European Journal of Teaching and Education
ISSN 2669-0667

# Investigating the Enhancement of Students' Motivation in Online Classes During COVID-19 – A Case Study of Abu Dhabi Polytechnic

Bashar Abu Shunnar[1*], Peter Lawson[2], Abeer Fahim[1], Wissam Abu Shunnar[3]

[1] Assistant Professor of English, Abu Dhabi Polytechnic, United Arab Emirates
[2] Assistant Professor of Physics, Abu Dhabi Polytechnic, United Arab Emirates
[3] Educational Supervisor, Ministry of Education, Jordan

**ARTICLE INFO**

**Keywords:**
*motivation,*
*online classes,*
*Covid-19,*
*ADPoly*

**ABSTRACT**

During the outbreak of the COVID-19 pandemic, interest in online classes has increased due to the restrictions imposed by the pandemic. The motivation towards this type of education is of great importance to the success of online classes. Therefore, the current study aims to investigate the level of enhancement of Abu Dhabi Polytechnic (ADPoly) students' motivation toward online classes. The study used the descriptive analytical approach in collecting and analyzing the data through the sample responses of (260) males and females. The results indicated a moderate level of enhancement in students' motivation toward online classes, in general. Through the results, it was found that (Course and Curriculum Structure, Parental Habits and Involvement, Learning Environment, and Peer Relationships all contributed highly to the enhancement process, While the enhancement was moderate about (Teaching methods, technical issues, and assessments). In addition, the results indicated that there were no statistically significant differences in the level of student motivation enhancement due to gender or year level.

## 1. Introduction

On March 11, 2020, the World Health Organization (WHO) classified the coronavirus disease COVID-19 as a pandemic, since then thousands of confirmed cases have already been reported in the middle east and Arabian Gulf, in almost all the countries of the region, and a growing number of deaths. This pandemic consequently has left human beings applying preventive measures against its contagion, these being: the mandatory use of masks, alcohol, antibacterial gel, social distancing, compliance with requirements to go out to supply basic needs and services, in other words, preventive confinement. In addition, all kinds of social, labor, and educational interaction were suspended, closing public and private institutions, including those of an educational nature such as universities (Jebril, 2020).

* Corresponding author E-mail address: bashar.abushunnar@adpoly.ac.ae

**Cite this article as:**
Shunnar, B. A., Lawson, P., Fahim, A, & Shunnar, W. A (2023). Investigating the Enhancement of Students' Motivation in Online Classes During COVID-19 – A Case Study of Abu Dhabi Polytechnic. *European Journal of Teaching and Education*, 5(2): 1-12. 2https://doi.org/10.33422/ejte.v5i2.929

© The Author(s). 2023 **Open Access.** This article is distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use, distribution, and redistribution in any medium, provided that the original author(s) and source are credited.

Consequently, a change in the teaching-learning processes was implemented, establishing the virtual medium as the main tool of education, worldwide. According to (Mohtar & Md Yunus, 2022): Accessibility to platforms and the ease of connecting to the internet and technological equipment can influence the skills and knowledge of students, as the use of various technological resources allows for better interactivity in their classes. Additionally, (Yeap et al., 2021) stressed that it will be a great challenge for any national educational system because of the lack of connectivity in the country, the lack of devices among students, and the scarce training of teachers in the development of technological skills. However, at the same time, it is going to make us accelerate the digital teaching model that had been projected for years.

In the aspect of online classes, several studies (Alqudah et al., 2020; Layali & Al-Shlowiy, 2020; Maatuk et al., 2022; Saxena et al., 2021; Stecuła & Wolniak, 2022) were carried out and consisted of indicating that online classes can be alternatives for the development of generic competencies and the adoption of good educational practices within the teaching-learning process. About the findings of these studies, the learning activities developed virtually received a good weighting, confirming that virtual education is a means to improve both skills and learning in university students.

On the other hand, (Igai & Yunus, 2022) conducted a study to know the perspective of the students who came from the face-to-face methodology and switched to a virtual one. The negative assessment they make of distance learning is explained by the perceived inverse relationship between dedication to study and academic performance and by the teachers' lack of adaptation to the personal and academic circumstances of the students. In conclusion, it is determined that the university must move towards more collaborative and student-centered models.

