Transition Procedures and Mechanisms

This issue embodies the items below. The respondent choices are: to a very large extent, to a large extent, to a medium extent, to a small extent, or to a very small extent:

- The university has arranged online workshops in transitioning to online learning.
- The university has provided the faculty members with technical support in transitioning to online learning.
- From faculty member perspective, students had the technical and computer skills necessary in

transitioning to online learning.
- The technical difficulties that limit the effectiveness of online learning have been addressed

Figure 1 shows the survey results for the online workshops that were arranged by the university on transitioning to online learning. Here, 30% of the respondents believe that the university arranged these workshops to a very large extent, 45% to a large extent, 21% to a medium extent, 4% to a small extent, and thus the results show that the faculty members are satisfied with the online workshops that were organized by the university on transitioning to online learning.

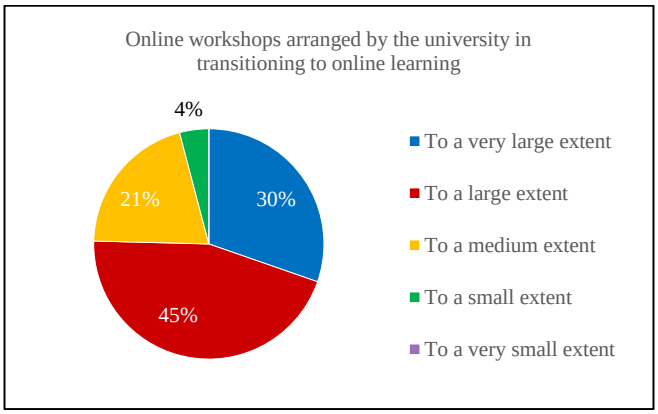

Figure 1. Online workshops that have been arranged by the university in transitioning to online learning.

Figure 2 shows the survey results for the technical support provided to the faculty members by the university in transitioning to online learning, where 22% of respondents believe that the university provided this support to a very large extent, 41% to a large extent, 26% to a medium extent, 7% to a small extent, and 4% to a very small extent, and thus 89% of the faculty members were satisfied with a degree of medium to very large extent with the technical support provided to them by the university in transitioning to online learning.

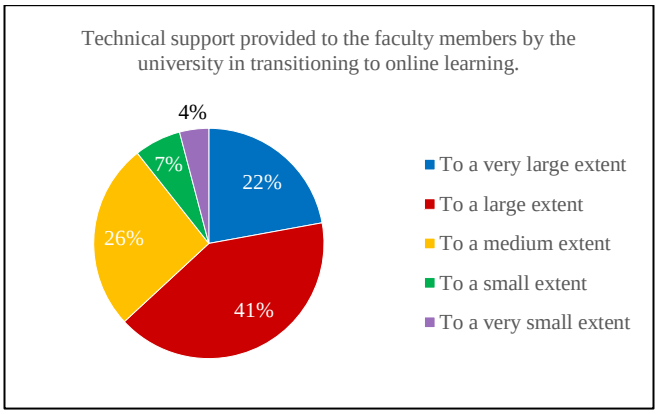

Figure 2. Technical support provided to the faculty members by the university in transitioning to online learning.

Figure 3 shows the survey results for students having the technical and computer skills that are deemed necessary in transitioning to online learning from the faculty members' perspective, where 7% of the faculty members believe these skills to be available to a very large extent, 21% to a large extent, 48% to a medium extent, 16% to a small extent, and 8% to a very small extent, and thus 76% of the faculty members believe that students had the needed technical and computer skills from a medium to a very large extent.

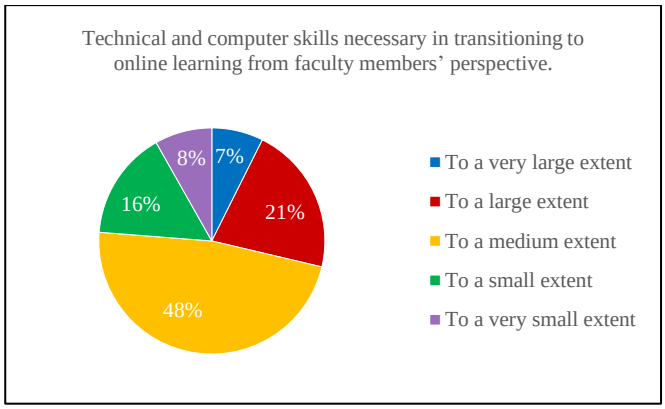

Figure 3. Technical and computer skills necessary in transitioning to online learning from faculty members' perspective.

Figure 4 shows the survey results for whether the technical difficulties that limit the effectiveness of online learning were addressed, where 8% of the faculty members believe that they were addressed to a very large extent, 42% to a large extent, 40% to a medium extent, 7% to a small extent, and 3% to a very small extent, and thus 90% of the faculty members believe that the technical difficulties were addressed to medium to very large extent levels.

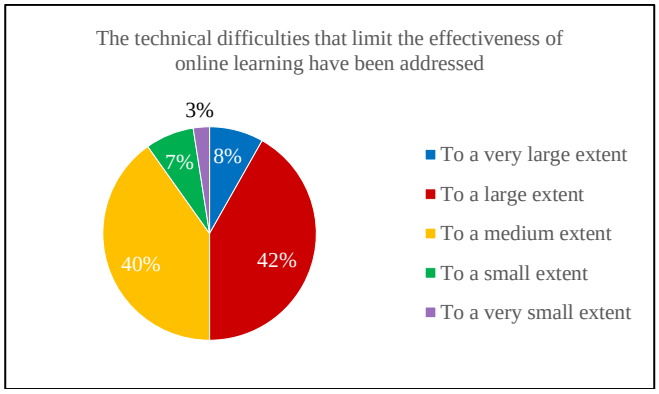

Figure 4. The technical difficulties that limit the effectiveness of online learning have been addressed.

5.2. The Online Learning Environment and Procedures Used

This issue is represented by the items below. Respondents had the following options as answers to these items: to a very large extent, to a large extent, to a medium extent, to a small extent, or to a very small extent:

- Technology was used effectively in the online learning environment.
- Communication with students was more effective in online learning than in face-to-face learningy.

- I, as a faculty member, conducted useful practical activities during Online Learning.
- Interactivity was considered while communicating with students in lectures.
- I, as a faculty member, was as comfortable teaching online as offline.
- I, as a faculty member, changed my teaching style for online learning.
- I, as a faculty member, modified course materials for online learning.
- I, as a faculty member, used multimedia tools (Videos, PPT, Animation) for online learning.
- I, as a faculty member, was giving regular assignments to students.
- I, as a faculty member, was following up regularly on assignments given to students.
- The courses' content and materials were easy to share online with students.
- Internet connection in online learning was suitable.
- The device (mobile/laptop) assigned to the faculty member was suitable for online learning.
- The video conferencing software (Zoom, Google meet, Skype, Moodle, Google Classroom) is easy to use by the faculty member.

Figure 5 shows the survey results for the item: technology was used effectively in the online learning environment from faculty members' perspective. Here, 12% of the respondents believe that technology was used effectively to a very large extent, 47% to a large extent, 29% to a medium extent, 10% to a small extent, and 2% to a very small extent, and thus 88% of the faculty members believe that technology was used effectively in the online learning environment with a degree from medium to very large extent.

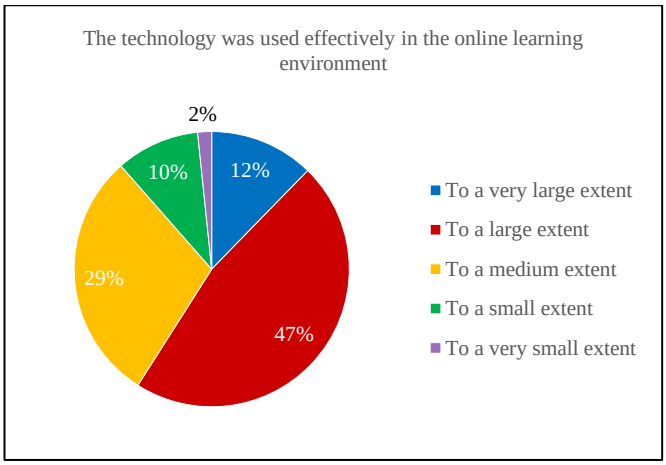

Figure 5. The technology used effectively in the online learning environment.

