December 2020

The Maldives National University

The Impact Of COVID-19 Pandemic On The Higher Education Sector Of The Maldives:

Responses And Challenges

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بسم الله الرّحمن الرّحيم

THE IMPACT OF COVID-19 PANDEMIC ON THE HIGHER EDUCATION SECTOR OF THE MALDIVES: RESPONSES AND CHALLENGES

An assessment carried out by

The Maldives National University

For,

Ministry of Higher Education, Maldives

December 2020

The Impact Of Covid-19 Pandemic On The Higher Education Sector Of The Maldives: Responses & Challenges

This study was carried out by a team of researchers from the Maldives National University. The study was commissioned by the Ministry of Higher Education.

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ABBREVIATIONS AND ACRONYMS

F2F: Face-to-Face
FGD: Focus Group Discussions
HE: Higher Education
HEI: Higher Education Institutions
HPA: Health Protection Agency
ICT: Information Communication Technology
IGMH: Indira Gandhi Memorial Hospital
IUM: Islamic University of Maldives
MNU: The Maldives National University
MoHE: Ministry of Higher Education
MQA: Maldives Qualification Authority
ROT: Remote Online Teaching

EXECUTIVE SUMMARY

This study was based on the objective of assessing the impact of COVID-19 on all aspects of higher education country-wide, including policy, academic affairs, management and financial responses, and psychological fitness of stakeholders within the higher education sector of the Maldives. The emergency response of the higher education institutions (HEIs) to the COVID-19 pandemic and the impact of their response on students, staff and the institutions were analysed by collecting data both quantitatively (stakeholder survey questionnaires) and qualitatively (stakeholder interviews). In total, 12 stakeholder interviews were conducted with higher education stakeholders, and 1187 survey questionnaires were filled by students and academic & non-academic staff of HEIs. The findings show adjustments that were made by HEIs and the challenges faced by the students, staff, and the institutions in transitioning to remote online teaching and learning. The HEIs in this study responded to the COVID-19 pandemic in three phases which were: 1) evaluating the impact of the pandemic on teaching and learning of the HEIs; 2) planning for continuity of education during the pandemic; and 3) resuming teaching and learning virtually. To facilitate the remote online teaching and learning virtually, HEIs provided various support to their students; namely, technical support, academic support, and psychological support. Further, the COVID-19 pandemic impacted all HEIs and their stakeholders financially. The main challenges faced by stakeholders during the remote online teaching and learning were found to be issues in internet connectivity, unsuitable home environment, and limited preparedness in the use of information communication technologies in teaching and learning. The findings of this study have implications for higher education institutions in continuing their teaching and learning activities during emergency situations and in future educational programs offered. Further, the findings are significant for higher education policy makers in the Maldives, namely the Ministry of Higher Education and the Maldives Qualification Authority, in the need for emergency preparedness and quick responses to ensure quality of higher education even in the face of a pandemic.

1. BACKGROUND

Since December 2019, SARS-COV-2 VIRUS (COVID-19), a highly infectious disease caused by a new virus, has become a major disruption to universities around the world including the Maldives, with most institutions suspending in-person classes and moving to online-only instruction in the wake of this deadly virus.

One recommendation made by the health authorities of governments across the world to contain the spread of the COVID-19 pandemic, was to maintain an appropriate physical distance between individuals. As a result, to minimize exposure of the students and staff to the COVID-19 virus, several educational institutions across 144 countries were temporarily closed impacting almost 68 percent of the world's enrolled student population (UNESCO, 2020). The disease imposing mobility restrictions has particularly affected the tertiary education sector. The pandemic has significantly altered nearly every aspect of university operation including teaching and learning, admissions and enrolment to student support service, raising concerns over the quality of higher education provision

during the emergency teaching period. According to the International Association of Universities, the total number of students and youth affected are more than 1.5 billion (IAU, 2020). In South Asia Region alone, over 42 million students in 50,000 Higher Education Institutions (HEIs) of 8 countries are affected by the pandemic (South Asia: Higher Education, 2020). These concerns further extend to the financial future of higher education institutions in a time of financial instability, both in the form of unforeseen costs and potential drops in revenue.

Students attending universities and other higher education institutions create a dense network through which infectious diseases can easily spread (Weeden & Benjamin, 2020). As such several measures were put in place by higher education institutions across the globe to secure the wellbeing of their students and staff and to make the disruption to their functions as minimal as possible. These measures were revised multiple times by many institutions as the situation unfolded, for health and safety of staff and students were their priority. Accordingly, the two main changes suggested by the European Association for International Higher Education include the offering of the courses on an online mode or deferring enrolment or the programme to a later term for student affected by the pandemic (EAIE, 2020).

To prevent the spread of COVID-19 through their institutions, several HIEs chose to change the vast majority of their courses from face-to-face teaching to remote teaching mostly done online through digital technology. In the United States alone, more than 200 colleges and universities suspended classes and moved online (EAIE, 2020). Some universities that lacked the necessary Information Communication Technology (ICT) infrastructure had to postpone teaching-learning activities until further notice (Policy Brief, 2020). In other universities, facilities such as libraries that closed initially, were later permitted to open with instructions to operate in a COVID-secure way (Higher Education, 2020).
The sudden switch to digital technology was not easy. It also induced a lot of stress for the educators and students and made some feel overloaded with work. To ease them, some institutions suspended exams and strengthened the support services to students. Protocols and guiding documents to steer the students and educators through the process of the change were made (South Asia: Higher Education, 2020).

The switch to remote education after closing campuses was to ensure educational and research activities were carried on during the pandemic with minimal disruption. This step exposed not only the "digital inequity" of the community but also the shortcomings of the education systems. While access to digital technology and its devices were an issue to some, access to a reliable internet network was an issue to the others. The digital divide was huge even within communities and HEIs were faced with facilitating the means through which digital equipment for the needy staff and students can be arranged (South Asia: Higher Education, 2020).
Training of educators in adapting to the use of technology and getting them acquainted with the new mode of teaching came with hurdles. These challenges required immediate attention so as to successfully conduct the remote learning sessions. HEIs had to formulate and run training modules for the educators on online teaching and assessing (Rashid & Yadav, 2020).

The pandemic also made educators realise that during the pandemic, student support is not to be limited to the academic level but it required a more holistic approach. Institutions must therefore, have not just the infrastructure to communicate with the students, but are required to have a solid support system that is comprehensive to the needs of the students. Institutions that did not have such a support system led to a negative impact on the students' experience (IAU ESN, 2020).

A comprehensive study by Crawford et al. (2020), provided insights into the initial response and experience of universities from twenty countries representing different regions of the world including America, Europe, Asia, Africa, Middle East, and Australia. According to this study, most of the universities rapidly closed their face-to-face operations and moved to online education in the wake of COVID-19 pandemic. However, a number of universities continued to implement a shutdown or postponement strategy until the end of March 2020. It was reported, around June 2020, that the temporary closure of HEIs due to the COVID-19 pandemic impacted an estimated 23.4 million higher education students in Latin America and Caribbean alone (UNESCO & IESALC, 2020). This is assumed to be the case around the world owing to the inevitable cessation in face-to-face classes. This paradigm-shift from traditional face-to-face and/or blended learning to completely remote teaching and learning was a huge challenge and needed careful planning to ensure the quality of education was not compromised. These disruptions to teaching and learning due to the pandemic containment measures led almost all the HEIs worldwide to opt to conduct their teaching activities remotely (Crawford et al., 2020; Flack et al., 2020; Nabukeera, 2020; Toquero, 2020; UNESCO & IESALC, 2020).

Similar to experiences worldwide, COVID-19 pandemic profoundly impacted the higher education sector in the Maldives. The higher education institutions (HEIs) in the Maldives ceased all traditional face-to-face sessions and opted to maintain continuity through remote learning to comply with the measures enforced to limit the spread of the coronavirus. While blended courses, with a combination of face-to-face classes and synchronous and asynchronous online content delivery were a common feature across many HEIs prior to the pandemic, online teaching and learning became a strategic priority in the wake of the COVID-19 pandemic. Given the lack of evidence at the inception of this study, in June 2020, it was assumed that HEIs planned and implemented strategies to ensure continuity of their courses by transitioning to online teaching with quick revisions to pedagogy and assessment strategies. There were speculations from the public and relevant authorities whether quality of higher education was compromised or whether students were disadvantaged in the process. The findings from this study add further clarity to this process.

During the emergency online learning transition in the initial phase of the lockdown, it was not possible to ascertain the factors that may affect the continuity of education in the HEIs across the Maldives. Given the unprecedented nature of the pandemic, the changes were swift and varied. Accordingly, the impact on the quality of education, students' academic achievement, and their learning performance were under question. It was understood that while some HEIs were equipped with a strong technical infrastructure for online mode of delivery,

many were unprepared to transit to full online teaching and learning in the short timeframe warranted by the unprecedented impact of the pandemic.
Therefore, there was a need to investigate the emergency online learning environments of the HEIs during the pandemic to explore their structure and interactivity for successful learning experiences of students in online learning courses in the Maldives. Also, there was a need to investigate students' readiness in adopting and adapting to online learning, to develop more comprehensive measures to enable instructors or facilitators to guide students better towards successful online learning experiences.

This report presents findings from an assessment carried out on the higher education sector of the Maldives carried out by the Maldives National University (MNU) for the Ministry of Higher Education. MNU is the largest HEI with 26% of the student enrolment across all HEIs in 2019, and one of the two state-owned universities in the country (MoHE, 2020a). The research team was made up of MNU staff and therefore the research framework was largely influenced by firsthand experiences of the team in a variety of roles within the university ranging from management, teaching and learning, research, and student support.
The proceeding sections of this report present an outline of the research objectives, scope, and methodology for this undertaking. This will be followed by the findings and discussions, with implications for higher education institutions in the current pandemic process as well as lessons for future similar crisis.

2. OBJECTIVES

An assessment of the impact of COVID-19 on higher education was required to understand financial ramifications to adopt policy changes and other strategic decisions to overcome the impact of the pandemic. Additionally, the changes in the mode of delivery of learning during the pandemic needed to be explored to ensure the quality of higher education and also to ascertain equal access to learning as well as to continue learning programs effectively without disruption. This research proposed to undertake a country level, context-specific assessment to examine these aspects.

Accordingly, the main objectives of the study were to:

- Assess the impact of COVID-19 on all aspects of higher education in the Maldives, addressing policy, academic, management and financial responses, and psychological fitness of stakeholders.
- Identify the challenges faced by the students, staff, and the institutions in responding to the COVID-19 enforced transition to remote online teaching (ROT).
- Investigate the adjustments that were made by HEIs to maintain the quality of ROT in the wake of the COVID-19 pandemic.

3. SCOPE & SIGNIFICANCE

The assessment was targeted at all higher education institutions in the Maldives, however, is limited in scope only to the colleges and universities that responded to the survey within the short timeframe of data collection during July to August 2020.
The study intended to inform further government intervention measures to enable

the higher education sector to return to normality in an orderly manner as the lockdown phases out and to aid long term policy development by the government, particularly regarding crisis management, mitigation and normalization of academic life and activities following the crisis.
The study may also be of use to HEIs in terms of informing them of the wider impact of the current crisis and learning from its experience to continually review and improve crisis management strategies and initiatives. Further, the findings may be useful to academics, lawmakers, civil society organizations, international organizations, journalists, as well as the public.

4. METHODOLOGY

4.1 RESEARCH DESIGN

This assessment on the impact of COVID-19 on the Maldives higher education sector was conducted using a mixed-method sequential explanatory research design. In the first phase of this study, quantitative data was collected using three survey questionnaires, and in the second phase, in-depth qualitative data was collected by conducting individual and focus group interviews with higher education (HE) stakeholders. A cluster sample of the target population were recruited using a simple random sampling approach for the quantitative component while a purposive sample was used for the qualitative component. The clusters include students, academic and non-academic staff of HEIs. Further details on the sample sizes for the phase 1 and phase 2 are included under 4.1.1 and 4.1.2 respectively. In addition to the data collected from the specified phases above, statistical data and reports based on studies conducted at the national and international level on the impact of COVID-19 on the higher education sector was used to complement the local findings.