Furthermore, findings of (Zarei & Mohammadi, 2021) showed that the interposition of pedagogical and curricular concepts of face-to-face education in a virtual education model leads to inconsistencies and contradictions related to criteria and techniques of the evaluation processes, organization of learning activities, methods, and forms of study, characteristics of the contents, forms of interaction between students and positions of teachers in their training roles. In addition, evidence was found on ambivalent constructions of personal learning environments carried out by students. Finally, to consider some difficulties that arose in the application of virtual classes, the study carried out in (Moustakas & Robrade, 2022) agreed that the challenges they faced with the contingency were due to training in digital skills, both for students and teachers, as well as having computer equipment and access to the internet in urban areas and remote.

In light of this research, this paper aims to determine the academic motivation that the students of ADPoly programs have towards online classes during the Covid-10 pandemic outbreak. The paper begins by defining and contextualizing the term “motivation” generally and specifically in relation to online classes.

## 2. Literature review

Motivation is a process that generates behavioural activations in people, prompting them to start, continue, maintain, finish, or satisfy an objective, purpose, need, or achievement set at a given time. According to (Santrock, 2017) “motivation is the set of reasons why people behave the way they do. Motivated behaviour is vigorous, directed, and sustained” (p. 153).

There is abundant literature on the different types of student motivation in the online classroom, namely intrinsic and extrinsic motivation. While intrinsic motivation is motivation that is derived from a student's internal state and personality, extrinsic motivation is motivation that is derived from the learning environment. According to Greenhow (2022), online learning requires the participation of students at their own risk, meaning that they must force themselves to participate in class sessions, according to what their own conscience dictates, while interacting with the teacher and the rest of the students. This is an example of intrinsic motivation which features as a prominent theme in research on online education. However, researchers also argue that student success is dependent on different types of motivation (Gustiani, 2020; Mohtar & Md Yunus, 2022; M. H. A. Rahman et al., 2021; Yu, 2022).

During COVID-19 pandemic outbreak, in addition to facing a global health emergency that has generated fear and anxiety, students were forced to migrate to online classes, a situation that required rapid adjustments affecting daily habits, routines, experiences, and expectations. Faced with a situation characterized by less direct support from teachers and classmates, this set of changes required students to demonstrate a higher level of self-motivation for learning (Maatuk et al., 2022).

As a replacement for face-to-face learning in the classroom, schools carried out online classes using digital platforms. This sudden and massive change in learning brought with it unplanned curricular changes as well as challenges as a result of the transition to online learning. The causes of these obstacles have been found primarily in the lack of technological infrastructure and support. This situation was not exclusive to the student body; teachers also had to face difficulties in changing the face-to-face pedagogy due to the lack of knowledge of online teaching. Similarly, although some educational institutions and teachers were able to run online learning, many students faced multiple issues, including the inability to access technology resources or a lack of computer skills (Ghazali, 2020).

In this sense, internal factors have been identified as stable personal characteristics of online students who have obtained successful results. In fact, comparative studies carried out before the pandemic between students in online and face-to-face mode indicated that online students were more influenced by their intrinsic motivation than students who followed their programs in the classic face-to-face mode (Hartnett, 2018; Keller, 2008). These statements were corroborated by Gustiani (2020), who showed that the online students were highly motivated by internal factors, and the most successful had personalities that drove them to carry out their studies. Gustiani (2020) notes that students' participation in online learning was the result of their intrinsic motivation which was expressed in their self-determination, personal interest, beliefs, and ambitions. Gustiani (2020) adds that both the possibility of punishment for being absent from the online class, as well as the existence of adequate facilities for learning, were identified as external regulatory elements in the form of extrinsic motivation for students. In contrast to students who were intrinsically motivated to learn, students who participated in online learning passively and uninterestedly took learning only as an obligation rather than a necessity. However, sufficient learning support facilities led them to assume a form of self-determined motivation that prompted them to experience positive external motivation for their online learning. This condition positively influenced the degree of internal motivation of the students.

The influence of the different forms of support on students' academic motivation has also been corroborated by (Zhang et al., 2021) , who showed that students' anxiety and teachers' social support were highly significant predictors of changes. in the motivation of the students and in

the way they developed their cognitive processes. It was found that a negative effect of anxiety and a positive effect of the social support of the teachers contributed to the academic motivation of the students. In relation to anxiety, (Zhang et al., 2021) found that the most anxious students experienced greater decreases in their academic motivation, which corroborates the findings (Moran-Suarez, 2022) when they stated that psychological factors such as anxiety, stress and pain during emergency situations and quarantines had detrimental effects on learning.

