

## *Exploring the Challenges of Academic Fatigue and Strategies to Enhance Retention for the Determined Ones (TDOs) in Online Learning*

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The European Conference on Education 2022  
Official Conference Proceedings

### **Abstract**

The daily activities of educational institutions globally were affected by the Covid-19 Pandemic in 2020. The abrupt transition from on-campus to distance learning gave students and educators limited time to prepare for such a massive shift in teaching and learning. Students with disabilities (dubbed TDO students in the UAE), were negatively impacted because their normal routines had been abandoned, leading to anxiety and stress. This study adopted a qualitative approach to explore effective strategies for online learning, to engage TDO students, implement a support program to meet their needs and enhance online learning experiences whilst reducing fatigue and improving retention. Research tools included semi-structured interviews, observations and document analysis. Five themes were derived from the findings, including a lack of training for students and staff, standardization of TDO identification procedures, limited use of online tools and time factor. Data collected revealed challenges of academic fatigue and retention for TDO students. Strategies for positive impact was an increase in the use of technology tools that facilitated high student engagement, e.g. Nearpod, Padlet, Kahoot, Quizzies, in online settings. A reduction in the length of classes led to improved retention figures. Recommendations from the study included the creation of a TDO Support Hub, increase the use of assistive learning technology tools, such as, audio books, desktop magnifying screen, supernova software as critical factors. Also, offering a more personalized curriculum to TDO students, in conjunction with providing continuous opportunities for staff to be trained in online teaching approaches made a difference.

Keywords: Academic Fatigue, Retention, Assistive Technology, Online Learning

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## Introduction

The original publication for this study (Lottin, J, 2021) described a summer project that was initiated to get some answers, following the challenges of academic fatigue and increasing student drop out from courses when the pandemic struck.

Governments worldwide, including in the United Arab Emirates (UAE), were keen to contain the spread of the coronavirus. Educational institutions across the UAE, guided by the UAE Government federal mandate and Ministry of Health directives, moved from face to face classroom instruction to an online distance learning platform dubbed "Learn from Afar" (Juman, 2020), in order to keep the citizens safe. All educators had to change their teaching approaches by using high quality engagement strategies and methodologies needed to maintain high-quality teaching for students learning through an online medium or platform.

Consequently, HCT students moved to online learning in response to the Covid-19 pandemic, implemented out of necessity for reasons of health and safety. Through this pilot study, system wide surveys were sent to students to establish how they were coping with their studies. Feedback received depicted a trend that students were facing lots of challenges staying focused online for the two hours' duration of lessons. Also, issues of online academic fatigue and retention on programs became apparent. TDO students were highlighted as particularly affected by the transition and struggling in virtually all their courses. An analysis of the survey questions revealed results of inconsistent routines for them, unknown plans, staff not trained on alternative online learning and assessment strategies, lack of home support for students using an online mode of delivery, soft skill components missing from the online approach, and students questioning faculty competency in using the technology. An advisory committee was created to discuss the impact of the transfer of delivery to a fully online model, and what strategies could be explored to support and address online academic fatigue and retention. Hence, following the data collected and analyzed, HCT leadership decided to address these issues through a call for a pilot project, to implement quick-win strategies to remedy the two key issues of academic fatigue and retention. This research project would focus primarily on implementing an academic support program of strategies to rectify any barriers and challenges that TDO students were facing with online learning. Other recommendations included training staff to deliver classes using effective, proven online strategies and for practical solutions that would enhance student retention.

A research motivation was also to provide equitable learning opportunities to TDO students that would empower them with the knowledge and skills to be valuable and active contributors to the UAE society and economy. This paper focuses on:

- Exploring effective strategies to improve learning for The Determined Ones (TDOs), in the delivery of online lessons.
- Investigate the impact of using technology tools that facilitated high student engagement for a positive impact in online learning.
- Analyze assessment data for TDO students' success rate, when the use of adaptations such as accommodations and modifications to assessments are in place.
- Investigate how HCT can improve academic fatigue and retention for TDO students through the creation of an Academic Support Hub.