4.2 PHASE 1: SURVEY QUESTIONNAIRE

Three set of questionnaires were utilised to collect quantitative data. These included questionnaires targeted at: 1) students enrolled and active in higher education institutes (HEIs) in the Maldives at the time of this study; 2) academic staff of these HEIs; and 3) non-academic staff of the HEIs.

4.2.1 Survey instrument design

The questionnaires were designed to identify the possible impact of COVID-19 on the higher education sector and evaluate the perceptions of these three groups regarding issues related to higher education due to the pandemic.
The questionnaires were piloted prior to administering the main survey. The questionnaires were designed using the web-survey tool 'Google Forms' and they were shared with the target population via online and were self-administered. The specific purposes of the questionnaires are detailed below.

4.2.1.1 Student Questionnaire

- Investigate the impact on students as a result of the enforced transition to ROT, including the changes and challenges faced by the students.
- Explore students' readiness/preparedness in terms of the required technology,

the know-how, and also mentality in adopting and adapting to ROT.
- Understand the students' perceptions about the effectiveness of the emergency implementation of ROT in terms of interaction with students and timely response from faculty, access to online support services, and access to library services.
- Explore concepts of the emergency response that were working well and can be considered to continue post-pandemic.
- Assess the financial impact on students, parents/guardians and/or sponsors.

4.2.1.2 Academic staff questionnaire

- Investigate the impact on academic staff as a result of the enforced transition to ROT with respect to the changes and challenges they faced.
- Assess the academic staff preparedness for ROT in terms of access to technology, the know-how, and also their mentality.
- Understand their perceptions on the effectiveness of the emergency implementation of ROT.
- Evaluate how the staff time was utilized during the temporary cessation of teaching.
- Identify the effectiveness of training programs in the transition process and also the process of revision to pedagogy and assessment.
- Explore concepts of the emergency response that were working well and can be considered to continue post-pandemic.
- Explore the economic impact on the staff as a result of the pandemic.
- Understand the challenges and merits of working from home and assess the future of flexible working arrangements.

4.2.1.3 Non-academic staff questionnaire

- Investigate the impact on non-academic staff as a result of the enforced transition to ROT
- Assess staff preparedness in extending support to the Faculty in ROT, in terms of access to technology, the know-how, and willingness and merits of working from home with respect to the changes and challenges they faced.
- Evaluate how the staff time was utilized during the temporary cessation of teaching.
- Explore the economic impact on the staff as a result of the pandemic as overtime payment is believed to play a large role on supplementing the non-academic staff income during normal times.
- Assess the future of flexible working arrangements.

4.2.2 Sample size for the survey

As outlined in the section above, the target group for the survey were students, academic and non-academic staff of government and private higher education institutions. According to the Ministry of Higher Education (MoHE, 2020), there are 203 HEIs tertiary education providers registered under the Ministry of Higher Education with approximately 19100 students, 975 academic staff, and 360 non-academic staff. Of these tertiary education providers, 10 are registered as colleges and 2 as universities. The 2 universities and 1 college are state-owned, and the remaining 9 colleges are privately owned.

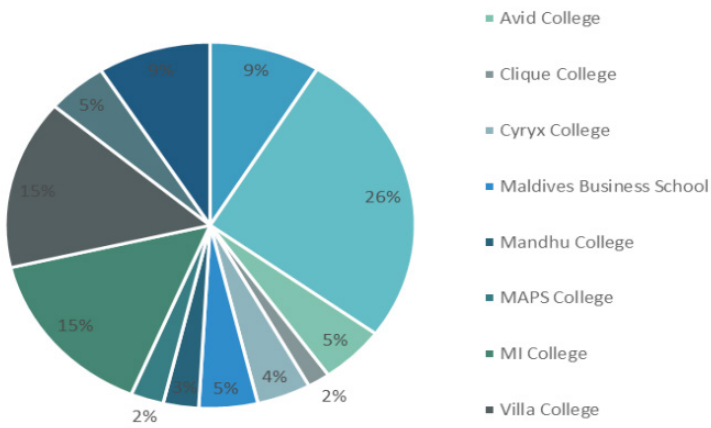


Figure 1. Percentage of enrolment in HEIs in the Maldives (source MoHE, 2020a)

The sample sizes for the individual categories of the target population within the HEIs were determined statistically, at a 95% confidence interval and 5% margin of error. Accordingly, the targeted sample size for the three groups, students, academic staff, and non-academic staff were 1356, 527, and 273 respectively. These are detailed in Tables 1 to 3.

Table 1. *Sample size for students*

Type of HEI	Total population (approx.)	Target Sample size
Government HEIs	10,948	372
Private HEIs	8,152	367
Total	19,100	739

Table 2. *Sample size for academic staff*

Type of HEI	Total population (approx.)	Target Sample size
Government HEIs	540	225
Private HEIs	435	205
Total	975	430

Table 3. *Sample size for non-academic staff*

Type of HEI	Total population (approx.)	Target Sample size
Government HEIs	240	148
Private HEIs	120	92
Total	360	240

4.3 PHASE 2: IN-DEPTH INTERVIEWS

The second phase of data collection included in-depth interviews, either

individually or as a focus group discussion (FGD), with policy makers within the higher education sector. These include Ministry of Higher Education (MoHE), Maldives Qualification Authority (MQA), and senior management of higher education institutions.

4.3.1 Semi-structured survey instrument

These interviews/FGDs were conducted after a reflection on the preliminary findings from the quantitative data, so that specific areas that needed attention can be explored further. The interviews/FGDs were carried out using a semi-structured interview guide that was pilot tested prior to data collection. Each discussion was 50 to 60 minutes long. The interviews/FGDs were focused on:

- Policy changes and other strategic decisions taken by the HE stakeholders to mitigate the impact of COVID-19 pandemic, as well as the measures implemented by HEIs for their service continuity.
- Impact of the adjustments of MoHE and MQA to maintain quality of ROT.
- Perceptions on the changes in the mode of delivery of learning and teaching during the pandemic as well as its continuity or applicability to the future of higher education.

4.3.2 Sample size of the interviews/FGDs

The sampling unit for the qualitative component included 12 stakeholders from the higher education sector. They include informants from the MoHE, MQA, and selected policy level staff from HEIs that consented to participate in this assessment. Purposive sampling was used for this component as the research team believed that the selected participants would be a more representative sample that can bring more accurate and informed inputs into the study.

4.4 DATA COLLECTION AND ANALYSIS

The MNU contacted all HEIs in writing, requesting their participation in this assessment seeking to understand the impact of COVID-19 on the higher education sector of the Maldives. A focal point was identified from each of the consenting government and private HEIs, who acted as the contact person with the MNU research team.

The online survey questionnaires for students and academic/non-academic staff were shared with the identified focal point at the HEIs, aiming to ensure the target population was reached effectively. Further, the focal point assisted in reminding the prospective participants in order to ensure the targeted sample size was achieved. The questionnaires were circulated through email as well as respective Viber groups of the HEIs.

The online survey was open from July to September 2020. The questionnaires were self-administered by the participants. 1059 and 136 completed questionnaires were received from government and private HEIs respectively. These include 940 students, 50 academic staff, and 59 non-academic staff from the government HEIs; and 48 students, 46 academic staff, and 42 non-academic staff from the private HEIs.

The interviews/FGDs were conducted in October 2020, by members of the Research Team. The interviews were conducted as one-to-one meetings either online or physically face-to-face. The FGDs were conducted in groups of not more

than 3 informants with 1 to 2 interviewers.

The data from both the quantitative component was analysed using SPSS and is presented mostly as descriptive statistics. The interview/FGD data was thematically analysed mostly based on the guiding questions. In reporting the data, the informants were not personally identified for confidentiality. For the quantitative component, personally identifiable data was not collected.

5. FINDINGS AND DISCUSSION

This section provides the findings from the two phases of the study, complementing the quantitative findings from the questionnaire with the in-depth information sought from the policy makers. The findings are further discussed, where appropriate, with the use of relevant literature.

5.1 DEMOGRAPHIC INFORMATION

5.1.1 Students

As identified earlier, HEIs have an estimated student population of 19,100, and out of the target sample size of 1356 for this study, a total of 989 students responded to the survey questionnaire.

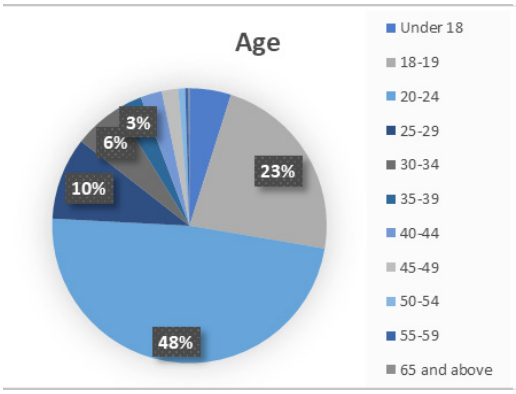


Figure 2. Age of students

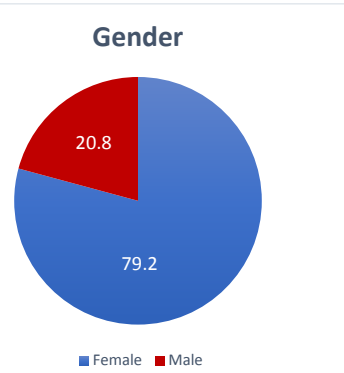
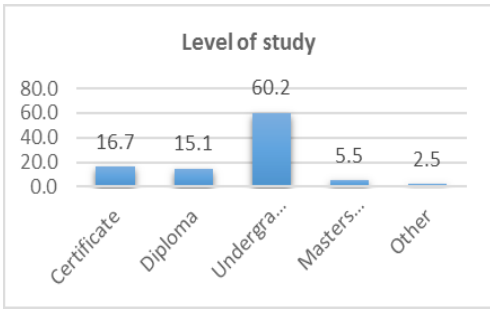


Figure 3. Gender of students

The data showed that the majority of the students from the higher education institutions were mostly under the age of 24. Most of the students (48.6%) were aged between 20-24 years. About a quarter (23%) of them was under 20 years of age and 9.8% were between 25-29 years (Figure 2). Majority (79.2%) of the students were females (Figure 3). Statistics for student enrolment in HEIs reported by MoHE (2020a) did show a higher percentage of female students, but the difference was smaller, compared to the participants of this survey, with 59% female and 41% male students enrolled in 2019.



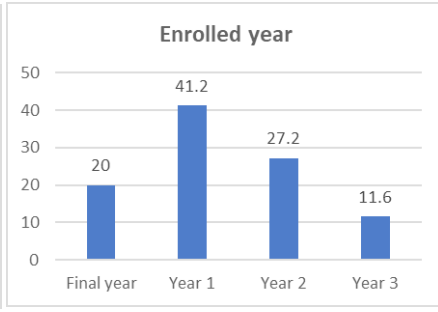
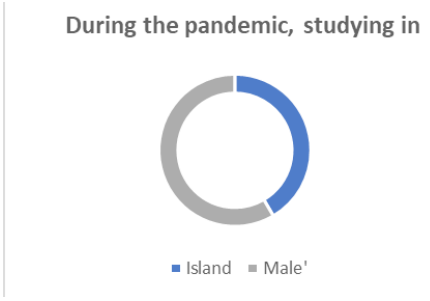


Figure 4. Level of study of students

Figure 5. Participants' enrolled year of study

More than 60% of the student survey respondents in higher education institutions were enrolled in undergraduate programs, 16.9% in certificate programs, 15.3% in diploma programs, and 5.5% of the students were enrolled in master programs. MoHE's statistics for 2019 (MoHE, 2020a) showed that one third of higher education students across the country were enrolled in undergraduate degree programs, with almost one-third of the students in Advanced Certificate (level 4) courses. A higher response rate for this survey from undergraduate vs certificate students could be because of the timing of the survey that coincided with the end of a semester for most of the HEIs, as many could have been on their last term of studies.

Most of the student participants (41.2%) were in the first year of their studies, 27.2% were second year, 11.6% were in third year and 20% were in their final year.