For example, in the case of the (UAE), the recent COVID-19 pandemic has forced educational institutions to adopt e-learning. Thus, Higher education institutions in the UAE have implemented e-learning systems and programs for this unprecedented situation. Some studies indicated that motivation variables were closely related to both e-teaching materials and key aspects of e-assessment relative to other aspects such as e-discussion, e-examination, and feedback (Elshareif & Mohamed, 2021). In (Al Rawashdeh et al., 2021), authors stated that it is critical for potential students to understand the differences between an online classroom setting and a face-to-face classroom setting as there are both advantages and disadvantages of e-Learning to both environments that can maybe impact their overall performance (Al Rawashdeh et al., 2021). Furthermore, the findings in (Abdallah & Abdallah, 2022) show that perceived usefulness, perceived ease of use, computer self-efficacy, subjective norms, instructor's factors, administrative support, and technical support, along with system quality, influence students' behavioral intention to accept e-learning.

In (R. M. A. Rahman et al., 2022), The results indicated that the readiness, training and technical support for applying online learning for UAE universities during the Covid-19 pandemic, from the students' point of view, came at a high level. Their perspective regarding the process of teaching and learning through online learning came at a medium level, and the challenges facing the application of online learning at an intermediate level. Their perspective regarding suggestions for improving the online learning experience came at a high level. Students' responses differed based on criteria of looking at both sexes with preference for the female gender.

**Problem statement**

Due to the global health emergency caused by COVID-19, there were closures of educational institutions in UAE, affecting all students in higher education institutions. This is a challenge for the educational community as it caused learning losses even though the online education allows greater flexibility for students to work at their own pace, requiring greater autonomy in the learning process (Layali & Al-Shlowiy, 2020). However, for some people, interaction with others is a factor that promotes their motivation to learn (Kamysbayeva et al., 2021). In addition, the interaction supports the learning process, promoting the feeling of community and positive relationships, which influence the perception of self-efficacy (Aldhahi et al., 2022).

Most of the studies focused on the factors that control students' motivation towards e-learning, and most of them are due to infrastructure and economic conditions. In the UAE, there is a well-structured infrastructure even before the outbreak the Covid-19 pandemic related to the extent to which e-learning contributes to improving students' motivation, especially towards e-learning. This study examines this particular topic of e-learning and student motivation, specifically in the context of Abu Dhabi Polytechnic. This topic is of great significant given that the absence of student motivation can lead academic issues that can impact students on many levels. It can lead to frustration, abandonment of studies and even mental health problems (Fatimah & Mahmudah, 2020).

Moreover, although academic motivation has been one of the most studied variables in the educational environment, there are still debates and unknowns about it when considering online classes (Kulikowski et al., 2021).

### 2.1. Aims and objectives

This paper aims at investigating the enhancement of students' motivation in online classes during COVID-19. Thus, the following objectives are set:

- Describing the motivation level toward online classes during COVID-19 of ADpoly students.
- Identifying the differences in student's motivation toward online classes during COVID_19 pandemic outbreak at ADpoly programs.

## 3. Methods and materials

This study is a cross sectional study that utilizes the descriptive and analytical approach for collecting and analysing the research data collected from the study sample. The undergraduate students at ADPoly programs were the population of interest for this study during the academic year (201-2022). However, the study population was represented by a sample of (2021-2022) students with various demographics (gender, year) as shown in Table 1.

Table 1.
*Sample distribution by department and Gender*

| **Major/ Department** | **Gender** | **Count** |
|---|---|---|
| Advanced Energy Engineering Technology | Male | 70 |
| | Female | 15 |
| Electromechanical Engineering Technology | Male | 319 |
| | Female | 261 |
| Information security engineering | Male | 210 |
| | Female | 187 |
| Petroleum Engineering Technology | Male | 107 |
| | Female | 89 |
| Meteorology | Male | 23 |
| | Female | 6 |
| Aircraft Engineering Technology | Male | 70 |
| | Female | 69 |
| Aircraft Maintenance Technology | Male | 954 |
| | Female | **716** |
| Total number of males | **954** | |
| Total number of females | **716** | |
| **Overall** | **1670** | |

The final valid responses reached (260) males and females from various departments. However, this sample includes students from all levels (1st year, 2nd year, 3rd year, and 4th year). Table 2 shows description of students numbers by year.