## **Purpose of the Study**

The purpose of this qualitative research study was to determine the strategies that were effective in supporting the needs of TDO students in online learning, and implement the use of technology tools such as Nearpod, Padlet, Kahoot, WebQuest, Quizzies, and discussion boards to engage students more. Also to reinforce the use of the new online strategies, a dedicated TDO Hub would be created to meet their needs. The aims of the study focused on implementing the approaches and strategies in class in order to enhance the online learning experience for students across HCT. The support program in the TDO Hub included developing a system that intersperses multimedia content and learning materials with regular short activities and assessments that improved student engagement, provided more collaborative learning opportunities, more asynchronous learning opportunities, break up lectures, gamification and direct student support. The program implementation was monitored, its effectiveness evaluated through a survey and focus group sessions with participants before, during and after lessons. Furthermore, the use of assessments within an online learning and teaching environment were reviewed to ensure that it had a positive impact on students' progress. The TDO support program provided a rich and contextualized view of how various stakeholders, including faculty instructors, counselors and students, perceived the implementation of online learning, especially as it pertained to TDO students.

In recognition of the UAE Government 2019 Strategy of 'No Emirati Left Behind', this research study fully aligned to the vision of the country's leaders that guaranteed equity for all its citizens. It was essential that HCT identified and removed any barriers to successful online learning for TDO students, thus eliminating any educational disadvantage they would encounter. The transfer to online learning had resulted in students having up to 6 hours' minimum a day of online learning, mostly with traditional back-to-back lessons, in addition to extra hours required for reading, doing research, completing homework and other assignments on their programs.

## **Research Design and Methodology**

This pilot study adopted a qualitative approach using multiple data collections tools, including semi-structured interviews using a questionnaire to participants, some analysis of relevant documents, and student observations during class time. These three tools would address the five research questions namely:

### **Research Questions (RQs)**

- 1) What are TDO students' experiences with online learning?
- 2) What was the impact to students' academic fatigue levels with the transfer to online teaching and learning?
- 3) What innovative strategies using online technology tools could improve students' outcomes to ensure higher retention rates?
- 4) What was the structure of the academic support program to reduce TDOs academic fatigue in online learning?
- 5) How could HCT improve the learning of TDO students using an online delivery mode?

While quantitative research emphasizes the measurement of specific variables and the extraction of particular data relevant to the research topic, qualitative research, on the other

hand, aims to examine specific behavioral patterns by analyzing the attitudes, beliefs, and intentions of the target population and forming a suitable explanation based on the gathered observations (Draper, 2004).

The use of semi structured interviews had been gaining popularity in recent research given their importance in shedding light on the different perspectives between several groups of people regarding the topic of interest. Additionally, interviews would generate a large pool of data in a relatively short period of time, and the results would be illustrated in a reader-friendly way by demonstrating specific quotations used by the participants (Rabiee, 2004). Furthermore, interviews had also been known for their ability to provide reliable explanations for people's behaviors and actions, especially since the target population was specifically chosen based on its expertise in the topic at hand (Heary and Hennessy, 2002). For instance, in this research, the target population was selected based on their ability to provide relevant and insightful information which helped the researcher adequately address the five research questions. Furthermore, the topic of this research demanded a more personalized approach for data collection where the methods used provided subjective and valuable information from the participants. It allowed participants to express their perceptions and beliefs openly. It was important for the TDO students' voice to be heard. Hence, using a relatively small sample size in the pilot study enhanced the researcher's attentiveness to specific details and observations, all of which would most likely be ignored when adopting a quantitative approach to research.

Research questions 1 and 2 were addressed using semi-structured interview questions in the form of a questionnaire, consisting of a total of 24 open-ended questions, categorized as follows:

- Ten questions targeted at students through one-on-one interviews. The aim was to grasp a clear view of the experience of TDO students exposed to an online learning environment, and its impact on their fatigue levels.
- Eight questions were addressed at instructors during interviews and the aim was to explore the instructors' use of online engaging techniques and any related modifications that catered to the needs of TDO students to reduce academic fatigue and improve retention.
- Six questions were directed at counselors to determine their adherence to learning supports, including accommodations and modifications, that HCT provided for TDO students.