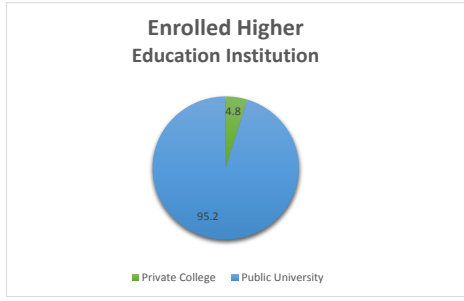


Figure 6. Students' location

Figure 7. Student enrolment by type of HEI

Majority (95.2%) of the students who participated in the study were from government higher education institutions. More than 50% of the students said they were studying in Male' during the pandemic and 41.4% of the students said they were studying from an island. The student participants for the survey were predominantly state-owned college and universities. MoHE (2020) statistics showed that 58% of the students enrolled in HEIs in 2019 were from the private colleges while 42% of the students were enrolled in government HEIs including Islamic University of Maldives (IUM), MNU, & Polytechnic.

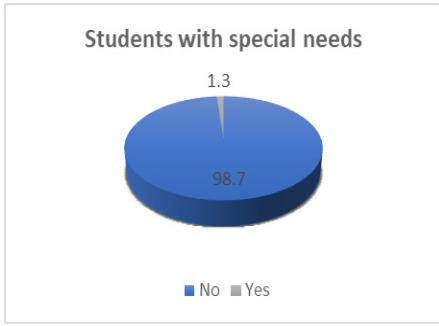


Figure 8. Students with special needs

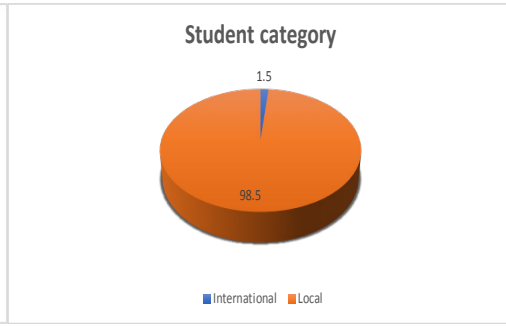


Figure 9. Student category

The majority of the students (98.5%) were local and 1.5% was international. There were also 1.3% of the students who identified themselves as special needs students.

5.1.2 Academic staff demographics

This section presents the demographic data of the academic staff participants from the HEIs. A total of 96 academic staff responded to the survey questionnaire.

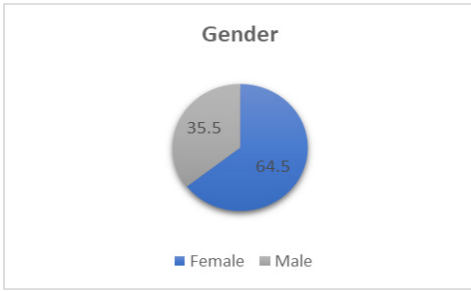


Figure 10. Gender

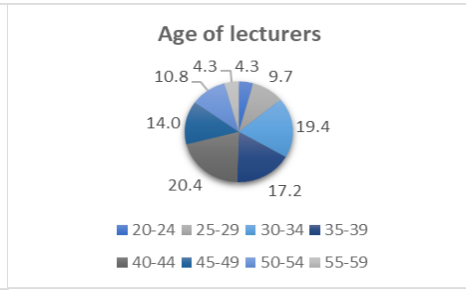


Figure 11. Age of Lecturers

The MoHE (2020) data for 2019 showed that there were 342 (63.3%) male and 198 (36.6%) female staff in HEIs. The statistical report did not distinguish whether they are academic or non-academic staff.

There were more female academic staff respondents (64.5%) from the higher education institutions. The age of these staff ranges from 20 to 59 years, with more than half of the respondents (57.0%) aged between 30 to 44 years (made up of 30-34, 19.4%; 35-39, 17.2%; 40-44, 20.4%).

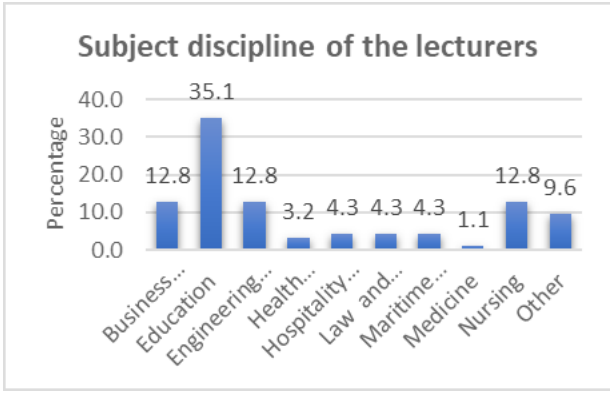


Figure 12. Subject group of academic staff

Most of the academic staff (35.1%) who participated in the survey belonged to the educational discipline. Some are from business, nursing, engineering, hospitality, law, medicine, maritime, health, and other disciplines. These are, to a large extent, reflective of the spectrum of the teaching areas of HEIs in the country. MoHE (2020) statistics showed that in 2019, the most popular field of study were business, administration and law (35%) followed by education (24%).

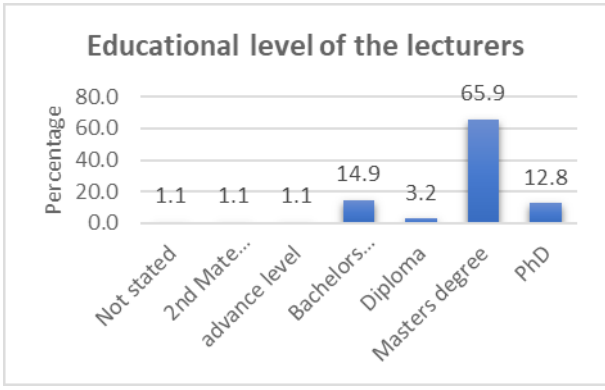


Figure 13. Educational level of academic staff

Majority (65.9%) of the academic staff respondents have a master's degree with another 12.8% reporting to have PhD and 14.9% stating their highest qualification was a Bachelor's degree qualification. While there was no readily accessible recent data on staff employment details, it has been reported that as at 2009, 37.7% of the academic staff in public higher education institutions comprised of lecturers with a postgraduate qualification (cited in Maxwell et al., 2015); and by 2011 61% of all MNU lecturers had a postgraduate qualification (Navarro & Shareef, 2011).

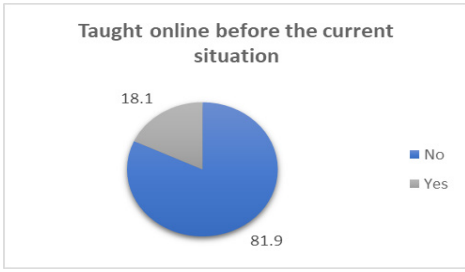


Figure 14. Previous online teaching experience

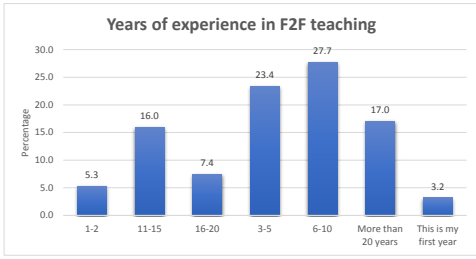


Figure 15. Years of experience in F2F teaching

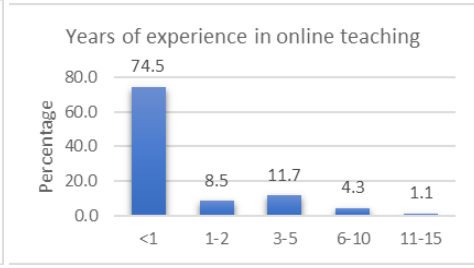


Figure 16. Years of online teaching experience

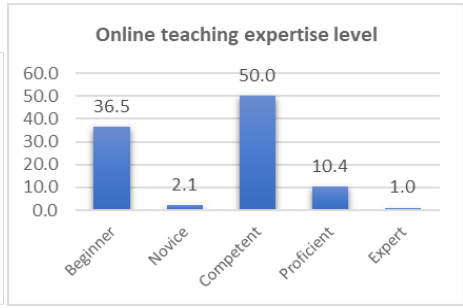


Figure 17. Online teaching expertise of lecturers

The majority of the academic staff (74.5%) said that this was their first experience of teaching online, while 11.7% said they have 3-5 years' experience and 4.3% said that they have 6-10 years of experience in online teaching. Half of the respondents said that their teaching expertise level is "competent", 36.5% said they are at "beginner" level, 10.4% said they are at proficient level and only 1% said they are at expert level.

5.1.3 Non-academic staff demographics

Non-academic staff who responded included registrars, staff from the finance section, IT department, marketing department and administrative staff. A total of 101 non-academic staff responded to the survey.

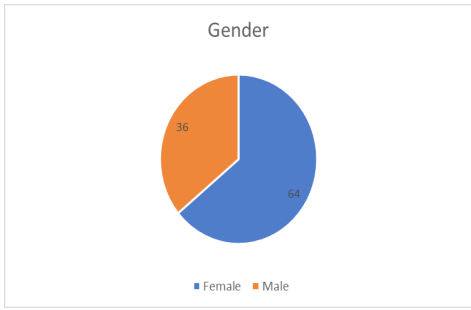


Figure 18. Gender

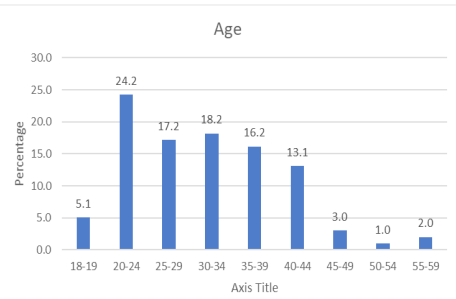


Figure 19. Age

The majority of the non-acdemic staff who responded were females (64%). Most (24.2%) of the staff who responded were aged between 20-24 years, 17.2 % were aged between 25- 29 years, 18.2% aged between 20-35 years and 16.2% aged between 35-39 years.

Staff from both government and private HEIs equally responded to the survey (Figure 20). When the staff were asked to rate about their experience in using technology, 25.3% said that they were very experienced, 4.0% said that they did not have any experience at all, and the rest of the participants rated their experience in between these two ends of the scale (Figure 21).

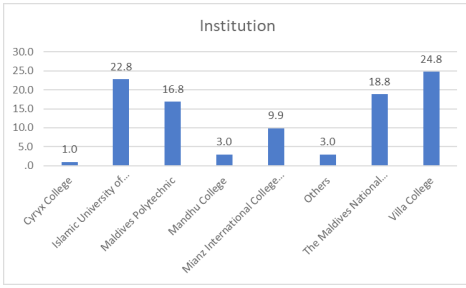


Figure 20. Percentage of non-academic staff from different institutions

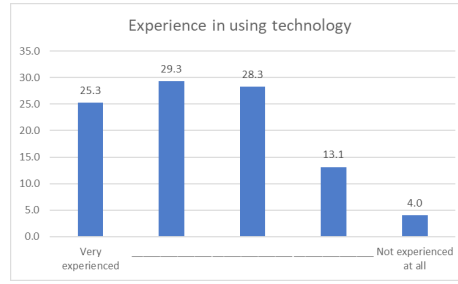


Figure 21. Experience in technology

5.2 HEI'S RESPONSE TO THE COVID-19 PANDEMIC

Based on this assessment the HEIs in the Maldives were found to be efficient in responding to the crisis faced in the wake of the COVID-19 pandemic. The findings indicated that several measures were taken both by public and private HEIs. The HEIs responses to brace for the continuity of education occurred mainly in three phases: 1) evaluation of the impact of the pandemic on teaching and learning, 2) planning for continuity of education during the pandemic, and 3) resuming teaching and learning through virtual mode.

5.2.1 Phase 1: Evaluating the Impact of COVID-19 on teaching and learning

The HEIs evaluated the impact of COVID-19 on the functions of the institutions by assessing the situation of the world, the nation, and their own institutions. According to the interviewed informants from the HEI management, the situation of the students and staff were evaluated by conducting surveys and collecting data to project the continuity of education. Some of the surveys conducted by the HEIs were found to collect data on the students and staff, the availability of resources for both these groups and the status of students and staff in terms of location. It was reported that some of the staff and students who were earlier situated in Male' city had moved temporarily to their islands to minimise congestion within the

home-confinement of the enforced lockdown while some left because of financial difficulties in paying rent. It is a fact that many who live in Male' city are local migrants from other islands who have their family home on their respective islands and live in rental accommodation in Male' (Hasan & Hynds, 2014).