Table 2.
*Sample distribution by year level*

| Year level | Count | Percentage % |
|---|---|---|
| 1st year | 106 | 40.8% |
| 2nd year | 54 | 20.8% |
| 3rd year | 48 | 18.5% |
| 4th year | 52 | 20.0% |
| **Overall** | **260** | **100%** |

This study used data collected from online surveys of undergraduates at ADPoly programs carried out during (2021-2022) academic year. The online survey instrument was developed and approved by the researchers at ADPoly and was reviewed by the academic advisors before data collection. Table 3 describes the relevant motivation attributes that make up the online survey.

Table 3.
*Description of Students' motivation online survey*

| Attribute | No_of_items |
|---|---|
| Course and Curriculum Structure | 5 |
| Teaching Methods | 4 |
| Parental Habits and Involvement | 4 |
| Learning Environment | 7 |
| Peer Relationships | 4 |
| Assessment | 5 |
| Technical issues | 4 |
| Total | 33 |

As shown in Table 4, a total of (33) items were used to measure students' motivation through 7 attributes. ADPoly students' motivation enhancement in the online classes during COVID- was determined by (33) items measured on a Likert scale rating (5: strongly agree;4: agree; 3: neutral; 2: disagree; 1: strongly disagree). The items covered 7 attributes: Course and Curriculum Structure, Teaching Methods, Parental Habits and Involvement, Learning Environment, Peer Relationships, Assessment, and technical issues. A Cronbach's alpha coefficient was applied to verify the reliability of the survey instrument be relevant to items for academic advising with (0.904), which is extremely indicates the reliability of the survey instrument. Table 4 shows the reliability coefficients for each attribute.

Table 4.
*Reliability coefficients for Motivation attributes*

| Attribute | Cronbach's alpha |
|---|---|
| Course and Curriculum Structure | 0.809 |
| Teaching Methods | 0.823 |
| Parental Habits and Involvement | 0.873 |
| Learning Environment | 0.807 |
| Peer Relationships | 0.843 |
| Assessment | 0.852 |
| Technical issues | 0.808 |
| ***ALL*** | 0.90 |

For determining the students' motivation toward online classes during Covid_19 outbreak, the calculated means of their responses were judged based on three categories (High, Moderate, Low). The process relies on Likert 5 scale and the following equation:

$$Differnce\ rate = \frac{highest\ response\ value - lowest\ response\ value}{\infty Number\ of\ catogarises} = (5-1)/3 = 1.33$$

Thus, the judgment of the student's motivation will be decided based on the categories shown in Table 5.

Table 5.
*Perception level categories*

| Mean | Level |
|---|---|
| 1-2.33 | Low |
| 2.34-3.67 | Moderate |
| 3.68-5 | High |

Several statistical techniques were utilized to analyze and review the data. Further descriptive statistics (frequency, mean and standard deviation), and independent t-test were applied to identify the differences in students' motivation toward online classes during Covid_19 by their gender, and ANOVA was used to determine differences between them by their academic years. The statistically significant cut-off point was set at ($\alpha <= 0.05$).

## 4. Results

This section provides the descriptive and analytical results of student responses to the online survey. The results start with answering the research questions RQ1, RQ2, and RQ3 as follows:

*RQ1:* Among students at ADPoly programs, which of the following motivation level was maintained toward online classes during Covid_19 pandemic outbreak: Low, Moderate, or High? To answer these questions, a descriptive analysis was carried out to find the frequencies, means, standard deviation, and motivation levels for all attributes as shown in Table 6.

Table 6.
*Students' motivation toward online classes during Covid_19 at ADPoly Programs*

| # | Attribute | N | Mean | Std. Deviation | Rank |
|---|---|---|---|---|---|
| 1 | Course and Curriculum Structure | 261 | 3.73 | .70 | High |
| 2 | Teaching Methods | 261 | 3.29 | .91 | Moderate |
| 3 | Parental Habits and Involvement | 261 | 3.80 | .90 | High |
| 4 | Learning Environment | 261 | 3.77 | .61 | High |
| 5 | Peer Relationships | 261 | 4.12 | .65 | High |
| 6 | Assessment | 261 | 3.40 | .58 | Moderate |
| 7 | Technical issues | 261 | 3.25 | 1.01 | Moderate |
| | **Overall Students Motivation** | 261 | 3.62 | .53 | Moderate |

Table 6 shows a moderate positive motivation toward online classes during Covid_19 pandemic outbreak at ADPoly programs, with a mean (of 3.62) and Std. Deviation (0.53). However, Peer Relationships rank highly (4.12; 0.65) followed by Parental Habits and Involvement (3.80;0.90), Learning Environment (3.77;0.61), and Course and Curriculum Structure (3.73;0.70). While Assessment (3.40; 0.58), Teaching Methods (3.29;0.91), and technical issues (3.25;1.01) came next with a moderate level. Figure 1 depicts the mean comparisons for each motivation attribute.