Figure 6 shows the survey results for the item: communication with students was more effective in online learning than in face-to-face learning, where 10% of faculty members believe that it was more effective to a very large extent, 24% to a large extent, 34% to a medium extent, 17% to a small extent, and 15% to a very small extent. Thus, two-thirds of faculty members believe that communication with students was more effective in online learning than in face-to-face learning with a degree of medium to a very large extent. This was an unexpected outcome.

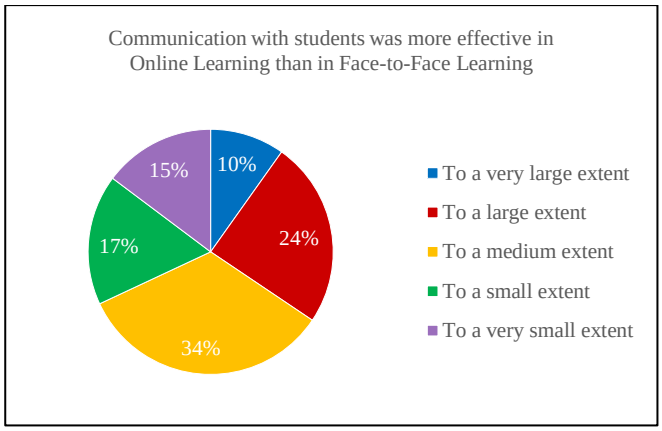

Figure 6. Communication with students was more effective in online learning than in face-to-face learning.

Figure 7 shows the survey results for the useful practical activities conducted during online learning by faculty members, where 17% of respondents believe that they conducted such useful practical activities to a very large extent, 49% to a large extent, 24% to a medium extent, 9% to a small extent, and 1% to a very small extent, and thus, most faculty members (90%) believe that they conducted useful practical activities during online learning to medium to very large extent levels.

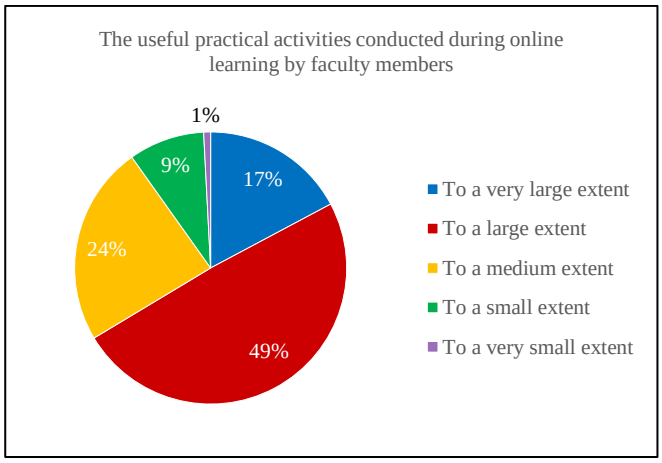

Figure 7. The useful practical activities conducted during online learning by faculty members.

Figure 8 shows the survey results for the item: interactivity was taken into account while communicating with students in lectures, where 15% of respondents believe that it was considered to a very large extent, 40% to a large extent, 34% to a medium extent, 8% to a small extent, and 3% to a very small extent, and thus, most faculty members (89%) believe that interactivity was considered while communicating with students in lectures to medium to very large extent levels.

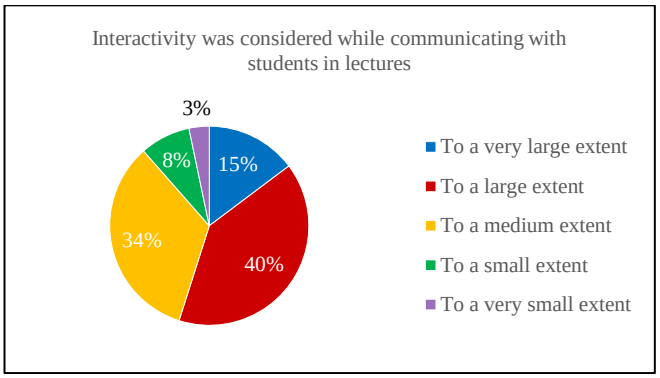

Figure 8. Interactivity was considered while communicating with students in lectures.

Figure 9 shows the survey results for the item: faculty members were as comfortable teaching online as offline. Here, 12% of respondents believe that they were as comfortable to a very large extent, 21% to a large extent, 34% to a medium extent, 16% to a small extent, and 17% to a very small extent, and thus two-thirds of faculty members believe that they were as comfortable teaching online as offline, with a degree from medium to very large extent.

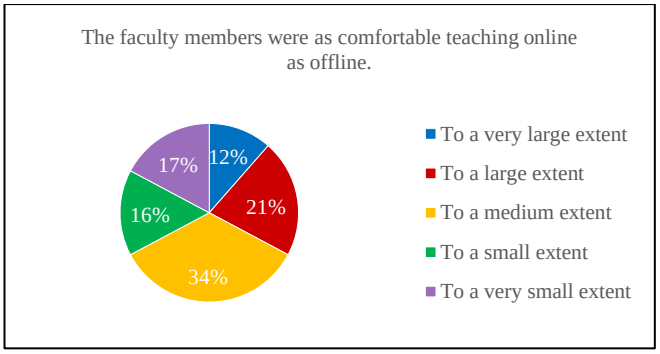

Figure 9. Faculty members were as comfortable teaching online as offline.

Figure 10 shows the survey results for the item: faculty members changed their teaching style for online learning, where 21% of the respondents believe that they did to a very large extent, 55% to a large extent, 20% to a medium extent, and 4% to a small extent, and thus most faculty members (96%) believe that they changed their teaching style for online learning, with a degree ranging from medium to very large extent.

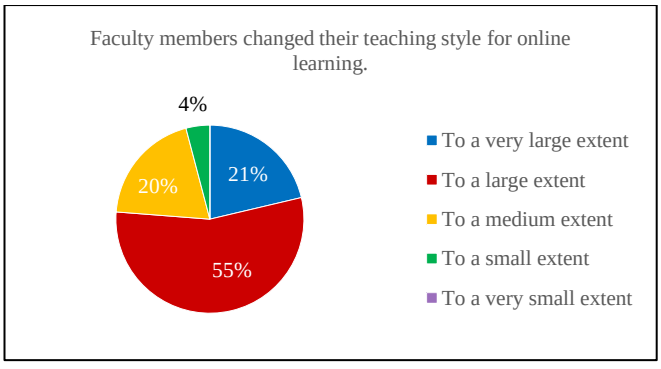

Figure 10. Faculty members changed their teaching style for online learning.

Figure 11 shows the survey results for: faculty members modified course materials for online learning, where 19% of respondents believe that they did to a very large extent, 37% to a large extent, 33% to a medium extent, 9% to a small extent, and 2% to a very small extent, and thus most faculty members (89%) believe that they modified course materials for online learning to a medium to a very large extent.

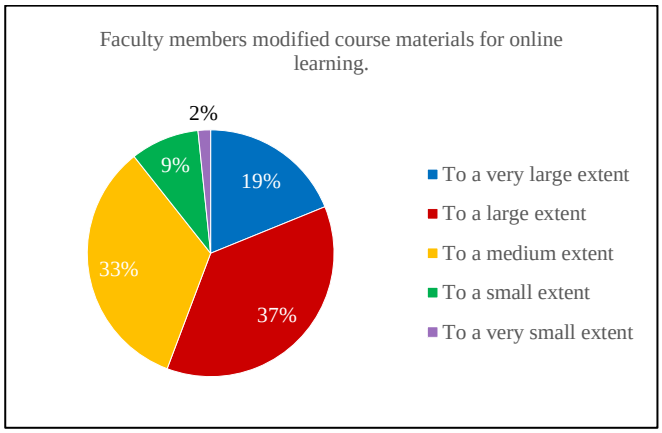

Figure 11. Faculty members modified course materials for online learning.