This study was also able to further assess the situation of the students in the wake of the COVID-19 pandemic.

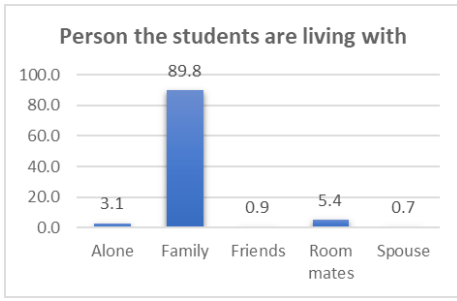


Figure 22. Persons students residing with

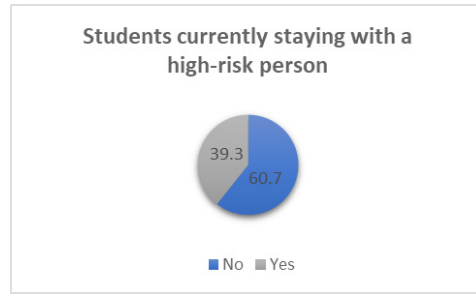


Figure 23. Status of student residing with high-risk people

Majority of the students (89.8%) said that they are currently living with family, while 5.4% of the students said they live with roommates, 3.1 % said they live alone and 0.9% live with friends. Close to 40% of the students said that they live with a high-risk person. The student population globally were young and thereby generally not at risk of coronavirus infection (Aristovnik et al., 2020). However, the fact that such a large proportion of students live with people in the risk category for COVID-19, posed a mental stress on the students that can impact on their studies. This was reflected on the large proportion of students who reported having experienced difficulties because of the pandemic

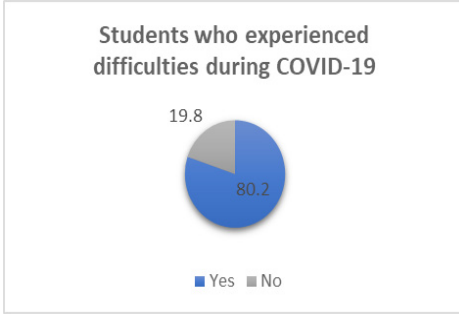


Figure 24. Students who experienced difficulties during COVID-19

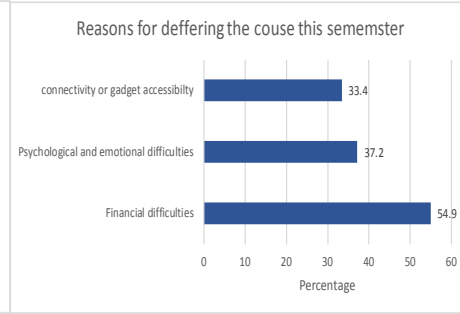


Figure 25. Reasons for deferring course

Majority of the students (80.2%) stated that they experienced difficulties due to changes in their living conditions during the pandemic. Nevertheless, the majority (88.4%) of the students said that they would be able to continue the course, while about 4% of the students said that they would not be able to continue the course. Some said they can continue if the course will be conducted online while some were not sure whether they can continue or not. The three most common reasons given by students for deferring the course during that semester was financial difficulty (54.9%), psychological and emotional difficulties (37.2%) and connectivity and gadget accessibility problems (33.4%). Reporting data from a sample of 30,383 students from 62 countries, Aristovnik et al. (2020) highlighted that "students faced with financial problems were generally affected more by the pandemic in terms of their emotional life and personal circumstances" (p. 1).

According to the information from the interviews with the management of HEIs, it was found that HEIs experienced uncertainty in dealing with the unprecedented nature of the pandemic and lockdown measures, but were hopeful to continue their services. Some of the uncertainties experienced by the HEIs were: the uncertainties in the sudden transition to virtual teaching and probable connectivity issues students might face.

> "We have a large number of students and we felt it would be quite challenging to provide education virtually to all. We were not sure about the exact challenges and issues that might come up. We were not sure about our capacity" (HE1).
> "It was a challenge to conduct course fully online, since students were having difficulties in getting [internet] data" (HE3).

> "There were some confusion as not all lectures and classes were online prior to this pandemic. We were not fully prepared to go online overnight" (HE5).

In addition to the uncertainty, the fear and anxiety about the pandemic impacted the students. Similar to the challenges stated in the World Bank Group (2020) report, some HEIs expressed that students were very worried and not in a state to continue education. Hence, it required much thought into the planning stage to continue teaching and learning and HEIs were able to offer alternatives.

For example;

> "There was resistance from the students. Some wanted to discontinue the programs. We gave option for students to defer their course, we made all our student services available online and our staff working from home were prepared to respond. However, the number of students dropped during the first month of the lockdown" (HE1).

> "For us, continuing with teaching was difficult because students did not want to continue, neither did their parents… There was resentment to paying fees and resistance towards completion of assessments. However, we continued teaching and at the same time we tried and convinced that fees were applicable as we had to teach and pay staff" (HE3).

While the pandemic impacted the operation of all HEIs, the second phase of responding to COVID-19, planning for continuity of education laid the foundation for the HEIs to function during the uncertain times.

5.2.2 Phase 2: Planning for continuity of education during the pandemic

As strict measures were implemented with the declaration of health emergency in the Maldives by HPA with the global COVID-19 pandemic, HEIs started planning for the continuity of education. The lockdown was imposed, and it was advised by the Ministry of Higher Education in April 2020, to cease all higher education activities from the HEIs. The initial weeks of the lockdown period provided some space for HEIs to formulate plans to resume teaching and learning.

During this stage, it was reported that: HEIs explored ways of merging student groups studying common modules, provided technical assistance, created Viber groups with student groups to share information, created virtual classrooms (in HEIs which did not have this platform before), those who already had some virtual classes decided to convert all/most courses to be offered online, developed materials for virtual teaching, and conducted staff trainings. Several policies were also formulated by HEIs, such as policy on working from home, the type of assistance that can be provided to staff & students, and what can and cannot be taught online etc., to ensure quality of education. Additionally, changes were brought to the workload of the lecturers as focus was on online delivery of content. Some specific actions by the HEIs during the planning for teaching phase were:

> "We identified list of materials and student groups. We got permission [from HPA] for one staff to report to the office to contribute to our preparations to continue education. Our staff worked very hard. The common modules were grouped, and Viber groups were formed to share information. The senior management was included in the Viber groups" (HE1).

> "COVID-19 planning and response team was established. Exceptional regulations were approved by the senate. Different strategies for online teaching and learning were planned and several trainings were conducted for students and staff. We made a business continuity plan at the executive level with strategic changes and possible scenarios including all academic activities" (HE3).

> "We decided not to cut down staff salaries. We requested staff to take the maximum teaching and supervision load, so we could minimize part-time staff. Our staff were incredibly supportive and as a result we were able to give full salary to our staff" (HE4).

Although, many effective plans were made, there was a sense of uncertainty expressed on the transition to remote online teaching for the first time.

> "Our plan was to continue teaching to all students by creating virtual classrooms. If that didn't work, then we planned to discontinue some of the programs" (HE1).

However, it was found that all HEIs were able to continue their courses during phase 3 of their response to COVID-19 pandemic: Resuming teaching and learning through virtual mode.

5.2.3 Phase 3: Resuming teaching and learning through virtual mode.

With the planning for continuity of education online by the management of HEI, their programs resumed in May 2020.

Shifting face-to-face classes to online learning has its pros and cons. Some of the HEIs who responded to this assessment were not at all prepared to experience this change while others with virtual modality were able to continue classes without any interruption. A few HEIs were able to transition to a fully online modality from their earlier hybrid modality. The learning curve for the efficient use of remote education is steep and contradictory, and yet the pandemic accelerated the take-up of online teaching even by those who earlier did not believe in its value (Dhawan, 2020). Online learning carries a stigma of being lower quality than face-to-face learning, despite research showing otherwise (Hodges, 2020).

The survey conducted for students of HEIs inquired whether their HEI had moved teaching and learning completely to virtual mode. The responses indicate that except for a very small percentage (see Figure 26), all other HEIs had resumed teaching and learning virtually.

A large proportion (91%) of the students said that their institution had moved to remote learning due to COVID-19. Only 9% of the students said that their institution didn't move to remote learning due to COVID-19. The data from the student survey also sought the perspective of the students on the time taken for the HEIs to move to online. This information was sought on the dominant forms adopted for the online lectures (see Figures 27 and 28).

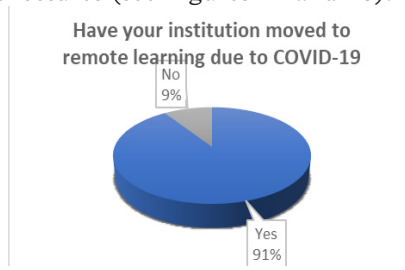


Figure 26. HEIs transiting to remote learning

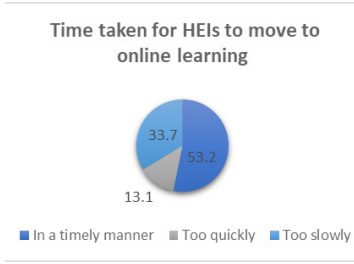


Figure 27. Perceptions on the speed of transiting to online learning

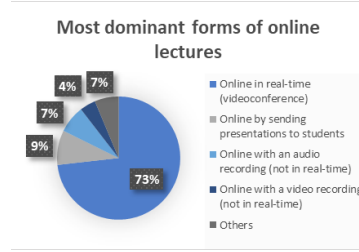


Figure 28. Dominant forms of online sessions

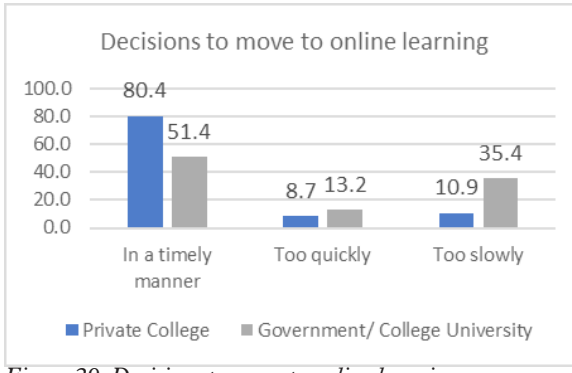


Figure 29. Decisions to move to online learning

More than half (53.2%) of the students in all higher education institutions believed that the decisions to move to online learning were made in a timely manner, 33.7% said that the decision was too slow and 13.1% said the decision to move online was made too quickly. Slightly over one third of the student respondents from the government college/universities believe the decision to move to online learning was too slow. A large majority (73.2%) of the students stated that the most dominant form of online lectures was online in real-time, with another 9.1% students indicating the lectures were online by sending presentations and 7.2% said it was online with audio recording.

From the interview data analysis, it was found that some HEIs, including a public university and some private colleges were quite ready to resume their services since they were offering blended and/or virtual mode of delivery even before the pandemic.

> "We were in a good position to convert to online teaching and learning fully because we have been offering virtual distance education as well as blended teaching for some years now" (HE5).

> "Our private college did not experience any major interruptions to operations throughout the pandemic as our courses have been offered virtually for some years now. I would say the college was 90% technologically ready because of the existing virtual system" (HE6).

While HEIs which already had an established infrastructure for virtual education were able to convert to full online teaching, some HEIs took the lockdown period as an opportunity to plan and prepare to resume classes. Hence, with these planning, preparations were made and implemented.

> "After the set-up we started virtual orientation on how to use LMS. We used two applications to manage online classes and assignments. All information was shared with students by a virtual coordinator" (HE1).

> "Our system was ready for online platform and registration. Our finance system was already established. Our staff was already trained to resume teaching" (HE3).

The delivery of remote learning was found to be planned with focus on two major aspects which were, adaptations to teaching and learning and quality assurance.

5.3 ADAPTATIONS TO TEACHING AND LEARNING

The adaptations to accommodate the delivery of online teaching were found to be made to content taught, assessments, and other administrative services of the HEIs. Regarding the content, different teaching techniques and strategies for online teaching were used. The mode for online delivery was by using different platforms such as Zoom, Google Meet and TrueConf. In addition to the delivery of the content, the teaching practicum of the students went through several changes. Some examples of the adaptations by HEIs are:

> "We allowed a remote access to all staff at the College and everybody started working. For the lecturers and staff, we even delivered laptops, headsets and cameras physically" (HE1).