The questionnaire, translated into Arabic, to facilitate student understanding, began with an introduction of the research study after which the participants were asked to voluntarily respond to the open-ended questions. All necessary approvals were secured through the HCT Applied Research Department. Participants were informed about the possibility of withdrawal at any time without any repercussions. The questions were designed to cover a 45 minute to 1-hour conversation. Some of the interviews were audio-recorded, noting that participants were also well informed of the possibility of stopping the recording at any time or replay it for clarification. Most importantly, the researcher guaranteed full anonymity through the use of pseudonyms throughout all the reports. The interviews were conducted virtually on zoom where participants were encouraged to switch on their video cameras to trigger engagement. Research questions 3 and 4 were addressed using another qualitative research tool of document analysis. The documents included student assessment data, to compare success rates when the use of accommodations and modifications to assessments are

in place and were utilized. Using observations as a qualitative research tool was directed towards the pedagogy, adaptations, and modifications to the curriculum. The researcher was keen to observe where multimedia content and learning materials was interspersed with regular short tests or quizzes. This played a crucial role in improving student engagement and retention.

Finally, research question 5 directed the focus of the research to provide recommendations to reduce fatigue levels and increase retention through the provision of more collaborative opportunities as learning is inherently social and relationship building (Bollinger and Sheppard, 2010, Morrow and Davis, 2011). Some strategies would be promoted within the dedicated TDO Academic Support Hub to include, but not limited to asynchronous learning strategies, breaking up lectures into manageable fragments, and using assistive technology to allow for heightened interaction and reinforcement activities as gamification or simulation exercises. The target population for this pilot phase included 150 students, 10 instructors and 4 counselors at the HCT.

A qualitative method was most appropriate for the data collection to include semi-structured interviews of the participants - students, teachers and counselors, and document analysis from multiple sources of student data, teaching resources and assessment data. The study employed an investigative approach to evaluate how HCT staff applied their comprehension of implementing strategies to reduce academic fatigue and improve retention, in order to enhance the online learning experience for students across HCT, and thereby achieve the study purpose. Issues faced by students on lack of training in using the technologies, long teaching hours online, back to back lessons, students' concerns about instructors' unfamiliarity with the technology, lack of home support with the online mode of learning, were explored. Focus was placed on the pedagogy, adaptations and modifications to the curriculum.

## **Literature Review**

The sudden change from on-campus learning to distance learning was the direct result from the Covid-19 pandemic. This sudden transition affected both students and instructors. This literature review focused on evaluating effective strategies to support the TDO or special needs students through online learning. The review focused on strategies to enhance the experiences of students in online learning experience at HCT. Synchronous and asynchronous learning are categories of e-learning. Synchronous learning refers to online, real time learning, using video conferencing features. Within the virtual classroom, students could ask questions and instantly communicate and interact with instructors and peers. Asynchronous learning on the other hand, is done offline at a student's own time and pace. With asynchronous learning, tasks are delivered online or sent via email and discussion boards. Many educational institutions used a mixture of synchronous and asynchronous classwork and instruction for online learning. Flaherty (2020), stated that synchronous learning did not always provide students with a variety of disabilities what they required to learn.

Flaherty (2020) also maintained that a more deliberate mixture of live and asynchronous learning was needed for future distant teaching. Hughes (2014), stated the disadvantages of synchronous learning with students stuck to time schedules and the learning pace and structure set by the instructor. He also considered the fact that students were at a loss because they were not receiving individualized attention that they required. Alternatively, he argued the advantages of asynchronous learning, where students made better progress through

interaction with peers and instructors, while reading, listening or observing different types of content. This approach to teaching was highly beneficial to students, including students with disabilities. Students had the option to complete tasks at their own pace, as per their individual needs. With an asynchronous approach, Also, an asynchronous approach gave students the capability to review concepts that they were unsure of, together with related resources. Such an effective strategy had the potential to diminish academic fatigue for TDO students in managing their own time, and study at their own pace that met their educational, social and emotional needs.