Figure 12 shows the survey results for the item: faculty members used multimedia tools (Videos, PPT, Animation) for online learning, where 34% of respondents believe that they did to a very large extent, 44% to a large extent, 15% to a medium extent, 6% to a small extent, and 1% to a very small extent, and thus most faculty members (93%) believe that they used multimedia tools for online learning to medium to very large levels.

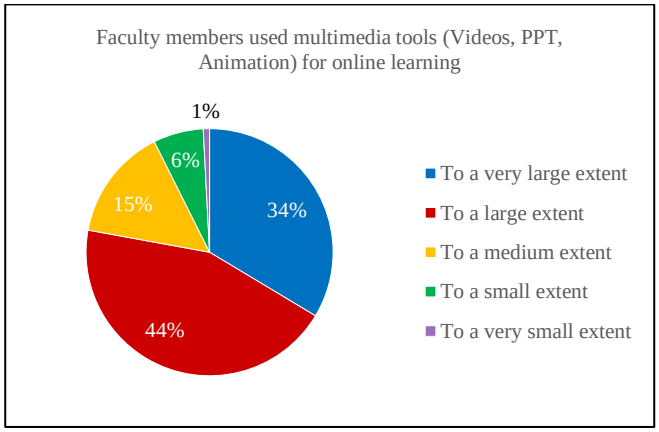

Figure 12. Faculty members used multimedia tools (Videos, PPT, Animation) for online learning.

Figure 13 shows the survey results for the item: faculty members give regular assignments to students, where 28% of respondents believe that they gave regular assignments to students to a very large extent, 43% to a large extent, 23% to a medium extent, and 6% to a small extent, and thus most respondents (94%) believe that they gave regular assignments to students to medium to very large extents.

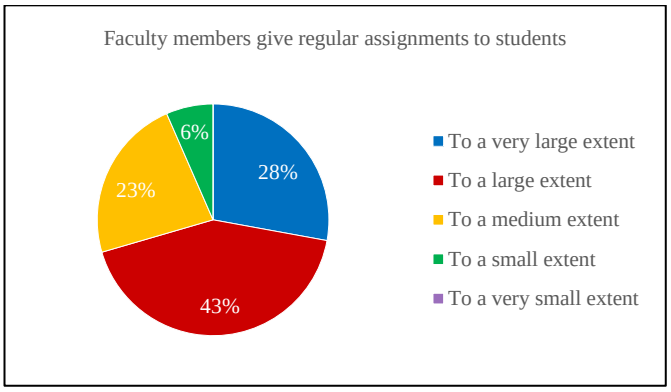

Figure 13. Faculty members give regular assignments to students.

Figure 14 shows the survey results for the item: faculty members follow up regularly on assignments given to students, where 31% of the respondents believe that they did to a very large extent, 48% to a large extent, 16% to a medium extent, 3% to a small extent, and 2% to a very small extent, and thus most respondents (95%) believe that they followed up regularly on students assignments to medium to very large extents.

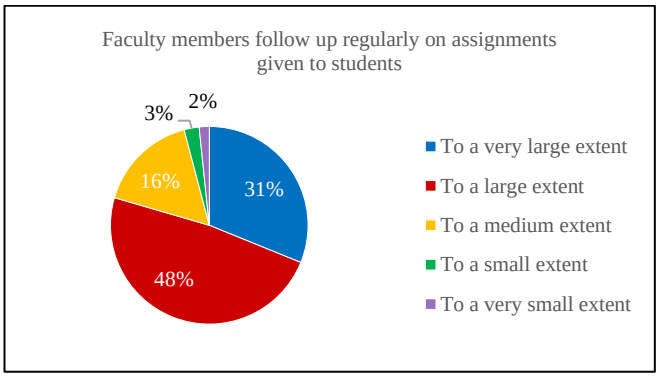

Figure 14. Faculty members follow up regularly on assignments given to students.

Figure 15 shows the survey results for the item: courses' content and materials were easy to share online with students, where 24% of respondents believe that this was the case to a very large extent, 34% to a large extent, 31% to a medium extent, 6% to a small extent, and 5% to a very small extent, and thus most respondents (89%) believe that courses' content and materials were easy to share online with students to medium to very large extents.

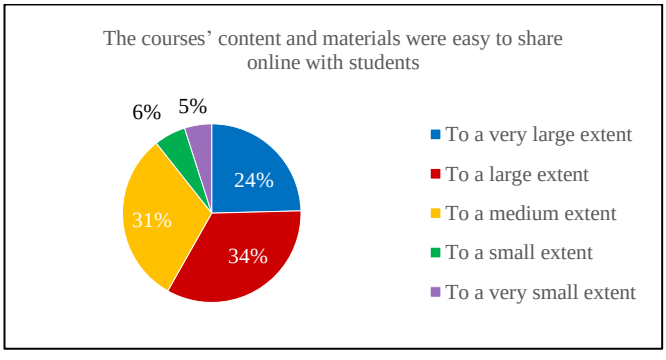

Figure 15. The courses' content and materials were easy to share online with students.

Figure 16 shows the survey results for the item: Internet connection in online learning was suitable, where 13% of respondents believe that it was to a very large extent, 40% to a large extent, 37% to a medium extent, 5% to a small extent, and 5% to a very small extent, and thus most faculty members (90%) believe that internet connection in online learning was suitable to medium to very large extents.

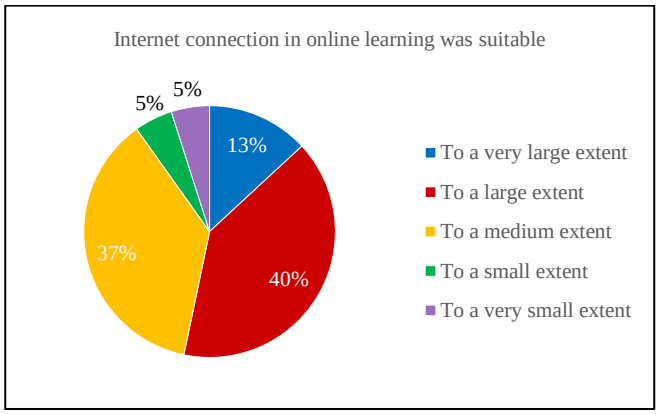

Figure 16. Internet connection in online learning was suitable.

Figure 17 shows the survey results for the item: the device (mobile/laptop) was suitable for online learning, where 24% of respondents believe that the device was suitable to a very large extent, 33% to a large extent, 29% to a medium extent, 9% to a small extent, and 5% to a very small extent, and thus 86% of the faculty members believe that the device (mobile/laptop) they used was suitable for online learning to medium to very large extents.

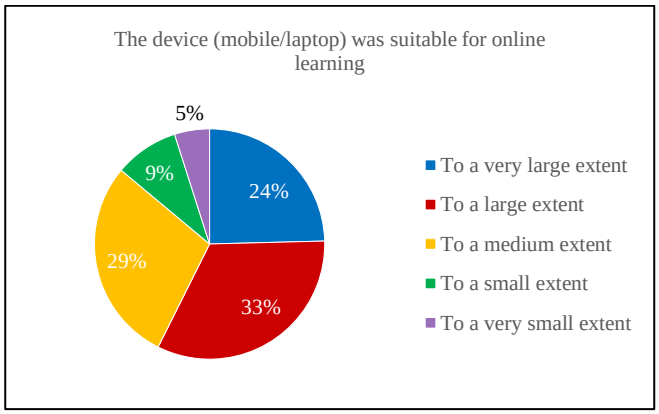

Figure 17. The device (mobile/laptop) was suitable for online learning.