> "We have started incorporating various teaching approaches and techniques. Our teaching practicums include virtual teaching approaches, how they would guide a concept using video, how they would instruct virtually by interacting with the students" (HE2).

In transitioning to online teaching, where possible, most HEIs merged subjects to create larger groups of students for their virtual classes. By doing so, the teaching load was minimized for lecturers rather than taking smaller groups. HEIs also modified their ways of assessing students.

The responses from the students' survey indicated that HEIs had shared information about the assignments with the students and most HEIs responded to students' queries promptly (see Figure 30).

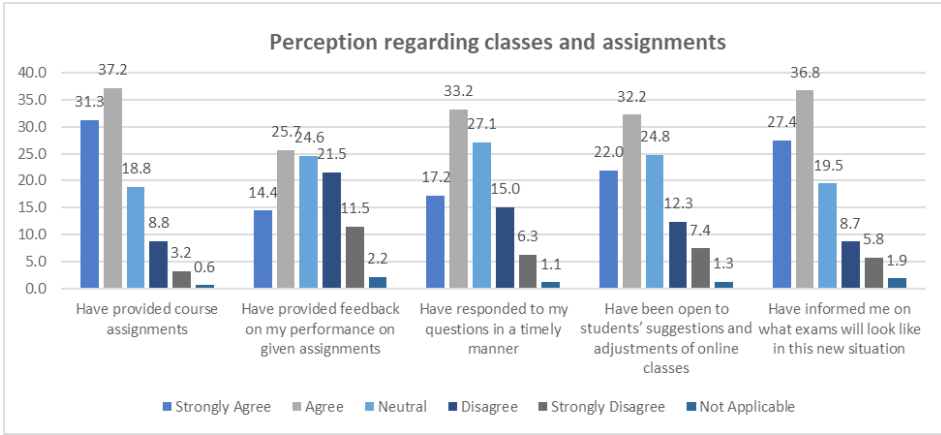


Figure 30. Student perception of classes and assignments

Majority of the students (68.5%) either strongly agree or agree to the statement that the institutions have provided course assignments and about 10% disagree or strongly disagree with the statement. 33% of the students stated they strongly disagree or disagree that the institutes have provided feedback on the students' performance on the given assignments. Most students indicated that the institution responded to the students' questions in a timely manner, were open to students' suggestions and adjustments of online classes and kept them informed on what exams will look like in the new situation.

From the interviews it emerged that while some HEIs conducted online examinations, other HEIs assessed students via projects, assignments and presentations.

> "Our assessments were actually done via canvas. We initially started giving online examinations with cameras. But when the lockdown eased we planned to conduct examinations physically" (HE1).

> "Our mid-semester assessments had to be changed and modified under the situation. We changed our examination to take-home exams, online exams and other types of assessments that will assist to achieve the learning outcomes but not compromise the mandated social distancing measures" (HE3).

> "The exams were largely affected. Under normal circumstance at least 50% weightage was given to an end of term exam. But with the situation of the pandemic, a change was endorsed by the senate to the assessment policy for Term 1. It was decided that alternative assessment components will be offered to students that can assess the basic requirements" (HE5).

In terms of changes to the academic activities this study found that HEIs brought changes to their academic calendar. In most of the HEIs, the first semester was extended to cover the lost time of cessation that occurred during March and/or April 2020. In some cases, the usual break between Semester 1 and Semester 2 was not provided and the duration of the study week was adjusted to enable lecturers to cover the content.

Another finding revealed that all HEIs enabled their staff to work from home. To implement and facilitate working from home, policies were compiled to ensure: staff had access to the necessary facilities & resources, work consistency, and manage staff performance.

5.4 QUALITY ASSURANCE

To maintain the quality of online teaching and learning, and assessments, HEIs formulated policies. Some HEIs implemented policies on online teaching and learning as well as assessment. During the interviews, it emerged that some of these changes brought were approved by MQA.

> "We had materials developed for virtual programs. It is recommended by MQA to develop materials and then to be approved" (HE1).

> "We offered online examinations to a very limited group of students with cameras on during the exam. The Dean was directly monitoring. Later we planned to give physical examination to the students in the islands and appoint an invigilator to monitor the exam in progress. So that's how we actually changed the mechanism" (HE1).

> "The work that was required to ensure an error free efficient exam process was an additional undertaking for us. The exam process was monitored and approved by the Ministry of Higher Education and MQA" (HE6).

It was evident that even though the HEIs were continuing teaching and learning by virtual mode, every measure possible was taken by the HEIs to ensure the quality of education was not compromised. The focus was found to be on the student achieving the learning outcomes of their courses while at the same time, following appropriate quality assurance procedures outlined by the Maldives Qualification Authority (MQA) and adhering to Health Protection Agency's guidelines on virus containment.

To ensure continuity, consistency, and quality of the virtual teaching and learning of HEIs, MQA formulated a guideline in July 2020 that was circulated to all HEIs, providing guidance on virtual education during the pandemic. According to MQA (2020), the circular was released to address the difficulties HEIs were facing and to allow flexibility in managing their teaching and learning.

> "Our immediate response to the situation of HEIs during the pandemic was the circular. We released and approved guidance document titled 'COVID-19 and aftermath guidance for higher education providers on standards and quality'. This document basically guides all the providers on how to conduct teaching & learning and assessment during this period. The guideline was the signal we gave to continue education but of course the students cannot attend physically to learn. So higher education providers can use other facilities like e-learning facilities or internet to deliver their programs" (PM1).

The responses of the HEIs in evaluating, planning and resuming teaching and learning through virtual mode during the COVID-19 pandemic were well planned. It was found that by determining the appropriate adaptations to teaching and learning, HEIs were able to continue their programs being mindful of the quality of education. Because of the pandemic and the associated measures enforced by HPA, HEIs were forced to move to distance remote education with whatever available resources so that the impact on learning is minimized wherever possible.

Since all the HEIs institutions are going online, according to UNESCO and IESALC (2020), the most evident impact on teachers was meeting the varied expectations from stakeholders, including student & parent expectations of content delivery. UNESCO and IESALC (2020) indicated that in most large HEIs virtual campuses already existed and, within it, a virtual classroom was available as an extension of the physical classroom. However, they believed that in practice, the ability of each lecturer to continue teaching largely depends on their experience and expertise in online content delivery. Additionally, the lecturers who lack the required teaching experience and expertise will require external support in the

technological and pedagogical fields. This gap in skills is further intensified in HEIs that had not earlier considered teaching online (Dhawan, 2020). The experience and the shift to online learning very much depends on HEIs availability of online tools and resources along with readiness of the lecturers and students in adapting to change from physical to online teaching and learning.

5.5 SUPPORT PROVIDED FOR REMOTE ONLINE TEACHING AND LEARNING

In the Maldives, with the report of the first case of COVID-19, many institutions initially suspended the education process for a short period of time. However, after realizing that the COVID-19 epidemic and quarantine measures would prolong for months, the teaching and learning process has continued in a remote learning mode using online technologies. Following the HPA guideline issued in March, Ministry of Higher Education published a series of public announcements to enforce suspension of all in-person classes as a containment measure of COVID-19 spread.

The impact of COVID-19 on the HE sector brought many changes to the mode of content delivery. As the teaching and learning of the HEIs embraced remote teaching and learning fully, this unprecedented paradigm shift, for many HEIs, resulted in requiring a strong technical infrastructure. This study investigated the technical, academic and psychological support provided by the HEIs during the continuity of education through the COVID-19 pandemic.

5.5.1 Technical support

To assess the status of the students during the lockdown, the survey carried out for student and staff of HEIs gathered information on the technical support they required during their transition to online learning and teaching. This assessment also identified the devices and services students had access to, for their participation in virtual classes.

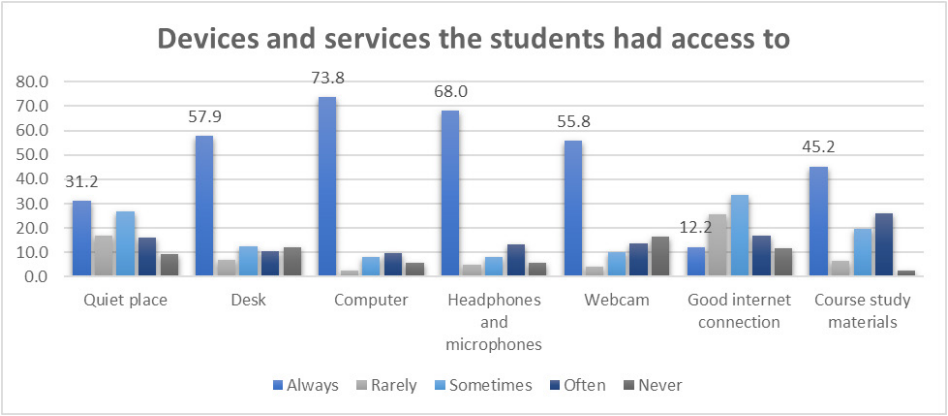


Figure 31. Devices and services accessible to students

The majority of the students who participated in this survey always had access to a desk (57.9%), a computer (73.8%), and headphones (55.8%). Only 31.2% of the

students had anytime access to quiet place. Only 12.2% had uninterrupted access to a good internet connection and 45.2% of the students stated they had access to course study materials. It was identified from the interviews that most of the HEIs provided students with internet connection kits to minimize connectivity issues and hence, enabled students to be able to access to their virtual sessions.

For the staff, the required technical support for remote teaching was provided by the HEIs. Resources such as laptops, dongles, and headsets were provided to the staff by their HEIs, where required. Additionally, various training sessions were conducted to prepare the lecturers for remote teaching and managing learning platforms.

> "We provided dongles, internet package and laptops to our staff. During the lockdown we got permission for one staff to deliver the equipment to staff and lecturers. We provided laptops, headsets, speakers and cameras. We did not have much in stock, so we bought these items" (HE1).

> "We provided devices for lecturers who required them and for some of our admin staff. We delivered the items to them. For some, we provided internet packages and attended to their requests. Remote access to our office PC was given to staff. Prior to COVID-19, we have provided students with dongle for their virtual learning. Also, internet service providers Dhiraagu and Ooredoo provided data for some of our courses" (HE3).

It was also identified that private Colleges which were previously offering virtual learning did not have any issues with technical support as their systems were already set up. Even though, most HEIs provided technical support, it was important to identify whether the lecturers were prepared to use technology in teaching. The survey items pertaining to lecturers' knowledge and skills in technology, how prepared lecturers were to teach remotely and their confidence in their own ability to teach remotely were identified, as shown in Figure 32 and 33.

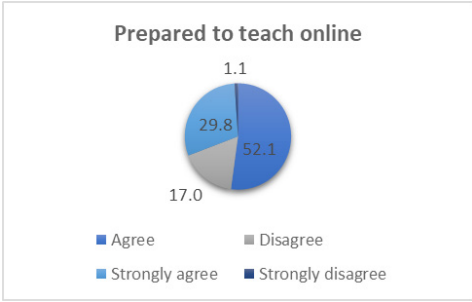


Figure 32. Readiness of lecturers for online teaching

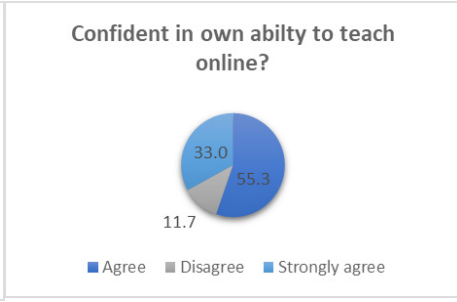


Figure 33. Lecturer confidence for online teaching

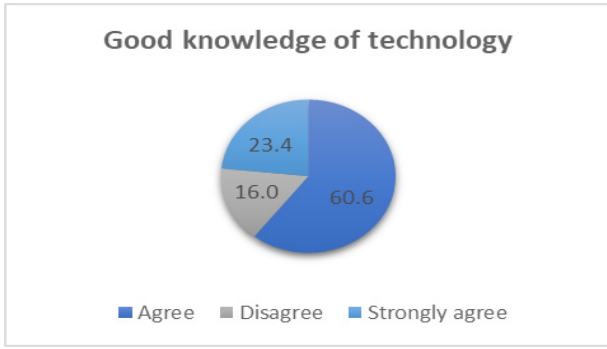


Figure 34. Knowledge of technology for teaching

Majority of the lecturers (52.1%) agreed and 29.8% strongly agreed that they were prepared to teach online. Some people disagreed that they were prepared and 1.1% strongly disagreed to the statement. The majority of the instructors indicated that they were confident in their own ability to teach online. Only 11.7% of the instructors disagreed with the statement. It is noteworthy that 60.6% of the instructors agreed and 13.4% strongly agreed that they have good knowledge of technology. Only 16% of the instructors disagreed to the statement, indicating that they did not have good knowledge of technology.