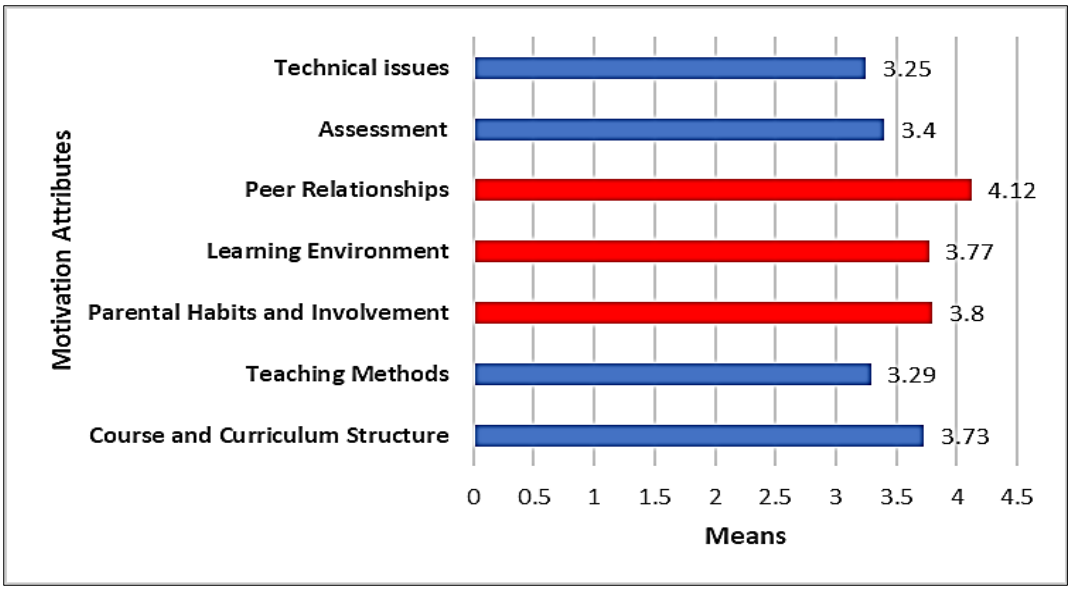


*Figure 1.* Means comparisons for each motivation attributes

*RQ2:* Between different years levels of students at ADPoly programs, is there a difference in motivation toward online classes during Covid_19 pandemic outbreak at ADPoly programs? To answer this question, the ANOVA test was applied, and the results are shown in Table 7.

Table 7.
*ANOVA test of differences between years levels*

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | .914 | 3 | .305 | 1.071 | .362 |
| Within Groups | 72.800 | 256 | .284 | | |
| Total | 73.714 | 259 | | | |

The results in Table 7 show no significant difference in the student's motivation toward online classes during Covid_19 pandemic outbreak at ADPoly programs attributed to years levels, as sig value ($\alpha$>=0.05). Figure 2 shows the differences among students according to the year's levels.