Figure 18 shows the survey results for the item: the video conferencing software (Zoom, Google meet, Skype, Moodle, Google Classroom) is easy to use, where 31% of respondents believe that this was the case to a very large extent, 42% to a large extent, 26% to a medium extent, and 1% to a small extent, and thus most respondents (99%) believe that the video conferencing software (Zoom, Google meet, Skype, Moodle, Google Classroom) was easy to use to medium to very large extents.

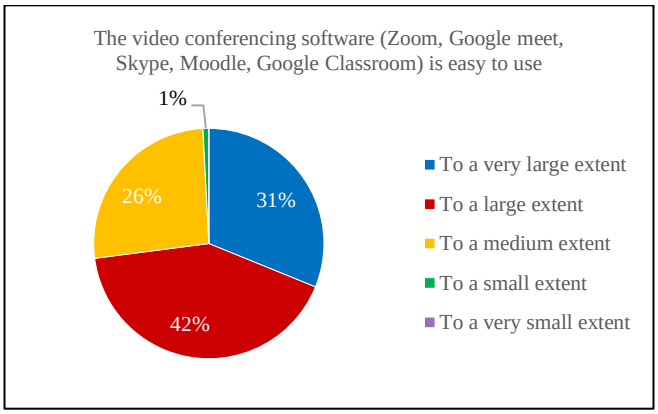

Figure 18. The video conferencing software (Zoom, Google meet, Skype, Moodle, Google Classroom) is easy to use.

5.3. The Impact of The Transition to Online Learning on Faculty Members and Courses' Content

The items below cover this issue, and responses were: to a very large extent, to a large extent, to a medium extent, to a small extent, or to a very small extent:

- The transition to the online learning environment, in response to COVID-19, had a positive impact on faculty members' teaching method.
- The transition to the online learning environment, in response to the COVID-19, had a positive impact on the courses' content.
- I, as a faculty member, had difficulty using technology during online learning.
- I, as a faculty member, felt uncomfortable as I had to stare at cellphone or computer screen for a long time.
- I, as a faculty member, felt I did not have a good emotional bond with my students when conducting online learning, especially with those who started university life with online learning.
- I, as a faculty member, had difficulty in assessing and providing feedback to students during online learning.
- As a faculty member, I am overall satisfied with online learning.

Figure 19 shows the survey results for the item: the transition to the online learning environment, in response to COVID-19, had a positive impact on faculty members' teaching method, where 11% of respondents believe that this was the case to a very large extent, 39% to a large extent, 30% to a medium extent, 10% to a small extent, and 10% to a very small extent, and thus 80% of respondents believe that the transition to the online learning environment, in response to COVID-19, had a positive impact on faculty members' teaching method to medium to very large extents.

Figure 20 shows the survey results for the item: the transition to the online learning environment, in response to the COVID-19, had a positive impact on the courses' content, where 14% of respondents believe that it did to a very large extent, 31% to a large extent, 37% to a medium extent, 14% to a small extent, and 4% to a very small extent, and thus 82% of respondents believe that the transition to the online learning environment, in response to the COVID-19, had a positive impact on the courses' content to medium to very large extents.

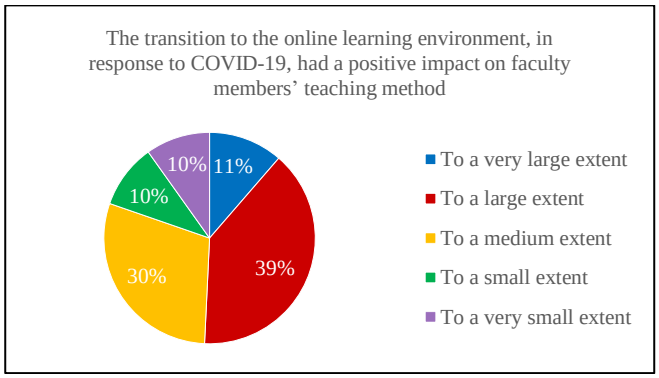

Figure 19. Transition to the online learning environment, in response to COVID-19, had a positive impact on faculty members' teaching method.

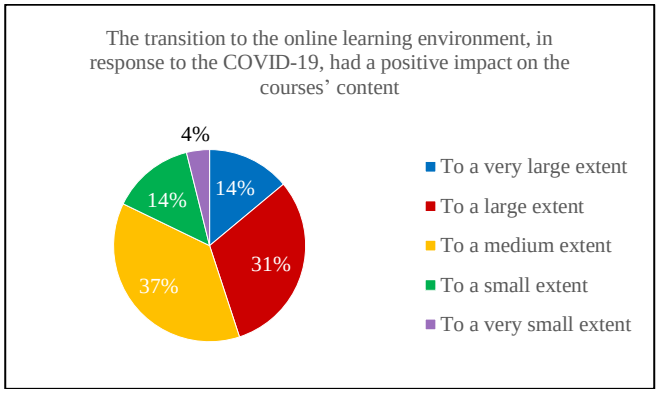

Figure 20. Transition to the online learning environment, in response to the COVID-19, had a positive impact on the courses' content.

Figure 21 shows the survey results for the difficulties that the faculty members faced using technology during online learning, where 4% of respondents believe that these difficulties existed to a very large extent, 13% to a large extent, 26% to a medium extent, 36% to a small extent, and 21% to a very small extent. Overall, 43% of the respondents had difficulties using technology during online learning to medium to very large extents.

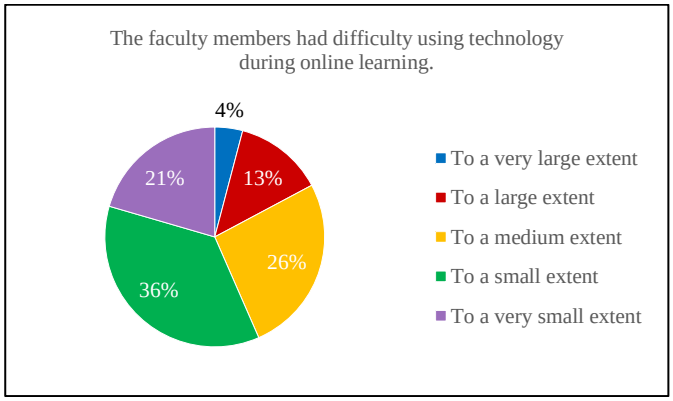

Figure 21. The difficulties that the faculty members faced using technology during online learning.

Figure 22 shows the survey results for the item: the faculty members felt uncomfortable as they had to stare at cellphone or computer screen for a long time, where 18% of the faculty members believe that they did to a very large extent, 30% to a large extent, 35% to a medium extent, 13% to a small extent, and 4% to a very small extent, and thus 83% of the respondents felt uncomfortable as they had to stare at cellphone or computer screen to medium to very large extents.

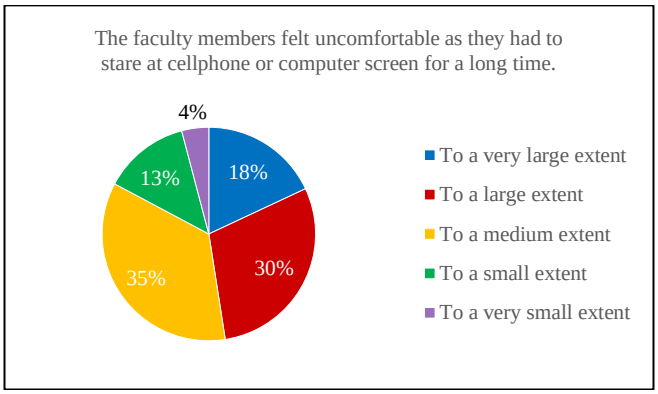

Figure 22. The faculty members felt uncomfortable as they had to stare at cellphone or computer screen for a long time.