Anderson, (2020) noted that the unanticipated transfer to online learning urged the need for students with disabilities to have an equitable education. She mentioned Chris Danielsen, Director of Public Relations for The National Federation of the Blind, who stated that ‘the primary issue for blind students was with learning materials not being compatible with screen readers’. Danielsen stated that ‘with the rush to move everything online in the light of COVID-19, universities needed to pay attention to whether materials were accessible or not for the students’. Tiwary, (2020), asserted that student retention rates could be improved by nearly seventy-two percent with the formation of online communities and portals. He claimed that students performed better as active parts of a learning community, for example, discussion forums which allowed students’ the opportunity to collaborate, engage and bond with other students. Students basically learning with their peers as a social activity, similar to traditional learning in the classroom (Tiwary, 2020). He suggested another strategy of ‘personalized assessments and online course moderators’ (Tiwary, 2020). He held that because course moderators guided and mentored students, providing targeted feedback, this led to increased student engagement and satisfaction. Tiwary (2020), asserted manifestations that students displayed, an indicator for course drop outs. These encompassed erratic completion of work and missed assessment. Early intervention and communicating with these students in a timely manner was critical in comprehending the rationale behind their indifference to work. Therefore, the early intervention strategies were a pathway to early identification and recognition to put in place processes to effect change (Tiwary, 2020). Common challenges with distant learning were the absence of 1:1 contact followed by prompt teacher feedback that the majority of learners preferred, as quoted in (Brown, 1996; Carr, 2000; Garland, 1993; McGivney, 2004, as quoted in Fozdar and Kumar, 2007). "Online education can open the door for learners who are challenged by traditional classroom environments for many students, especially those with social anxiety, autism, or speech difficulties, learning at home could help them engage with study materials at a pace that felt comfortable to them’ (Lynch, 2019)’. Phase 2 of this project after this pilot phase would explore the use of assistive technology in more depth in the TDO Support Hub.

## **Analysis and Discussions**

Thematic categorization of data from the interviews, survey and document analysis were done. The themes that emanated and were analyzed from rich data that was collected and collated fell under five themes. This included professional development, communication barriers, special needs identification processes, time, knowledge of the use of technology, adaptations made to the environment, curriculum, instruction and assessment practices.

**Findings**

**Themes**



	TDO Students			
				150
				10
				4
	Lack of Training	Identification Processes	Knowledge of use of Technology	Time
TDO Student	Not provided	Stigmatisation still a barrier.	Technical support during exams	97% - saves time
Instructor	Not provided	Awareness sessions were limited Timely intervention needed.	100% Special Needs Training needed.	Time consuming to convert traditional courses to online courses.
Counselor	Not provided	Medical forms completed at registration time.  Some campuses have a process to update faculty on TDO information.  Need for a system wide Approach.	100% Special Needs Training needed.	Used well to provide critical support

Table 1–Findings from the data collected–questionnaires, class observations and document analysis

An analysis of the data revealed the findings that instructors lacked the knowledge to use highly interactive online tools to engage students in an online environment. A fact that tie in with the literature on older faculty in higher education who are not up to speed yet with technological enhancements in teaching and learning. They were in need of continuous, professional development training to raise their skills in using the new technologies with TDO students. Some instructors and counselors relied on using their prior knowledge from their home countries to support TDO students. Professional development should target specific methods and techniques on identifying TDO students and best teaching practices to accommodate them. Interestingly, the responses to RQ1 were mixed. TDO students found using the technology easy. Although it was challenging at the start, they later overcame this challenge which had to do with log-in issues where IT Support resolved the issue. Also, the sampled students preferred the online mode of learning because ‘we saved time travelling’, ‘Online learning was better for me. At home I am safe and away from Covid situations’, ‘I can focus better online’, ‘For me it is easy online’, ‘Yea, I can watch the recordings online’ I can understand better’ to quote some student responses. Taking tests at home was preferred, as they were in their comfort zones and the use of accommodations with extended exam time was a bonus. So time as a key theme was a big positive factor for students.