To enable lecturers to provide effective classes, it was found that HEIs provided trainings for easy transition to remote online teaching.

> "We provided training sessions to lecturers, so their teaching will be more adequate and helpful for students and lessons will become more interactive. Our students and lecturers had to be trained more on the use of virtual platforms. So, our staff took the opportunity and participated in the trainings" (HE1).

> "With the assistance of ICT, we conducted trainings online for all staff on video recording and we also made some written guidelines. Every week about one or two sessions were conducted according to the needs of our staff" (HE3).

With the various support provided by HEIs, the remote learning quality and effectiveness of the virtual classes are believed to go well. Yet, it was imperative to explore the main stakeholders of HEIs, the students' perspectives of remote online sessions. Satisfaction of online sessions was obtained through the students' survey administered in this assessment (see Figure 35).

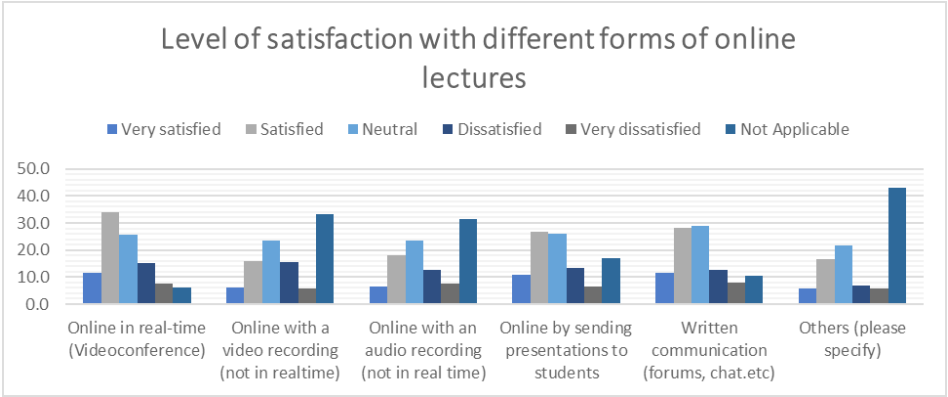


Figure 35. Students' level of satisfaction with forms of online sessions

Most of the students were either satisfied or neutral with the online real-time video conference lectures, the presentations which were sent through online, and the written communication forums. Most students responded that online sessions with video recording, audio recording and other forms of online lectures as not applicable indicating these forms of online lectures were rare or not offered. About 15% of the students said that they were dissatisfied with the online real-time video conference lectures. Overall, student receptivity and satisfaction with the online content delivery of HEIs did not look overly optimistic. It was found that several HEIs across the world provided support to enable and facilitate the virtual teaching and learning during the COVID-19 pandemic. In the Crawford et al. (2020) study, in Hong Kong Universities, relevant online teaching training was provided to staff and students at the beginning. The universities created videos and teaching guides and conducted online workshops to equip staff and students to use various online learning platforms. The content of the training was based on the request from lecturers to ensure different stakeholders were competent and familiar with the relevant skills of online learning. According to Crawford et al. (2020), later, universities developed synchronous and asynchronous online learning approaches. Accordingly, it was constant feedback from staff and students during the period has supported university quality reviews and monitoring of online learning and teaching.

5.5.2 Academic support

As HEIs were functioning remotely, there were various forms of academic support provided to facilitate students' learning. For the private colleges that were already established as virtual education providers, there were no significant changes brought for remote learning. Similarly, the public universities were already offering blended mode of learning that included online content delivery across most of the subjects. Hence, these students were familiar with the academic support online. However, it was evident that some changes were brought to ensure continuity of education during the pandemic. For example: the merging of common subjects for remote learning during the pandemic, synchronous online sessions via platforms such as Zoom and Google Meet were introduced. As a result, students were provided with

orientation to use the platforms.

> "We did a virtual orientation about online material handling and we gave guidance, so the students could actually continue with the program" (HE1).

Further academic support provided for the students included support with academic resources and online administrative support.

> "We provided training to staff on recording lectures, as students had issues with connectivity. We were able to capture all lectures on video and if in any case students were unable to access the online sessions, they had access to the recordings from Moodle" (HE3).

> "We created video instruction on how to apply for official letters/documents and other student facilities. We also had an online chat-bot addressing students' queries. We diverted staff hotlines and reception phone calls to staff mobile phones. We also instructed students to forward their issues through Viber" (HE1).

> "The existing limited physical interactions (e.g. some payments of course fees) were converted online. Even under normal circumstances online fee payment was possible but some chose cash payment earlier" (HE5).

Further, online library services, online course applications and student services were made available to students. The survey explored how the academic support provided by HEIs facilitated the students' remote learning.

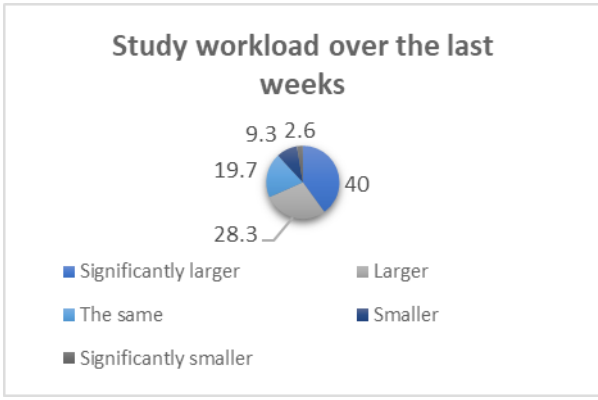


Figure 36. Perception of study workload

Most of the students (40%) indicated that the study workload was significantly larger, with another 28.3% stating it was larger. 19.7% said it was the same, 9.3% said it was smaller and 2.6% of the students said it was much smaller. These results indicated that even with the support provided by the HEIs, most students believed that the online remote learning workload during the pandemic proved to be more taxing on them than the normal study load. This can indicate an actual higher workload owing to required adaptability to the new mode of learning, or it could also be interpreted as the psychological stress associated with the unknown of the

pandemic coupled with the restrictive measures.

5.5.3 Psychological support

COVID-19 has resulted in mental distress among the population, especially among students. The COVID-19 outbreak has disrupted the lives of many people across the world and this was not any different in the Maldives. As reported by MED (2020) the economic impact of the pandemic was felt heavily with the onset of the pandemic as early as May 2020 with the temporary closure of the tourism sector. The worldwide rapid increase of infected cases created a sense of uncertainty and anxiety about what was going to happen. It also caused a tremendous level of stress among the university community, inclusive of students (Al-Rabiaah et al., 2020; Kafka, 2020). This stress may lead to unfavourable effects on the learning and psychological health of students (Al-Rabiaah et al., 2020).

According to a survey conducted in April by Active Minds (an advocacy group for mental health), it was shown that 80 percent of college students said that the COVID-19 crisis has negatively affected their mental health. One-fifth said their mental health has significantly worsened (Brown & Kafka, 2020). The survey done among 2086 College students in the month of April also showed that the vast majority indicated that COVID-19 had negatively affected their mental health (Brown & Kafka, 2020). This survey also showed that 91% had stress or anxiety, 81% were disappointed or sad, 80% were going through loneliness or feeling isolated, 80% had financial setbacks, and 56% were relocated (Brown & Kafka, 2020). The survey also revealed that they have lost their usual coping mechanisms. Students can text or call their college friends, but they did not feel it is the same as getting together for something like a movie night. Classes can feel like an uninspiring imitation of the real thing.

Similarly, in the Maldives, it was expected that under the circumstance of the COVID-19 pandemic, people will be anxious as none had experienced such a situation before. There was fear and anxiety among the community, as the whole world was facing something which was new yet harmful. With a lockdown and health emergency restrictions posed the question whether students were ready to continue education as families were isolated within the communities. A country-wide survey conducted in Maldives in May 2020 (Musthafa et al., 2020) showed that the emotional/psychological impact of the pandemic was much higher than the real health impact, which can be attributed to unprecedented and unpredictable nature of the coronavirus.

Accordingly, the student survey in this assessment explored how the students were managing the situation and whether they had any support to manage their anxieties. The survey items achieved responses from students about support they received if they were unwell, feeling down; also identified persons they can share their problems with, such as discuss about their educational goals, finances, and about family and relationships (See Figures 37 – 42).

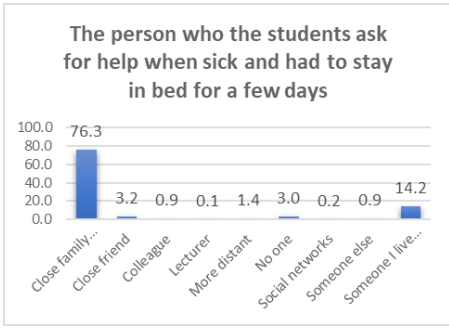


Figure 37. Support for students psychological well-being

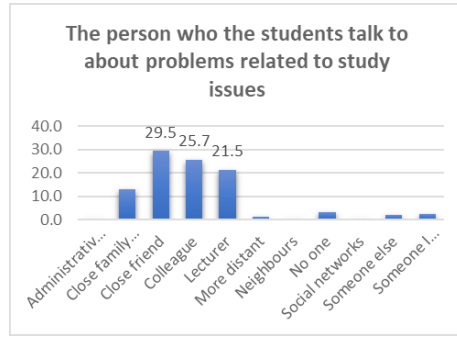


Figure 38. Students' support for study issues

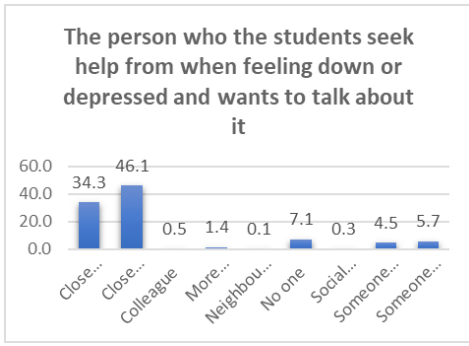


Figure 39. Students' support when sick

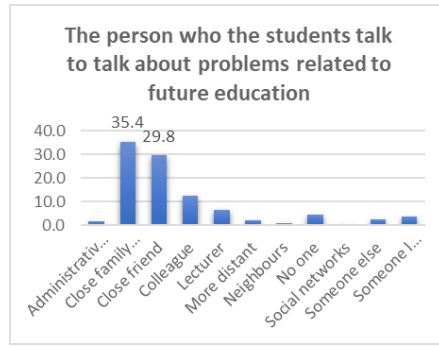


Figure 40. Students' support for study issues

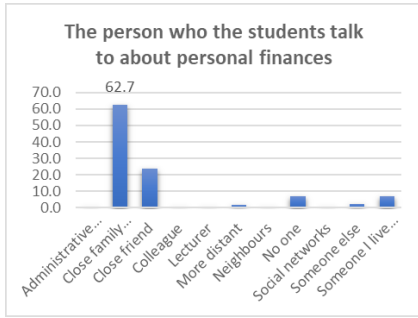


Figure 41. Students' support for financial issues

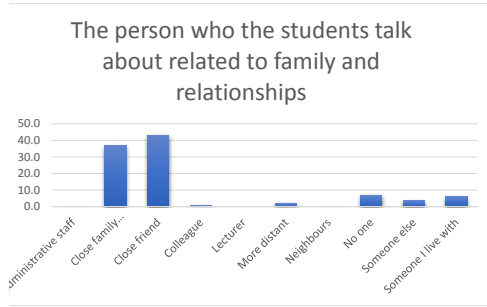


Figure 42. Students' support for relationships

As evident from the Figures 32 to 37, the majority (76.3%) of the students identified close family as the people who the students asked for help when they were sick and have to stay in bed for some days. When feeling down, the students consulted close family (34.3%) and friends (46.1%). When it comes to study issues most students

talked to close friends (29.5%), colleagues (25.7%), and lecturers (21.5%). If the problem was related to future education, the students talked to close family (35.4%) and close friends (29.8%). Majority of the students (62.7%) talked to their close family regarding financial matters and talked to close friends (36.9%), and family (43.2%) regarding problems related to family and relationships.