Figure 23 shows the survey results for the item: the faculty members did not have a good emotional bond with their students when conducting online learning, especially with those who started university life with online learning, where 18% of respondents believe that this was the case to a very large extent, 39% to a large extent, 27% to a medium extent, 10% to a small extent, and 6% to a very small extent, and thus 84% of respondents believe that they did not have a good emotional bond with their students when conducting online learning to medium to very large extents.

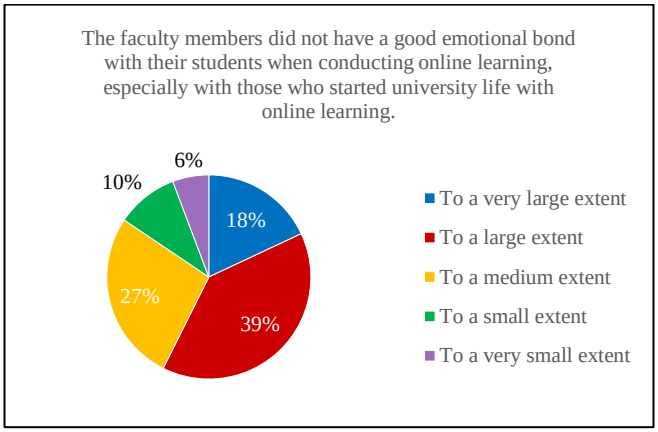

Figure 23. The faculty members did not have a good emotional bond with their students when conducting online learning, especially with those who started university life with online learning.

Figure 24 shows the survey results for the difficulties that the faculty members faced in assessing and providing feedback to students during online learning, where 10% of respondents believe that they faced such difficulties to a very large extent, 38% to a large extent, 30% to a medium extent, 11% to a small extent, and 11% to a very small extent, and thus 78% of the respondents believe that they faced difficulties in assessing and providing feedback to students during online learning to medium to very large extents.

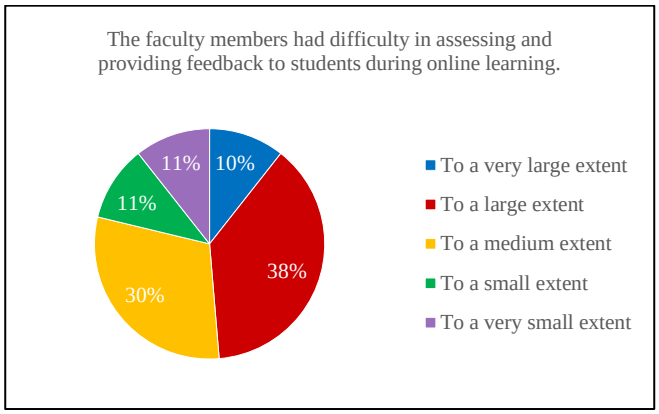

Figure 24. The difficulties that the faculty members faced in assessing and providing feedback to students during online learning.

Figure 25 shows the survey results for the item: the faculty member is overall satisfied with online learning, where 10% of respondents were satisfied to a very large extent, 20% to a large extent, 43% to a medium extent, 16% to a small extent, and 11% to a very small extent, and overall 73% of the respondents were satisfied with online learning to medium to very large extents.

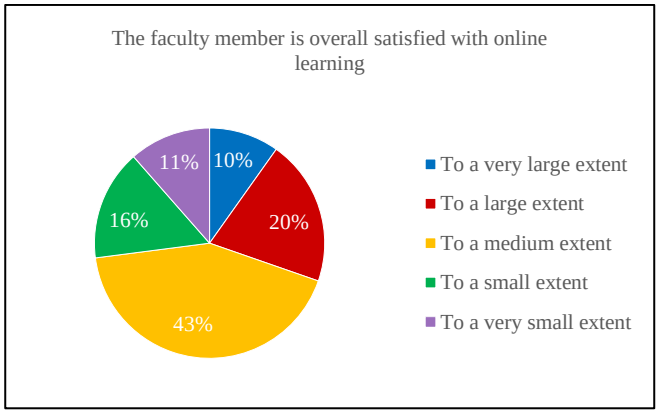

Figure 25. Satisfaction of faculty members with online learning.

5.4. The Impact of the Transition to Online Learning on Students

The following items fall under this issue. The possible responses are as follows: to a very large extent, to a large extent, to a medium extent, to a small extent, or to a very small extent:

- The students were ready for online learning.
- The students had enough technical skills for online learning.
- The students had network problems.
- The students hide their identity in online learning.
- The students were interacting in online learning.
- Online learning helps in developing the students' thinking skills.
- Online learning helps students to be self-reliant.

- As a faculty member, how would you describe the adaptation of your students to online learning, from your experiences and observations?

Figure 26 shows the results for the readiness of students for online learning from the faculty members' perspective, where 3% of respondents estimated that students were ready to a very large extent, 14% to a large extent, 43% to a medium extent, 28% to a small extent, and 12% to a very small extent, and overall it was estimated that 60% of students were ready for online learning to medium to very large extents, which means that a good number of students were seen as ready enough for online learning.

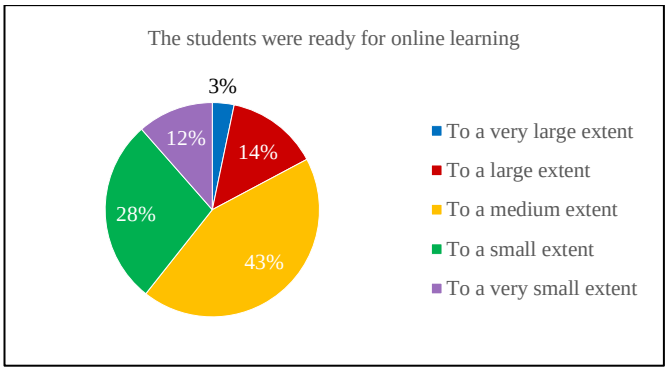

Figure 26. The readness of the students for online learning.

Figure 27 shows the results for the perceived ability of students to possess enough technical skills for online learning. It is shown from this figure that 4% of the students had enough technical skills for online learning to a very large extent, 18% to a large extent, 48% to a medium extent, 23% to a small extent, and 7% to a very small extent, and overall 70% of the students had enough technical skills for online learning with a degree of medium to a very large extent, which means that a good number of students have enough technical skills for online learning.

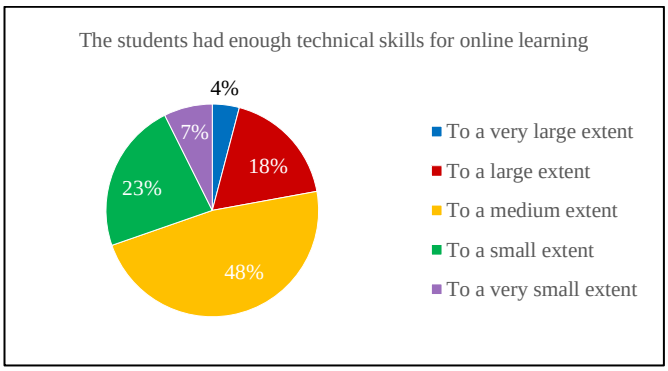

Figure 27. The ability of the students to possess enough technical skills for online learning.

Figure 28 shows the results for the perceived network problems. In the figure, 20% of students had network problems to a very large extent, 31% to a large extent, 39% to a medium extent, 7% to a small extent, and 3% to a very small extent, and overall 90% of the students were perceived to have had network problems for online learning with a degree from medium to very large, which means that most students were reported by respondents to have had network problems in online learning.

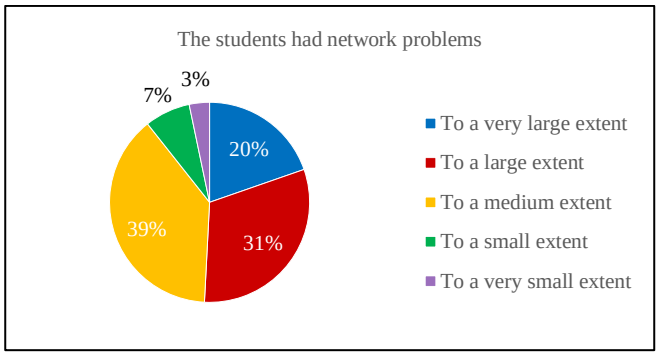

Figure 28. The network problems that the students had with online learning.