However, although they provided some benefits for themselves, students with visual impairment and other learning disabilities struggled with the long hours in front of a screen, preferring the instructors to use zoom-in features, which many instructors were not aware of these online features. Additionally, and to answer RQ2, students’ fatigue levels were low after the first few months of the transition to online learning. The norm for two hour lessons proved challenging to TDO students because their schedules had three successive back to back classes. The impact of academic fatigue was palpable and TDO student absenteeism increased because they felt overwhelmed. A solution was sought as a means for quick wins – HCT reduced the length of classes from two hours to one hour, increased faculty and students

contact time for 1:1 support meetings. flipped classrooms and asynchronous learning started taking place with the faculty who were familiar with these e-Learning techniques.

Findings that answered RQ3 was delivered as a stepped approach. Firstly, all HCT academic divisions were requested to engage in a robust process to review and update teaching and curriculum resources to suitable online formats. This was followed by a schedule of professional development (PD) training on the use of online resources for high engagement. These steps had an immediate impact as faculty got empowered and applied new learning innovative approaches to combat fatigue and increase student retention rates. Data collected and analyzed following the 'quick-win' approaches evidenced a change in student and staff morale. Faculty started reporting that some TDO students' attendance improved following the aforementioned interventions. A key factor was that faculty and students started using digital learning tools such as Nearpod, and Padlets, WebQuest and Quizzies and online focus group discussions that facilitated high student engagement to support Tiwary's (2020) position. These effective strategies using the interactive resources mentioned above facilitated access to learning for TDO students. These innovative practices formed the beginnings of a support program to answer RQ3 and RQ4. The pilot student had limitations due to the pandemic, so RQ3 and RQ4 could not be explored deeper. These will be explored post pandemic during phase 2 of the project.

As curricula updates carried on, together with more PD being offered, faculty began offering a more personalized curriculum, with easy accessibility to online resources for the TDO students. This practice aligned with the vision of the UAE founders for an equitable education for all its citizens, irrespective of their disability of 'No Emirati Left Behind'. Furthermore, findings included instructors mostly unaware of the SEN identification stages. All the counselors were aware of the identification processes during student orientation, with accommodations put in place. However, there was a lack of a standardized system wide approach across HCT. Familiarity with the terms accommodations and modifications were limited, although extended time, extra handouts, and recording sessions were utilized. Instructors had little communication with counselors, hence many were unaware of TDO students in their classes. Assessment strategy was a sub theme that was identified. Assessments were not modified. However, students with dyslexia were given extended time completing assessments, and there were instances where the assessment was changed from an oral to a written assessment to assist TDO students who had speech impairment. Also, test instructions were given in both languages, Arabic and English, as examples of accommodations. No adaptations were made to course learning outcomes (CLOs). Instructors and students expressed the benefits of having recordings of classes, so that TDO students could review the lesson at their own time and pace. Some instructors also used effective strategies where students recorded oral assessments in place of online presentations that left them nervous. Another strategy was the implementation of competency based assessments that improved student engagement and achievement. Course teams were urged to develop activities that would break up lectures and to use gamification, collaborative and asynchronous learning opportunities in the delivery of lessons. The revised courses were structured on developing an adaptive curriculum that incorporated appropriate accommodations (RQ4) which is ongoing.

As this study moved from the Pilot Phase to Phase 2, RQ5 would be fully answered where a student centered TDO Support Hub would be created as the 1st TDO Support Hub at HCT to serve the needs of the TDO Students. The Hub would provide support using online interactive tools to enhance learning. The use of assistive learning technology as a gateway to



an accessible curriculum to reduce fatigue and increase retention, for example, audio books, desktop magnifying screen, supernova software would be critical devices to support TDO students. This project has secured a AED 200,000 Interdisciplinary Grant to purchase the assistive tools. Future research would evaluate the effectiveness of the support program and extend the TDO Support Hub across other Higher Education entities in the UAE, and Gulf Region.