Students who managed to go home to their islands were worried about being unable to return to their respective institutions to continue their studies. 'Similarly, many students reported experiencing major interruptions in teaching and assessment in the final part of their studies which may cause them not being able to graduate due to the postponement of the final examination in some HEIs. The graduates were also going to face the severe challenges of the global recession caused by the COVID-19 crisis (Sahu, 2020) thus having a serious impact on the careers of this year's university graduates.

The interview data revealed that the HEIs provided psychological support for students by providing guidance and advice. In situations where students expressed the need for support, the Helpdesk was able to attend to the students. However, the students expressing the need for psychological support were at a minimum. This may be due to cultural beliefs and stigma associated with the psychological wellbeing.

> "We had to give a bit more psychosocial support to students from the onset of the pandemic. Some students felt weak or scared due to the pandemic. They were mentally not ready" (HE6).

> "Most people in our culture don't really make use of psychosocial support. Usually people hesitate to talk about difficult issues. We have some provisions overseen by the Dean of students and our health faculty staff are more equipped to offer these services, but they were working in frontline. There were no organized programs and perhaps we were not able to offer an optimum service in that regard" (HE5).

As most HEIs did not have a student mentorship and support mechanism established at the time of the pandemic, the psychological support was not provided at a large scale. However, the information from HEIs show there were attempts to provide support for students in whichever way possible.

> "We actually assigned two of our top management staff who had psychological background. We assigned them to approach the students having difficulties, to maintain a log and identify ways to support them" (HE1).

> "Psychosocial support was provided to students on their request through the help-desk. Students were advised and encouraged to get support from IGMH mental health and Red Crescent" (HE3).

It was evident that HEIs focused on providing psychosocial support for the students to their best ability. Additionally, the student survey of this study identified the psychosocial support provided by HEIs.

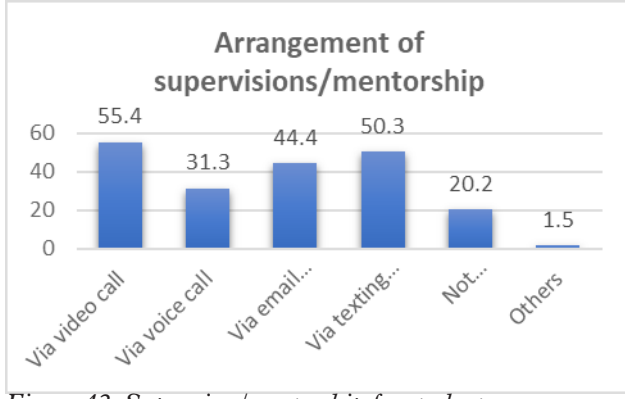


Figure 43. Supervisor/mentorship for students

Majority of the students said that the supervisions and mentorship was arranged through video calls, 50.3% said it was arranged through texting through social networks, 44.4% said it was via email communications and 31.3% stated it was through voice calls.

Studies have shown that during the pandemic students are struggling with aspects of self-care and as a result coping in general was a challenge. As seen from the findings by Brown and Kafka (2020), 76% had trouble in maintaining a routine, 73% found it difficult to get enough physical activity, and some (63%) found it difficult to stay connected with others. In a study undertaken in Saudi Arabia, 77% of the students reported minimal anxiety, 18.4% reported mild anxiety, 4.6% reported moderate anxiety, and none of them reported severe anxiety (Al-Rabiaah et al., 2020).

This study revealed that with the utilization of different channels of communications, the HEIs were timely in providing the services of psychosocial support at their capabilities enabling students to continue remote online learning.

5.6 FINANCIAL IMPACT OF COVID-19 PANDEMIC

The unprecedented COVID-19 pandemic had its impact on all stakeholders of HE, posing many challenges. This study identified the financial impact and challenges faced by students, HE lecturers and staff, and HE managers.

5.6.1 Students

Many students in this study faced difficulties as a result of the COVID-19 pandemic. The students' survey identified the impact on different aspects of student's life. The aspects that were explored by the survey were healthcare, connectivity, continuity of education, ability to socialize and the psychological wellbeing of students as shown in Figure 44 below.

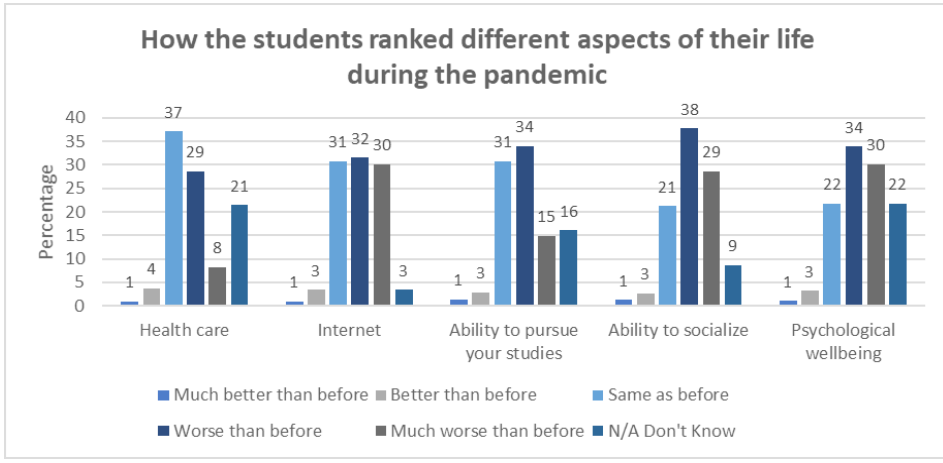


Figure 44. Different aspects of student life during the COVID-19 Pandemic

Figure 44 shows how the students ranked different aspects of their life during the pandemic. Most (37%) of the students ranked health care access being as same as before and 29% said it was worse than before. Some also said they did not know. Access to internet were ranked quite negatively by students with 32% of the students stating it was worse than before, another 30% stating it was much worse than before, and 31% stating it was the same as before. The trend was similar for the ability to pursue their studies, 34% indicated that it was worse than before, 31% indicated that it was the same, 16% said they did not know and 15% said that it was much worse than before. The aspects on ability to socialize and psychological wellbeing were also ranked very negatively. Majority of the students ranked ability to socialize and their psychological wellbeing as worse than before or much worse than before. The impact of the pandemic on students' finances in terms of expenditure, financial income, financial aid and debts were identified (See Figure 45).

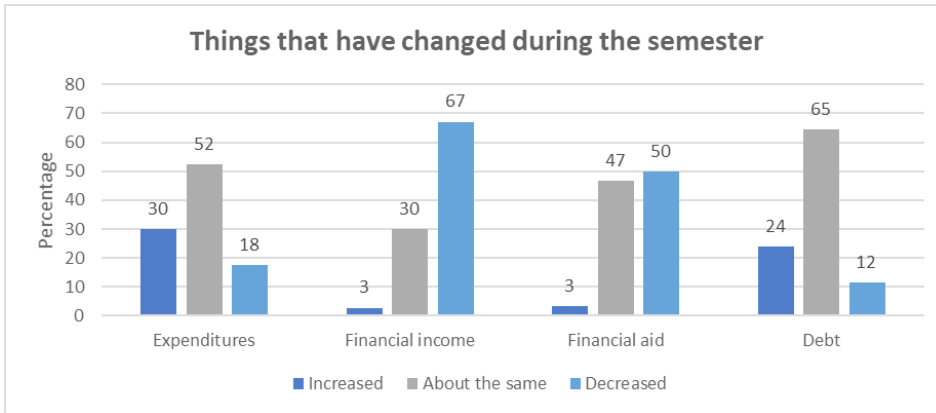


Figure 45. Changes during the COVID-19 pandemic to students' finances

Majority of the participants stated that expenditures were about the same during the semester, with 30% indicating their expenditure have increased and another 18% indicating a decrease in expenditure. A large majority (67%) said that the income has decreased during the semester and 30% said it was the same. Half of the students said that financial aid also has decreased but 47% said it has stayed the same. Majority of the students said their debts stayed the same and 24% of the students said that the debt has increased.

Due to financial difficulties, many students expressed their concerns with their HEIs. Many HEIs were compassionate to the students and took measures to help the students cope with the situations. For example, HEI1 reduced student fees. However, some students differed or opted to withdraw their courses.

> "We gave them a discount because financially students will get some ease as they were in lockdown for three months. Some of them lost their jobs and some were working in frontline. There were different cases. The drop out cases were more in March and April. Some joined after June" (HE1).

> "Some students reported financial hardship and some reported inability to continue studies owing to loss of job either themselves or a family member who is supporting them. We did offer some flexible options" (HE5).

The data showed that students who were in the free degree programs did not have financial issues in terms of paying tuition fees. However, the students who were not in the free degree program requested for easy payment methods.

5.6.2 Institutions

The COVID-19 pandemic had it financial impacts on some HEIs especially the private institutes due to delayed student fees as they were not able to provide salary to staff. As some HEIs were merging common subjects for remote online teaching, the costs of travelling of lecturers to islands for block mode teaching ceased. This became an opportunity to minimize expenditure. Hence, giving a reduction for fees of students did not affect these HEIs negatively. In the case of HEIs which were already offering virtual and blended mode, there was not a significant impact except for some delayed fees because of the hardship on students. Additionally, since physical usage of HEI classrooms and buildings were not in use for months, considerable financial expenses were minimized.

> "There were reductions in the faculties as classes were merged, travelling was cut down and part-time lecturers were minimized. Lots of students applied for easy payment, but it was somehow balanced as we had cost reduction of other expenses" (HE1).

Further, the remote online learning was recognized among potential students and this eventuated in an increase in student enrolment.

> "We actually saw a pattern in the student applications. Students who are applying for virtual programs are increasing. I think they are getting confidence" (HE1).

> "Because we have such a virtual system we were able to extend our services and reach the entire Maldives. The positives of this virtual modality can be witnessed especially during this pandemic. We continued teaching even during the pandemic without disruption" (HE6).

Hence, it was evident that HEIs were able to minimize expenditure, extend their services to a wider community of students and able to manage virtual learning even with the impact of the pandemic. However, as highlighted, it was not a very smooth transition to success as the HE stakeholders faced a number of challenges. Nevertheless, the ability to transition online as well as the permission from authorities to teach online in the transition were notable factors that reduced the negative impact.

5.7 CHALLENGES OF THE COVID-19 PANDEMIC

With the data collected from the open-ended sections of the surveys and interviews for this study, the challenges faced by students, lecturers and HE managers in continuing education during the COVID-19 pandemic was identified. The three themes that emerged under the data analysis for challenges were; unreliable connectivity, unsuitable work/study environment, and limited proficiency in using ICTs.

5.7.1 Connectivity

The teaching and learning activities during the pandemic resumed virtually as remote online teaching and learning in all HEIs included in this study. Hence, all stakeholders required an efficient and stable internet service to continue education. One of the most common challenge found among all stakeholders was connectivity.

5.7.1.1 Students

Students were participating in online classes, using the academic support from learning management systems (LMS) such as Moodle, joining classes online using online conferencing tools such as Zoom and Google Meet, and uploading and downloading learning materials from the LMS. Further, various forms of assessments were also held online, such as on-time or pre-recorded video presentations. For these entire tasks students required reliable high-speed internet. It was noted that to provide accessibility to learning, some students were provided with dongles and internet packages. However, many students had connectivity issues.

> "The biggest challenges faced by students are the internet connectivity. Students reported network issues, they couldn't get range, especially students in islands, disconnections and sometimes few students were not able to participate in the sessions" (HE1).