Figure 29 is for students hiding their identity. It is shown in this figure that 9% of students hid their identity to a very large extent, 20% to a large extent, 35% to a medium extent, 17% to a small extent, and 19% to a very small extent. That is, 64% of students hid their identity during online learning with an extent ranging from medium to a very large.

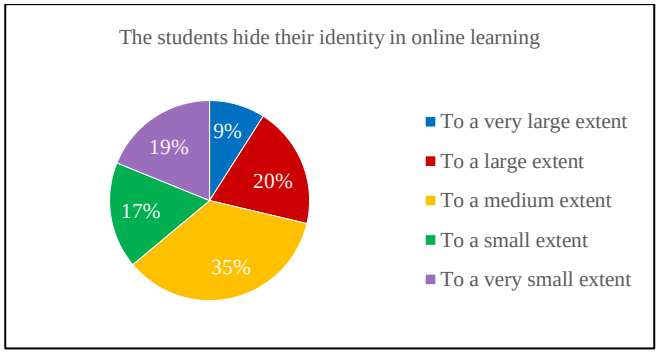

Figure 29. Students hiding their identity with online learning.

Figure 30 shows the results for students interacting during online learning from the perspective of faculty members. It is shown in the figure that 7% of the students interacted to a very large extent, 17% to a large extent, 39% to a medium extent, 27% to a small extent, and 10% to a very small extent. Thus, 63% of the students interacted during online learning to an extent ranging from medium to very large.

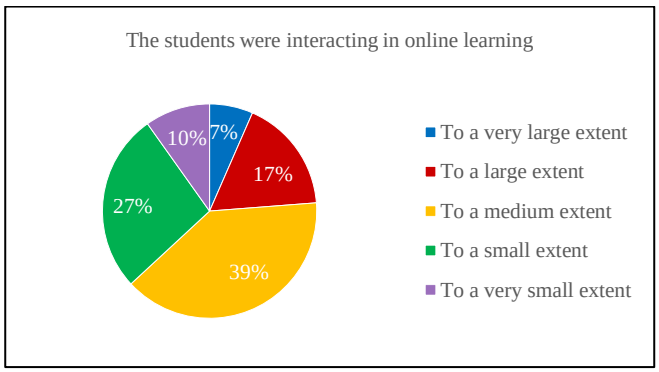

Figure 30. Students interacting with online learning.

Figure 31 shows the survey results for the item: online learning helps in developing the students' thinking skills, where 3% of respondents believe this to be the case to a very large extent, 18% to a large extent, 37% to a medium extent, 32% to a small extent, and 10% to a very small extent, and overall 58% of respondents believe that online learning helps in developing students' thinking skills to medium to very large extents.

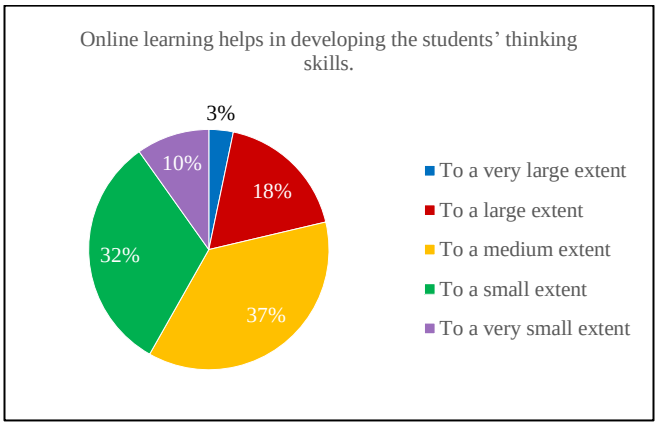

Figure 31. Online learning helps in developing the students' thinking skills.

Figure 32 shows the survey results for the item: online learning helps students to be self-reliant, where 9% of respondents believe that it does to a very large extent, 25% to a large extent, 29% to a medium extent, 23% to a small extent, and 14% to a very small extent, and overall 63% of the respondents believe that the online learning helps students to be self-reliant to medium to very large extents.

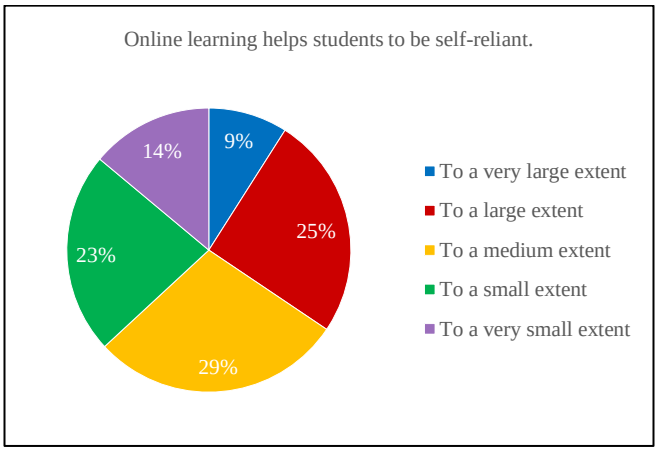

Figure 32. Online learning helps students to be self-reliant.

Figure 33 shows the adaptation of students to online learning from the respondents' experiences and observations. It can be seen from this figure that 23% reported that their students seemed to be adapting well to online learning, and 43% reported reasonably good adaptation, while 18% reported that they were struggling somewhat with this adaptation, and 16% reported a great deal of struggling. Overall, 66% of students appeared to be good at adapting to online learning, while 34% of the students struggled with adapting to online learning.

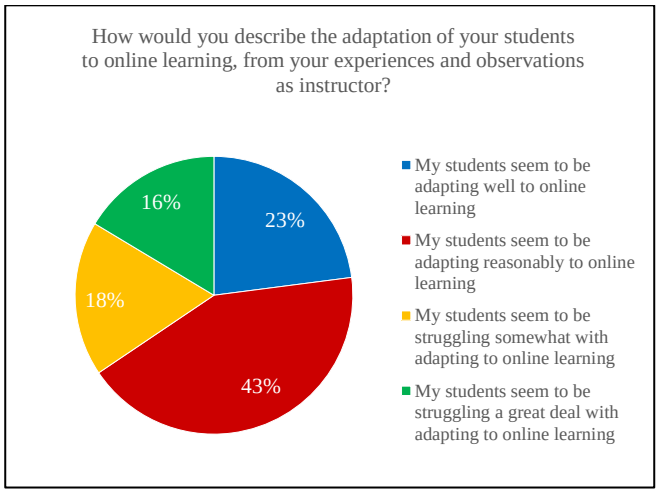

Figure 33. The adaptation of students to online learning from faculty members' experiences and observations.

5.5. The Challenges of Online Learning and its Impact on Teaching And Scientific Research

The following items fall under this issue:

- The software and tools the faculty member needed to do online learning successfully.
- As a faculty member, how did the transition to online learning impact your ability to conduct research work that relies on undergraduate or graduate research assistance?
- As a faculty member, how has online learning affected the overall quality of your teaching?
- As a faculty member, which of the following technological issues were a challenge for you in transitioning to online learning?
- Issues encountered during online learning.
- As a faculty member, do you feel that online learning or aspects of online learning should be kept and incorporated permanently?
- As a faculty member, what are your biggest concerns with the transition to online learning?
- As a faculty member, what kind of improvements in online learning would you like to see in the future?

As shown in Figure 34, most respondents (91%) reported that they needed a laptop/desktop for online learning, 80% reported the need for fast internet and access to a meeting/communication application (e.g., Zoom, Google meet), while 68% reported that they needed communication accessories (headset, microphone, camera), and a few (39%) reported that they needed to use a copier, scanner, and printer to participate in online learning activities. These results show that the software and tools needed the most to do online learning successfully are a laptop/desktop, fast internet, and meeting/communication application (e.g., Zoom, Google meet).