## **Conclusion**

The study focused on the challenges of academic fatigue faced by TDO students and explored strategies to enhance retention for this specific targeted group of students. Several highly engaging interactive online strategies were explored and implemented with much success to alleviate the stress on TDO students. Recommendations that reduced fatigue and increased retention through the provision of more collaborative opportunities since learning is inherently a social and relationship building activity (Bollinger and Sheppard, 2010, Morrow and Davis, 2011) proved successful. Asynchronous learning opportunities in lessons would reduce stress and fatigue as well as student processing time. Teaching students using a flipped classroom approach, delivering the materials in smaller chunks, use of assistive technology allowed for higher engagement and less fatigue. Also, the use of gamification is not only a fun way to learn but promoted a more engaging experience for TDO students. This study had its limitations where only a limited amount of observations were conducted before full Covid-19 lockdown went into action across the UAE. Hence, observations done remotely through zoom did not prove as effective in ascertaining how students responded to the new ways of learning online when the technological tools are used regularly. Face to face observations will be recommended during phase 2 of the project for better analysis of the outcomes, and the impact of applying online learning strategies.

## **Appendices**

### **Appendix 1 – Questionnaire**

#### **Questionnaire for Summer Research Project**

**Research Method: Semi-Structured Interviews; 1:1 (students) and in Focus Groups (instructors & counselors)**

**Researcher:** *Dr Jacqui Lottin*

#### **Introduction**

After the welcome and introduction by the researcher, participants will be asked to respond to the following open-ended questions. Participation is voluntary. Approvals have been obtained through HCT Research Department. Participants will be informed about their choice of withdrawal from the sample if they so intend without any consequences. The following questions have been designed to guide the scheduled 45 minutes to 1hour conversation and will be audio-recorded. Participants may ask for the recording to be stopped at any time or replayed for clarification. The researcher may be taking notes during the interview.

Finally, the research team guarantees anonymity by using pseudonyms in the report for all students, instructors & counselors in order to protect the identity of each participant. The semi-structured interviews will be conducted through zoom and some protocols with regards to camera begin switched on will be strongly advised to encourage engagement.

#### **Rationale**

Rationale: The purpose of this research project is to address the needs of The Determined Ones (TDOs) in dealing with fatigue from the HCT online mode of delivery of lessons. The study will explore what the needs of the students are, their experience with online learning, the available resources, and will make recommendations on strategies to improve online learning which will reduce fatigue and enhance the learning retention of these students across all HCT Campuses.

Challenges with Online Teaching - (leading to Fatigue and issues with Retention of students who cannot engage).

#### **Questions for Students (one-to-one interviews)**

- 1) What are the benefits you gained with the current online teaching and learning?
- 2) How do these challenges affect your overall learning and success on the course(s)?
- 3) What support and benefits did you receive, e.g. academic support, technical support, psychological or medical support. Please describe the support you have received in facing the challenges?
- 4) How do you think that HCT can better provide the necessary support to meet your needs? For example, academic, technical or psychological support during online and face to face teaching.
- 5) Did you meet with your counselors and academic advisors to discuss your concerns during the online learning? For example, academic concerns, technical or family concerns. If yes, how were these meetings beneficial?

- 6) How would you compare online learning and face to face learning in helping you to understand the content of the lessons?
- 7) Were you able to access the materials online? Please explain
- 8) Do you prefer online or face to face learning? Please explain
- 9) How were you able to engage with online class discussions to enhance your understanding of the learning outcomes?
- 10) What training did you receive to support you with the online learning experience and how did it help you to engage with your teacher and classmates?