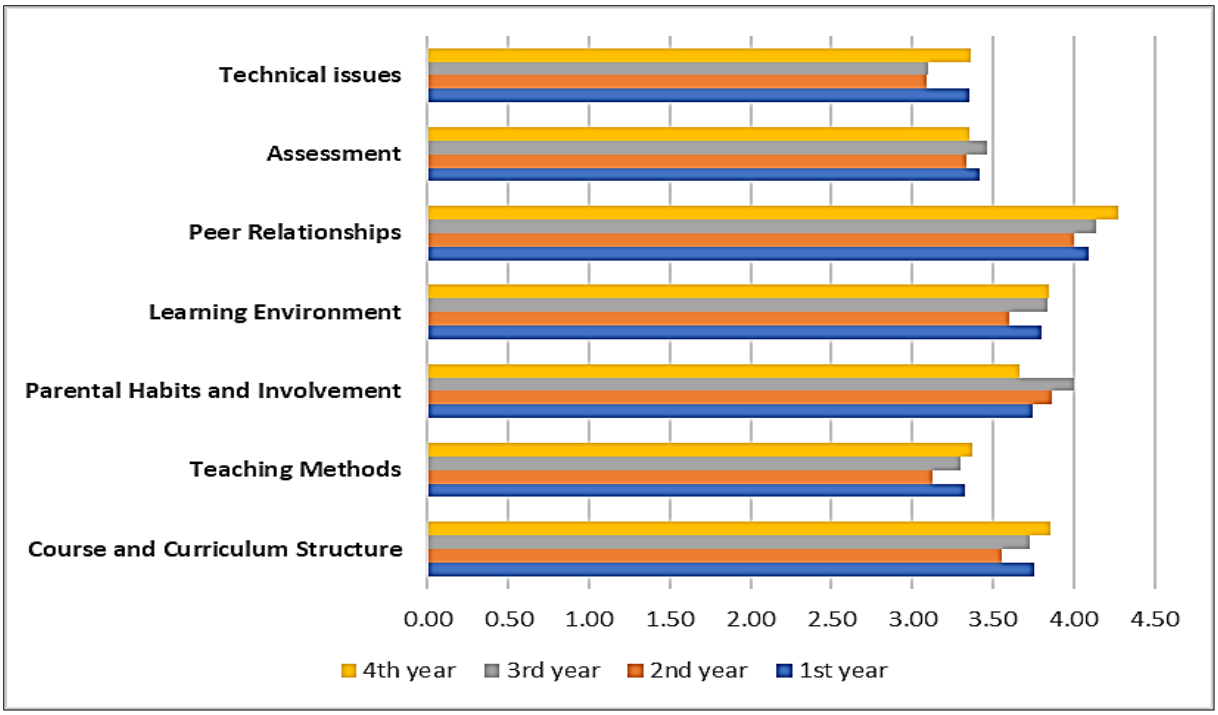


*Figure 2.* Differences among students according to the year's levels

*RQ3:* Between female and male students at ADPoly programs, is there a difference in motivation toward online classes during Covid_19 pandemic outbreak at ADPoly programs? To answer this question, two independent sample t-test was applied, and the results are shown in Table 8.

Table 8.
*T-test of differences between gender*

| | | F | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
|---|---|---|---|---|---|---|---|
| students' Motivation | Equal variances assumed | 2.914 | .927 | 259 | .355 | .06137 | .06620 |
| | Equal variances not assumed | | | 258.999 | .348 | .06137 | .06534 |

The results in Table 8 show no significant differences in the student's motivation toward online classes during Covid_19 pandemic outbreak at ADPoly programs related to gender, as the sig value is (0.355) and needs to be ($\alpha<=0.05$) to indicate a statistical difference.

## 5. Discussion

ADPoly undergraduate students generally maintained moderate motivation toward online classes they received from the ADpoy programs. However, they rated some motivation attributes as high level, such as (Course and Curriculum Structure, Parental Habits and Involvement, Learning Environment, and Peer Relationships); while they wanted more support and be more motivation toward (Teaching Methods, Assessment, and technical issues). The results highlighted that the content and learning environment provided by the ADPoly programs are capable of enhancing students' motivation. On the other hand, the assessment process and teaching methods drive the improvement of students' motivation at a lower level,

and this is necessary due to the process of managing the online classroom as well as the commitment to study plans in a new learning environment. As for peer relationships, they have reached a high level of ability to enhance students' motivation due to the multiplicity of digital channels through which students can form academic relationships among themselves and the ease of access to that. Regarding parental involvement and habits, they have greatly contributed to improving students' motivation because they believed in the need to provide all that is necessary and consistent with the new learning environments. These results are consistent with the results provided by (Kulikowski et al., 2021; Mohtar & Md Yunus, 2022).

Among the two demographic characteristics tested, Gender (Male, Female), and year level (1st year, 2nd year, 3rd year, and 4th year), a moderate positive overall motivation rating for online classes were recorded. However, regardless of years level, students maintained similar motivation levels toward online classes at ADPoly programs according to gender. The absence of statistically significant differences according to the gender variable and the level of years can be explained by the fact that all students in ADPoly programs have the same requirements and educational environment, and this is not affected by the difference in gender or academic year.

## 6. Conclusion

The current study intends to find out how much students at ADPoly have improved their motivation for online lessons. Motivation has been identified giving influence in students' online learning at ADPoly. the study used the descriptive analytical approach. The findings showed a modest increase in students' motivation for online classes as a whole. The results showed that Course and Curriculum Structure, Parental Habits and Involvement, Learning Environment, and Peer Relationships all greatly contributed to the enhancement process, but the enhancement was only moderately about Teaching methods, technical issues, and assessments. Additionally, the findings showed that neither gender nor academic year level was associated with any statistically significant differences in the level of student motivation.