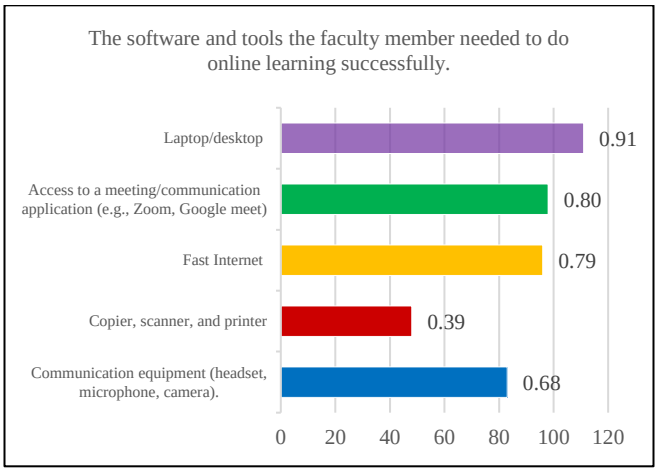

Figure 34. The software and tools needed to do online learning successfully.

Figure 35 shows how the transition to online learning impacted faculty members' ability to conduct research work that relies on undergraduate or graduate research assistance. It can be seen in the figure that the ability of 43% of respondents to conduct research was not altered during online learning and 23% could do some research, while 18% stopped conducting their research during online learning, which means that transitioning to online learning affected their research. The results also show that 16% of the respondents did not conduct research, and therefore the transitioning to online learning did not affect them.

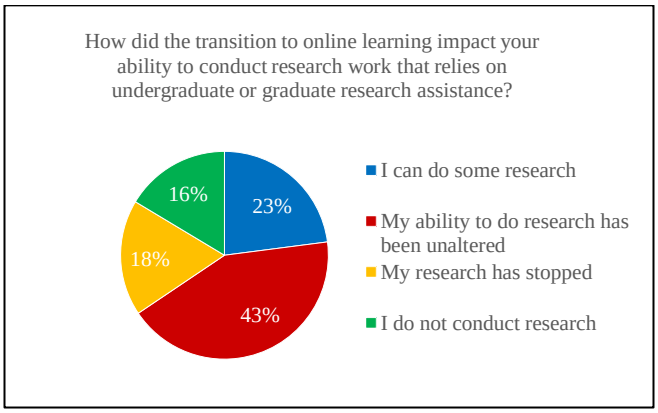

Figure 35. How the transition to online learning impacts faculty members' ability to conduct research work that relies on undergraduate or graduate research assistance.

Figure 36 shows how online learning affected the overall quality of faculty members' teaching. It is clear from this figure that online learning significantly improved the quality of teaching for 12% of respondents and somewhat improved it for 39%, while the quality of teaching did not change for 31%. The results also show that online learning somewhat decreased the quality of teaching for 16% of respondents, and the quality of teaching decreased significantly for 2% of the respondents. Overall, online learning improved the quality of teaching for 51% of the respondents and decreased it for 18%.

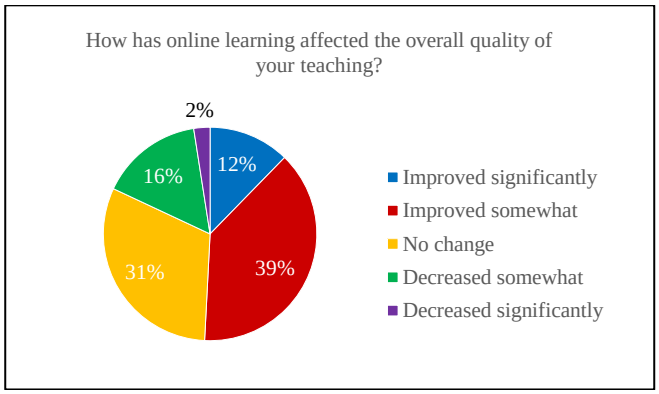

Figure 36. How has online learning affected the overall quality of faculty members' teaching.

As shown in Figure 37, 28% of respondents reported that downloading and running online learning applications was one of the challenges they faced in transitioning to online learning and 32% reported that the access to the internet was another challenge, while access to a working device (laptop, or mobile device) was one of the challenges for 16%, and 6% reported the inability to use online learning technologies and applications (e.g., Zoom, Skype, Google) as a challenge. However, 45% of respondents did not face any challenges. It is clear from this figure that downloading and running online learning applications and access to the internet were the most important challenges that faced the faculty members in transitioning to online learning, while a few faculty members faced challenges in terms of access to a working device (laptop, or mobile device) and inability to use online learning technologies and applications (e.g., Zoom, Skype, Google).

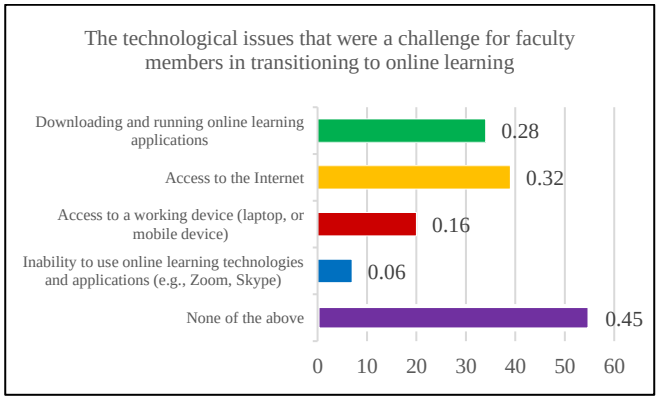

Figure 37. The technological issues that were a challenge for faculty members in transitioning to online learning.

Figure 38 shows the issues encountered by faculty members during online learning. It is clear from this figure that not being able to definitively identify student identity during exams was the big issue for 57% of the respondents, internet speed was another issue for 50% of them, online exams were an issue for 39%, and lastly online access and materials downloading were an issue for 31% of respondents. The most important issues that the faculty members encountered during online learning include internet speed and not being able to definitively

identify student identity during exams. Most students did the exam without showing themselves to the faculty member, and they were hiding their identities. Their cameras were not expected to be operational due to the lack of sufficient internet speed.

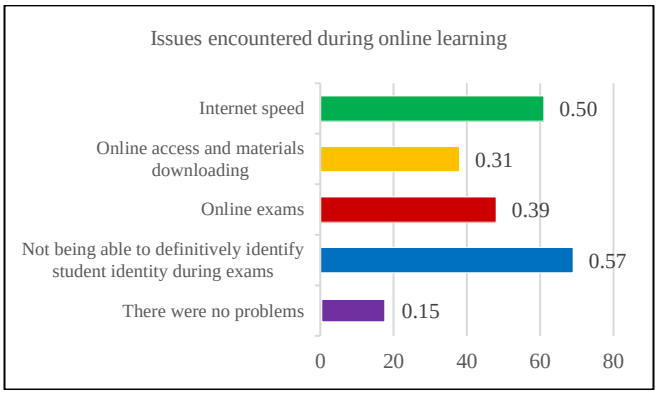

Figure 38. Issues encountered during online learning.

Figure 39 shows the learning or aspects of online learning that should be kept and incorporated permanently based on the faculty members' opinions. It can be seen from this figure that 11% prefer that most learning be done online, 30% feel that some online learning parts should be kept, 49% believe that online learning is fine but they prefer face-to-face learning, 6% do not like any aspect of online learning, and 4% are indifferent either way. Overall, most of the respondents (79%) prefer both forms of learning, face-to-face learning and online learning.