Likewise, lecturers also experienced connectivity issues while teaching remotely online.

5.7.1.2 Lecturers

Lecturers expressed the struggles they had while trying to deliver the content

online. In addition to their own challenges in connectivity, as a result of students' connectivity issues, some sessions were not conducted to their expectations. Some of the experiences shared by lecturers were:

> "I experienced challenges due to students› connection issues. Most of my students had really bad network and there were days I had to reschedule a session for those who could not connect. Also, some students had difficulties in managing their online learning and off-line work and chores. This makes assigning work and making them complete their work on time difficult" (Lecturer).

> "In the long run online teaching is not effective. It is not possible to make sure how much they participate. When students in islands enter the class room they often face issues of slow network, getting disconnected often, and other barriers in case if the weather is not good" (Lecturer).

Some of the connectivity issues were identified by the lecturers and reported to the HEI managers. As a consequence of these difficulties faced by students, lecturers reported being lenient in making decisions about students' participation and other issues regarding connectivity, hence, providing additional and flexible opportunities for students to complete their work.

5.7.1.3 HE Managers

There were limitations experienced by the HE managers in facilitating learning through virtual mode. Some qualities that were found to be lacking were the student engagement and interactions that would usually occur in a physical classroom.

> "I believe the body language of the lecturer and the interactions that students experience in classroom settings are very limited in online classrooms. In this regard, the quality of teaching and learning online could be lower" (HE6).

Another challenge identified was connectivity issues. Lecturers reported lack of data and connectivity issues while teaching remotely. Hence, teaching from home was challenging for many lecturers, as reported by HE managers.

> "Most lecturers reported about data and connectivity issues. One of the major challenges was the internet is not reliable for online teaching. Our learning support system Moodle also have issues mostly because of connectivity" (HE5).

> "There were impact on networks because everyone was at home. So, there were network issues. We were able to solve that with discussion with our internet service provider" (HE6).

It was evident that connectivity issues were experienced by lecturers. Hence, such technological issues may have an impact on the facilitation of online teaching sessions.

5.7.2 Unsuitable home environment

5.7.2.1 Students

Many students enrolled in HEIs are mature students and have families. Also, when students were residing with extended families, during lockdown students had a

lot of responsibilities and even interruptions during their online classes. With the pandemic, the lockdown limited alternative arrangements such as babysitters or caretakers for their children while the students attended the classes.

> "Many students are women with children. Children are also confined at home with nowhere to go. So, children are bound to approach their parents, ask questions, run around the house and be active. Because of the lockdown and social distancing measures, everyone was scooped in their home and the students were unable to make alternative arrangements for their children" (HE5).

> "Students were participating in online class, but sometimes their children are there, and they seem distracted. Sometimes the children can be heard in the background calling their parents" (HE6).

5.7.2.2 Lecturers

Likewise, most lecturers working from home also experienced difficulties. With children and other responsibilities at home, and also when the entire family was at home because of lockdown, the lecturers had several difficulties. For example; noise from children and home was an issue when delivering content in remote online teaching.

> "While the lecturer is teaching, there might be other members in the house using the kitchen, cooking, eating and the sound of utensils. This will be disruptive for students. The lecturer will have the microphone on, most of the time, even if the students can be muted until they speak" (HE5).

> "Some of our lecturers are expatriates. As we all know, in most cases they share a room with others and wouldn't have much of another space within the home either. The shared space became a challenge. As soon as the lockdown was eased many lecturers requested for the normal arrangement of teaching from the College" (HE6).

It was evident that most students and lecturers did not have an ideal environment to work from home and this was understandable with the situation of the unprecedented COVID-19 pandemic. Yet, with resilience of lecturers and students, remote teaching and learning continued.

5.7.2.3 HE Managers

The issue of congestion especially in Male' is a common knowledge. During the lockdown with COVID-19 pandemic, people were forced to stay home, confined to small spaces, especially in apartments. This is different in the case of islands, where house compounds are usually large and there is ample space and fresh air. However, across the Maldives, it is common for extended families to live together (Moosa, 2019). However, when living with extended family, there were difficulties for most lecturers as reported by HE managers and therefore was challenging for the management to impose working from home policies.

> "I strongly believe not everyone has an ideal home environment to have the required privacy for teaching. Also, because children too were home because of the school closure/lockdown, that definitely was an additional challenge. It

> is noteworthy that we have quite a large proportion of female lecturers and I believe only someone in their shoes can express how difficult or challenging it has been" (HE3).
>
> "People live in congested confined spaces especially in Male' and even in islands some lecturers are living with a large family. Because of the pandemic all family members are in the house confinement 24x7. Therefore, even to work from home, teach from home or learn from home, there were challenges for everyone" (HE6).
>
> "Lecturers were having a challenging time balancing family life and work at the same time. It wasn't easy but even with the challenges lecturers were able to continue teaching and provide support for students" (HE5).

It was evident that working from home may not be as easy as people may have perceived, especially under the enforced lockdown measures. The findings from this study identified the challenges of working from home as experienced by the lecturers in their teaching roles and by managers in managing multitude of issues in enabling working from home.

5.7.3 Use of ICTs

In remote online learning, students were expected to use learning platforms that hosted the online classes. This required lecturers and students to use technology. Additionally, students were also required to complete and present several tasks online by screen sharing. Since some HEIs were already providing virtual and blended classes, the students enrolled in those classes were familiar with the learning management systems such as Moodle. Prior to the pandemic the LMS was mostly used for asynchronous content. However, during the pandemic the remote online learning required more synchronous sessions and this involved acquiring new ICT skills. Additionally, some HEIs transited to virtual mode for the first time during the COVID-19 pandemic. Consequently, since the students had not experienced virtual learning before, this presented some challenges.

> "Our students were not aware of this technology. There are specific groups like those who are doing Dhivehi teaching program and those who are not very fluent in English. These students had some difficulties" (HE1).

While mature students had difficulties in managing technology for online learning, it was also found some lecturers were not very technology friendly.

> "When we started our virtual programs, few lecturers were not comfortable with teaching online and they had a bit of difficulty with technology" (HE3).
>
> "There were staff who needed help with technology. They were not familiar with the applications we used and were not familiar with the mechanism. It took time for them to get the hang of it" (HE5).

Even though staff and students had difficulties at the initial stage of remote online teaching and learning, students and lecturers were able to manage and continue with the planned academic activities. Additionally, the HEIs provided technical

support for students and lecturers, and professional development for lecturers based on areas which needed improvement.

The expectation on teachers to teach asynchronously and synchronously has led to teacher burnout. The main findings of a survey done by Flack et al. (2020) indicated an exponential increase of workload where 70% of the teachers said that their planning had increased significantly and a significant increase in demands of their time under remote learning. Respondents in their survey felt burdened to teach remotely and many felt that they were socially isolated. Many teachers also faced a lot of challenges teaching their students and managing the learning needs of their own children and taking care of them. A lot of teachers believed that teaching is successful when connection is strong with students and colleagues. Subsequently, the shift of learning from face-to-face classes depended on a digital learning environment. The need to use digital technologies has doubled immensely making digital learning tools compulsory. These findings also highlighted the digital divide between the rural areas and urban cities. The Internet has become a basic necessity to education, however many teachers and students around the world face considerable challenges in getting internet access due to connectivity issues and the high prices.

> "In Latin America and the Caribbean there is a large contingent of universities that have virtual education programs, with great variability in quality and also in completion rates. Other HEIs, located in more remote areas of the countries, do not have a broad-spectrum Internet service and some do not even have basic connectivity services. Many students from rural areas in countries like Argentina, Bolivia, Colombia and Peru and who have returned to their homes now find themselves with worse connectivity conditions than they had in their urban homes near the HEIs where they study" (UNESCO & IESALC, 2020).

The findings from this current study of Maldives HEIs highlighted that the situation locally is much more favourable compared to many other countries, as noted above.

Additionally, in many countries, most teachers in HEIs have part time contracts and due to the economic crisis, many temporary contracts were terminated.

> "…cessation of face-to-face teaching activity looms as a threat to those teachers whose contracts focus exclusively on teaching complementary classes, such as practical classes or seminars, and who are frequently part-time and considered an auxiliary or peripheral complement…" (UNESCO & IESALC, 2020).

Public and private HEIs are facing the same issue in Maldives. As was highlighted earlier, most HEIs strategized staff workload to ensure minimal dependency on part-time lecturers to reduce on the costs faced with the financial challenges. The termination of contracts will have a huge impact on the teacher's income and also it will impact the teaching and learning in the institutions.

The quick digital transformation of HEIs has led to several immediate challenges,

with lack of time given to prepare, teachers are challenged to find creative and innovative ways to adapt the content delivery of courses. According to UNESCO and IESALC (2020) immediate digital transformation of HEIs not only requires the incorporation of technologies, but also requires the creation or modification of processes and the availability of people with the appropriate capacities and skills to develop the said processes and technologies.

6. CONCLUSIONS AND IMPLICATIONS

The assessment was carried out by the MNU for the Ministry of Higher Education, targeting all HEIs in the Maldives. This study was able to identify the impact of COVID-19 on all aspects of higher education country-wide, including policy, academic, management and financial responses, and physical and psychological fitness of stakeholders. It was evident that the HEIs' response to COVID-19 pandemic was timely and occurred in three phases, which were: 1) evaluating the impact of COVID-19 pandemic on teaching and learning, 2) planning for continuity of education during the pandemic, and 3) resuming teaching and learning through virtual mode. The support provided by HEIs for remote online teaching were found to be technical support, academic support and psychosocial support. Further, this study was able to identify the financial impact of the unprecedented pandemic of COVID-19 on the HE sector. The challenges faced by the HE stakeholders included issues with internet connectivity, unsuitable home environment to work or study from home, and complications or challenges in using ICT in teaching and learning.

The implications of this study for the HEIs in continuing remote online teaching and learning via virtual mode are as follows:

- HEIs should hold dialogue with stakeholders for preparations of contingency plans for teaching and learning in emergency situations, including continuity of education through the next phase of the pandemic.
- HEIs should create policies and guidelines suitable for continuity of education at emergency situations without compromising the quality of education.
- All academic staff and students should be provided with an orientation of new policies and guidelines before the implementation stage.
- There should be continued professional development based on use of technology for students and lecturers. It is evident from this assessment that it is essential that lecturers are proficient in the use of up-to-date technology.
- Working from home is challenging. However, working from home has proven to be a possibility though, and offers greater flexibility where classes are more popular when offered after formal work hours and/or weekends. A strengthened work-from home policy is recommended for flexible lecture delivery and as an emergency preparedness measure.
- There is now a greater realization that HEIs can use internet as a medium for content delivery and teaching and learning operations, hence, can aim towards paperless operations.
- It was evident that by opting to continue education during the pandemic the HEIs were able to reach student communities by remote online teaching. Based on this, a percentage of online classes could be included within the regular

classes to equip lecturers and students with familiarity and develop their skills in using technology in teaching and learning, thereby also ensuring country-wide inclusive opportunities for prospective students irrespective of their geographic isolation.

- The crisis of the COVID-19 pandemic has also revealed the vulnerability of the student communities. A greater need for psychosocial support is evident. Hence, HEIs should have a strong mentor system established within the institution and academic staff /mentors should be provided with professional development in this aspect.
- During a pandemic like COVID-19, there is a high pressure on, and a tremendous workload for management and administrative staff of universities, as they are responsible for ensuring the continuity and quality of teaching and learning process. Therefore, it is important to recognize what they are doing and have policies in place for a safe and conducive environment for them to work.

This study aimed to reach all HE stakeholders in the Maldives. A high response rate of stakeholders was expected at the data collection phase, especially for the survey questionnaires from students and lecturers. Although, the expected numbers of surveys were not completed, a very good response rate was achieved mostly from the public institutions. As mentioned before, it was evident from the study that the HEIs in the Maldives responded to mitigate the impact of COVID-19 in a timely manner by switching to online mode of teaching and learning. Nevertheless, the wider consequences of adopting remote learning or technology in education are yet to be seen. Institutions need to constantly review their decisions and the impact of the changes they brought in the learning process of the students. Doing this without waiting for the pandemic to be over will ensure the needed changes are timely and will not affect shaping the future of the generation of students attending HEIs.

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