## 7. Recommendation and future work

According to the results, the study provides the following recommendations and future work:

1- It is recommended to provide students with more support in solving technical issues and assessment problems in online classes. As well as improving the teaching methods used in online classes.
2- A teacher training program for managing online classes based upon students' motivation could be implemented.
3- A future study can be conducted to highlight the mediating\moderating role of initiating a training program for managing online classes in the relationship between students' motivation and online classes.

## References

Abdallah, N., & Abdallah, O. (2022). INVESTIGATING FACTORS AFFECTING STUDENTS'SATISFACTION WITH E-LEARNING: AN EMPIRICAL CASE STUDY. *Journal of Educators Online*, *19*(1). https://doi.org/10.9743/JEO.2022.19.1.3

Al Rawashdeh, A. Z., Mohammed, E. Y., Al Arab, A. R., Alara, M., & Al-Rawashdeh, B.

(2021). Advantages and disadvantages of using e-learning in university education: Analyzing students' perspectives. *Electronic Journal of E-Learning*, *19*(3), 107–117. https://doi.org/10.34190/ejel.19.3.2168

Aldhahi, M. I., Alqahtani, A. S., Baattaiah, B. A., & Al-Mohammed, H. I. (2022). Exploring the relationship between students' learning satisfaction and self-efficacy during the emergency transition to remote learning amid the coronavirus pandemic: A cross-sectional study. *Education and Information Technologies*, *27*(1), 1323–1340. https://doi.org/10.1007/s10639-021-10644-7

Alqudah, N. M., Jammal, H. M., Saleh, O., Khader, Y., Obeidat, N., & Alqudah, J. (2020). Perception and experience of academic Jordanian ophthalmologists with E-Learning for undergraduate course during the COVID-19 pandemic. *Annals of Medicine and Surgery*, *59*, 44–47. https://doi.org/10.1016/j.amsu.2020.09.014

Elshareif, E., & Mohamed, E. A. (2021). The Effects of E-Learning on Students' Motivation to Learn in Higher Education. *Online Learning*, *25*(3), 128–143. https://doi.org/10.24059/olj.v25i3.2336

Fatimah, S., & Mahmudah, U. (2020). How E-Learning Affects Students' Mental Health During Covid-19 Pandemic: An Empirical Study. *DWIJA CENDEKIA: Jurnal Riset Pedagogik*, *4*(1), 114–124. https://doi.org/10.20961/jdc.v4i1.41991

Ghazali, F. Al. (2020). Challenges and Opportunities of Fostering Learner Autonomy and Self-Access Learning During the COVID-19 Pandemic. *Studies in Self-Access Learning Journal*, *11*(3). https://doi.org/10.37237/110302

Greenhow, C., Graham, C. R., & Koehler, M. J. (2022). Foundations of online learning: Challenges and opportunities. *Educational Psychologist*, *57*(3), 131–147. https://doi.org/10.1080/00461520.2022.2090364

Gustiani, S. (2020). STUDENTS'MOTIVATION IN ONLINE LEARNING DURING COVID-19 PANDEMIC ERA: A CASE STUDY. *Holistics*, *12*(2).

Hartnett, M. (2018). Motivation in distance education. In *Handbook of distance education* (pp. 145–157). Routledge. https://doi.org/10.4324/9781315296135-13

Igai, W. K. A., & Yunus, M. M. (2022). A Systematic Review of Perception of E-Learning Users in Formal Education during COVID-19 Pandemic. *Creative Education*, *13*(6), 1981–1998. https://doi.org/10.4236/ce.2022.136123

Jebril, N. (2020). World Health Organization declared a pandemic public health menace: a systematic review of the coronavirus disease 2019 "COVID-19." *Available at SSRN 3566298*. https://doi.org/10.2139/ssrn.3566298

Kamysbayeva, A., Koryakov, A., Garnova, N., Glushkov, S., & Klimenkova, S. (2021). E-learning challenge studying the COVID-19 pandemic. *International Journal of Educational Management*. https://doi.org/10.1108/IJEM-06-2021-0257

Keller, J. M. (2008). First principles of motivation to learn and e-learning. *Distance Education*, *29*(2), 337–338. https://doi.org/10.1080/01587910802154970