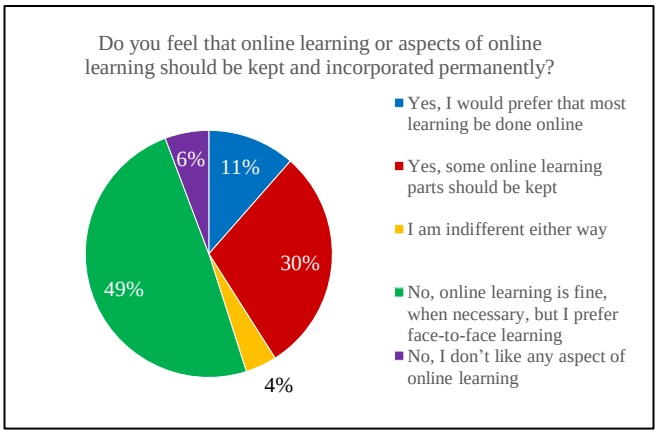

Figure 39. The faculty members' opinion on online learning or aspects of online learning that should be kept and incorporated permanently.

Figure 40 shows the biggest concerns with the transition to online learning. It can be seen from this figure that 75% of the respondents reported that the biggest concern in the transition to online learning is the decreased student learning and 70% believe that the security/privacy in protecting online exams is another concern. Also, it is clear from this figure that 44% of the respondents reported that changes in the grading system (e.g., using pass/fail) are another concern, and 38% reported that the inability to communicate with students as concern, while around 30% reported that privacy and protection in online learning of their personal data, and evaluations of their teaching effectiveness are other concerns in transitioning to online learning.

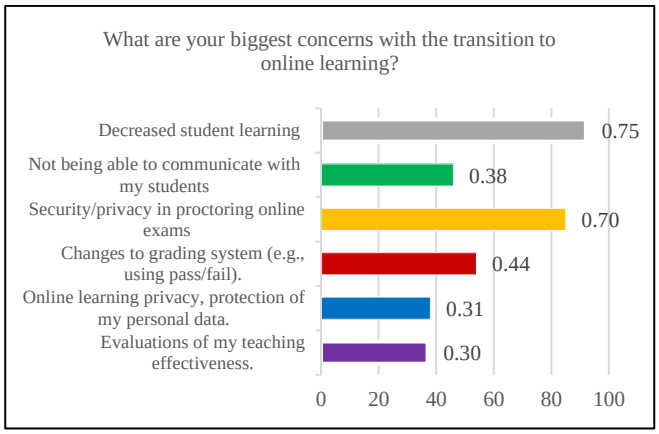

Figure 40. The biggest concerns with the transition to online learning.

Figure 41 shows the kind of improvements in online learning that the faculty members would like to see in the future. It can be seen from this figure that 62% of respondents would like to see more interactions with students, 58% greater online learning technical support, 48% clearer university policies for online learning, and about 44% more training in online learning technologies and services and aid in tailoring courses for online learning. In addition, 41% would like to see changes to assignments and testing structures and 30% more opportunities for online learning versus face-to-face learning.

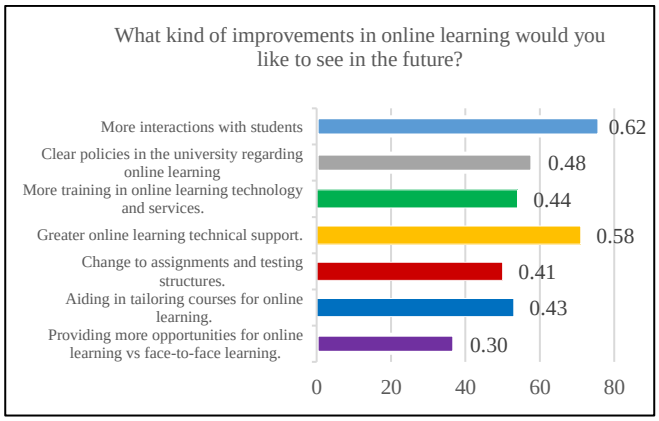

Figure 41. Kind of improvements in online learning that the faculty members would like to see in the future.

6. Conclusions and Future Dirctions

This paper presents the results of an evaluation of the rapid transitioning from face-to-face learning to online learning during the COVID-19 pandemic from the perspective of Al al-Bayt University faculty members. A set of issues were considered and a set of related items that deal with these issues were studied and analyzed through a survey that was distributed among these faculty members.

Concerning the procedures and mechanisms used for this rapid transition, the results show that, in general, AABU faculty members were satisfied with the online workshops organized by the university on transitioning to online learning, and 89% of the faculty members were satisfied with the technical support provided to them by the university. In addition, 76% of the faculty members believe that the technical and computer skills are necessary for transitioning to online learning and 90% believe that the technical difficulties during transitioning to online learning were addressed.

For the online learning environment and procedures used in transitioning to online learning, the following results were obtained from the respondents:

1. 88% believe that technology was used effectively in the online learning environment.
2. Two-thirds believe that communication with students was more effective in online learning than in face-to-face learning.
3. Most believe that they conducted useful practical activities during online learning.
4. Most believe that the interactivity was considered while communicating with students in lectures.
5. Two-thirds believe that they were as comfortable teaching online as offline.
6. Most reported that they changed their teaching style for online learning.
7. Most reported that they modified course materials for online learning.
8. Most reported that they used multimedia tools (Videos, PPT, Animation) for online learning.
9. Most reported that they gave regular assignments to students.
10. Most reported that they followed up regularly on assignments given to students.
11. Most believe that courses' content and materials were easy to share with students online.
12. Most believe that internet connection in online learning was suitable.
13. 86% reported that the device used (mobile/laptop) was suitable for online learning.
14. Most (99%) believe that the video conferencing software (Zoom, Google meet, Skype, Moodle, Google Classroom) was easy to use.

For the impact of the transition to online on the faculty members and courses' content, the following results were obtained:

1. 80% of respondents believe that the transition to the online learning environment, in response to COVID-19, had a positive impact on their teaching method.
2. 82% believe that this transition had a positive impact on the courses' content.
3. 43% of faculty members had difficulties using technology during online learning.
4. 83% felt uncomfortable as they had to stare at cellphone or computer screen for a long time.
5. 84% believe that they did not have a good emotional bond with their students when conducting online learning.
6. 78% believe that they faced difficulties in assessing and providing feedback to students during online learning.
7. 73% were satisfied with online learning.

For the impact of the transition to online learning on students as perceived by faculty members, the following results were obtained:

1. 60% of students were perceived as ready for online learning.
2. 70% were seen as having enough technical skills for online learning.
3. Most students were seen as having network problems for online learning.
4. 64% of students hid their identity from instructors during online learning.
5. 63% interacted with their instructors in online learning.
6. 58% of faculty members believe that online learning helps in developing students' thinking skills.
7. 63% of faculty members believe that online learning helps students in being self-reliant.
8. 66% of students seem to be good at adapting to online learning, while 34% struggle with this adaptation.

For the challenges of online learning and its impact on teaching and scientific research, the following results were obtained:

1. The software and tools needed for successful online learning include laptop/desktop computers, fast internet and meeting/communication applications (e.g., Zoom, Google meet).
2. The transition to online learning affected faculty members negatively in conducting their research.
3. Online learning was seen as improving the quality of teaching for 51% of faculty members and decreasing it for 18% of them.
4. Downloading and running online learning applications and access to the internet were the most important challenges that faced the faculty members in transitioning to online learning, while a few faculty members faced challenges in terms of access to a working device (laptop, or mobile device) and inability to use online learning technologies and applications (e.g., Zoom, Skype, Google).
5. The most significant issues that faculty members encountered during online learning included internet speed and not being able to definitively identify student identity during exams.
6. Most faculty members prefer both forms of learning, face-to-face learning, and online learning, while only 6% of them do not like any aspect of online learning.
7. The most important concerns regarding the transition to online learning were the decreased student

learning, and the security/privacy in protecting online exams.

8. The most important improvements in online learning that faculty members would like to see in the future include better interaction with students, greater online learning technical support, and clear university policies regarding online learning.

As a continuation of this research, it would be interesting to apply this study to faculty members in all Jordanian universities.

Acknowledgment

We would like to thank Al al-Bayt University as this research work has been carried out during a sabbatical leave for Saad Bani-Mohammad.

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