### **Questions for Instructors (focus group interviews)**

- 1) Have you had any type of professional development training on teaching TDO students? What was it.
- 2) Are you aware of any TDO students in your classes/and or among your advisees? How was the identification done?
- 3) Are you familiar with accommodations and modifications for TDO students? Describe some strategies you have used.
- 4) Have you modified your assessment strategy and instruments to cater for the TDO students? If yes, please provide some examples.
- 5) Do you use differentiation learning strategies in your classes and how? If yes, please share 2 examples.
- 6) What adaptations to the Course Learning Outcomes (CLOs), assessments and classroom activities have been implemented in your course for the TDO student?
- 7) How would you describe the professional development and training opportunities available for instructors of TDO students? Have you attended any? If yes, what has been the impact on student learning? If No, why have you not attended any?
- 8) Please provide any strategy, delivery improvement, innovation that you have used or would like to share for online teaching of TDO students, e.g. new assessment strategy?

### **Questions for Staff - Counselors**

- 1) Do you know how to access and use the information from the HCT National Admissions & Placement Office (NAPO) portal for the post-secondary student information database?
- 2) What procedures do you follow in the identification of TDO students? Give examples of the steps used.
- 3) What processes do you follow to inform Program Chairs (PCs) and Faculty about the TDO student?
- 4) How do you ensure that the accommodations required are being met during the online administration of Faculty Wide Assessments (FWA) and other assessments, e.g. e-Portfolios, presentations?
- 5) Do you meet with TDO students and discuss their issues and concerns? Why or why not.
- 6) How do you deal with these issues and concerns? Please give two examples.

## **Appendix 2 Participant Consent Form – TDO Student/Counselor/Instructor**

March 2021  
Higher Colleges of Technology  
Abu Dhabi

Dear Student/Counselor/Instructor,

My name is Dr. Jacqui Lottin. I am currently a lecturer and the Education Program Team Leader at HCT, Al Ain Women's College. I am conducting a qualitative study on the impact of online teaching and learning in order to 'Reduce Academic Fatigue and Enhance Retention for the Determined Ones (TDOs).

The purpose of this study is to create an academic support program that will implement effective inclusive strategies to support the needs of TDO students, during online learning. The study will explore what the needs of the students are, their experience of online learning and the available resources to support learning using multimedia content, asynchronous learning opportunities, assessments that improve student engagement and gamification; it will make recommendations on strategies to improve online learning which will reduce academic fatigue and enhance the learning retention of targeted students across all HCT Campuses. The rationale is to develop best practices and pedagogy to support HCT transition to an online learning platform. The program implementation will be monitored for effectiveness and evaluated on its positive impact on students' progress.

The data collection will include remote and in-person (where possible), semi-structured audio-taped interviews, using a questionnaire within focus group workshops. Also, classroom observations of TDO students and document analysis will be conducted. Three research assistants will be utilized at the interview sessions and interviews will be recorded with the permission of the student, and transcribed. Transcripts will be given to the students to check for accuracy. The student questionnaire will be comprised of 10 questions, to be used during the semi-structured interview sessions. The format will be a 45-minutes to one-hour sessions with individual students. Additionally, students' academic performance will be evaluated by comparing students' average exam marks before and after implementing online teaching.

The interviews and observations will be coded to ensure anonymity; all audio tapes will be destroyed after they are coded. Additionally, samples of student work, Intervention Plans, Individualized Education Plans and other relevant documents will also be examined.

The above information is provided to help you decide whether you wish to participate in the present study. You should be aware that you are free to withdraw at any time without affecting your relationship with this researcher or the university.

Do not hesitate to ask any questions about the study before or during the research. I would be happy to share the findings with you after the research is completed. A pseudo name will be used to protect your identity and that of the college in the findings, so your anonymity is assured in line with the HCT's ethical code of conduct. There is no perceived risk for you taking part in this study. The anticipated benefits will be raising a greater awareness of where your teachers are with respect to implementing inclusive education to meet the needs of all the students.

I attach an HCT approval letter requesting your permission to conduct this study at HCT.

Please feel free to contact me if you have any questions or concerns. You can talk to me by phone or email. I am more than happy to provide further information on the study if required. I look forward to hearing from you.

Yours faithfully

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Participant Name:

Participant Signature:

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