Kulikowski, K., Przytuła, S., & Sułkowski, Ł. (2021). The motivation of academics in remote teaching during the Covid-19 pandemic in polish universities—Opening the debate on a new equilibrium in e-learning. *Sustainability*, *13*(5), 2752. https://doi.org/10.3390/su13052752

Layali, K., & Al-Shlowiy, A. (2020). STUDENTS'PERCEPTIONS OF E-LEARNING FOR

ESL/EFL IN SAUDI UNIVERSITIES AT TIME OF CORONAVIRUS: A LITERATURE REVIEW. *Indonesian EFL Journal*, *6*(2), 97–108. https://doi.org/10.25134/ieflj.v6i2.3378

Maatuk, A. M., Elberkawi, E. K., Aljawarneh, S., Rashaideh, H., & Alharbi, H. (2022). The COVID-19 pandemic and E-learning: challenges and opportunities from the perspective of students and instructors. *Journal of Computing in Higher Education*, *34*(1), 21–38. https://doi.org/10.1007/s12528-021-09274-2

Mohtar, M., & Md Yunus, M. (2022). A Systematic Review of Online Learning during COVID 19: Students' Motivation, Task Engagement and Acceptance. *Arab World English Journal (AWEJ) 2nd Special Issue on Covid*, *19*. https://doi.org/10.31235/osf.io/m6sfe

Moran-Suarez, S. (2022). A Review on E-Learning During Covid-19 Pandemic Situation. *Acta Pedagogia Asiana*, *1*(1), 34–45. https://doi.org/10.53623/apga.v1i1.99

Moustakas, L., & Robrade, D. (2022). The Challenges and Realities of E-Learning during COVID-19: The Case of University Sport and Physical Education. *Challenges*, *13*(1), 9. https://doi.org/10.3390/challe13010009

Rahman, M. H. A., Uddin, M. S., & Dey, A. (2021). Investigating the mediating role of online learning motivation in the COVID-19 pandemic situation in Bangladesh. *Journal of Computer Assisted Learning*, *37*(6), 1513–1527. https://doi.org/10.1111/jcal.12535

Rahman, R. M. A., Alsalhi, N. R., Eltahir, M. E., Al-Qatawneh, S. S., & Alzoubi, A. M. A. (2022). Applying Online Learning in Higher Education Institutions During the COVID-19 Pandemic: A Field Study in the United Arab Emirates (UAE). *Information Sciences Letters*, 639–656. https://doi.org/10.18576/isl/110301

Santrock, J. W. (2017). *Educational psychology*. McGraw-Hill Education.

Saxena, C., Baber, H., & Kumar, P. (2021). Examining the moderating effect of perceived benefits of maintaining social distance on e-learning quality during COVID-19 pandemic. *Journal of Educational Technology Systems*, *49*(4), 532–554. https://doi.org/10.1177/0047239520977798

Stecuła, K., & Wolniak, R. (2022). Advantages and Disadvantages of E-Learning Innovations during COVID-19 Pandemic in Higher Education in Poland. *Journal of Open Innovation: Technology, Market, and Complexity*, *8*(3), 159. https://doi.org/10.3390/joitmc8030159

Yeap, C. F., Suhaimi, N., & Nasir, M. K. M. (2021). Issues, challenges, and suggestions for empowering technical vocational education and training education during the COVID-19 Pandemic in Malaysia. *Creative Education*, *12*(8), 1818–1839. https://doi.org/10.4236/ce.2021.128138

Yu, Z. (2022). Sustaining Student Roles, Digital Literacy, Learning Achievements, and Motivation in Online Learning Environments during the COVID-19 Pandemic. *Sustainability*, *14*(8), 4388. https://doi.org/10.3390/su14084388

Zarei, S., & Mohammadi, S. (2021). Challenges of higher education related to e-learning in developing countries during COVID-19 spread: a review of the perspectives of students, instructors, policymakers, and ICT experts. *Environmental Science and Pollution Research*, 1–7. https://doi.org/10.1007/s11356-021-14647-2

Zhang, H., Wang, X., Cui, Y., Zhao, T., Wang, J., & Zuo, C. (2021). Research on the Influencing Factors to College Students' Learning Burnout in Online Learning: Social Support, Learning Pressure and Autonomous Learning Ability. *2021 International Symposium on Educational Technology (ISET)*, 79–83. https://doi.org/10.1109/ISET52350.2021.00026