Cognitive and Psychological Reverberations of Remote Learning on Students at the University of Saida

ⒾNasreddine ARIS[1], ⒾMeryem BABOU SEKKAL[2]

[1] University of Saida, Dr. Moulay Tahar, Algeria

[2] University of Saida, Dr. Moulay Tahar, Algeria

Abstract

Distance learning using Information and Communication Technology has become a necessary option that has replaced the traditional way of learning. Teachers opted for this alternative to complete the lacunas of teaching or the allotted duration of learning when unexpected matters such as the emergence of the pandemic Covid 19 and the closure of universities take place. In other words, teachers have started integrating Information and Communication Technology gadgets in the past but not with the same amount as in today's classes since using them was a choice rather than a necessity. Accordingly, the present study aims to determine the psychological effects of distance learning on Algerian students and the extent to which students have accepted or rejected this new system of learning. The researchers find it necessary to tackle this issue since it has become a part of students' lives. A psychological attitudes questionnaire has been applied to a sample of students of Saida University attempting to answer the set-up questions. Yet, 20 master two students have been selected randomly and the obtained data will be processed, analyzed and interpreted both quantitatively and qualitatively. Although the study has shown that distance learning has proved effective during this period, the great majority of students have shown some negative attitudes as this type of learning has resulted in some undesirable feelings and psychological troubles. The latter are embodied in feelings of insecurity, anxiety, fear, stress and despair which have negatively influenced students' learning performance and psychological well-being.

Keywords: Attitudes, learning, cognitive and psychological reverberations, remote learning, students at the University of Saida

الملخص:

أصبح التعلم عن بعد باستخدام تكنولوجيا المعلومات والاتصالات خيارًا ضروريًا حل محل طريقة التعلم التقليدية. وقد اختار المعلمون هذا البديل من أجل استكمال ثغرات التدريس أو المدة المخصصة للتعلم عند حدوث أمور غير متوقعة مثل ظهور جائحة كوفيد 19 وإغلاق الجامعات. بمعنى آخر، بدأ المعلمون في دمج أدوات تكنولوجيا المعلومات والاتصالات في الماضي ولكن ليس بنفس القدر كما هو الحال في فصول اليوم لأن استخدامها كان اختيارًا وليس ضرورة. وعليه، تهدف الدراسة الحالية إلى تحديد الآثار النفسية للتعلم عن بعد على التلاميذ الجزائريين ومدى قبول الطلاب أو رفضهم لهذا النظام الجديد للتعلم. تم تطبيق استبانة الاتجاهات النفسية على عينة من الطلاب الذين حاولوا الإجابة على أسئلة الإعداد. ومع ذلك، ستتم معالجة البيانات التي تم الحصول عليها وتحليلها وتفسيرها كميًا ونوعيًا. ورغم أن الدراسة أثبتت أن التعلم عن بعد أثبت فعاليته خلال هذه الفترة، إلا أن الغالبية العظمى من الطلاب أبدوا بعض الاتجاهات السلبية حيث أدى هذا النوع من التعلم إلى بعض المشاعر غير المرغوب فيها والمشاكل النفسية. وتتجسد هذه الأخيرة في مشاعر عدم الأمان والقلق والخوف والتوتر واليأس والتي أثرت سلباً على الأداء التعليمي للطلاب وسلامتهم النفسية.

الكلمات المفتاحية: الاتجاهات، التعلم، المشكلات النفسية، التعليم عن بعد، الطلاب.

Emails: [1]arispsychologue@gmail.com, [2]meryembabou@gmail.com

Introduction

Distance learning has been adopted by almost all Algerian universities. It was experienced for the first time in 2020 though some teachers used to work with online platforms before but not with the same amount as the current era. This step has been undertaken as a solution to catch up the lectures and finish the syllabuses to do exams, especially after closing all the institutions. Distance learning has gained an important place throughout the world during the pandemic era and has flourished nowadays as it is utilized by the sector of education to facilitate the process of studies and to keep pace with the times. However, this learning has had various effects on students' attitudes as it affected their psychological side as well. The latter is one of the most vital issues in life in general and learning in particular.

The study aims to determine the psychological directions of psychology students at the University of Saida, Dr. Moulay Tahar, Algeria and recognise the differences in the components of those directions namely; cognitive, affective and behavioral. The paper's significance is reflected through the importance of the variables it studies, which are psychological directions, as it depends on the decision-making process. The issue of distance education is also of great importance on the part of specialists, especially in the last two years, when the Coronavirus has spread throughout the whole world.

According to what has been mentioned above the researcher will try to answer the following research questions:

- What are the students' psychological attitudes towards distance education?
- Which type of psychological barriers have resulted from distance education?

First, students enjoyed staying home and studying without moving and waking up early. Moreover, the majority did not take the matters seriously, as they did not join the organized online sessions. Second, as time passed and the pandemic period lasted more than three years, many troubles have been observed. Indeed, students started to worry about their future and how to manage and solve the resulting issues from online learning. Consequently, the writers may hypothesize that:

- Psychological attitudes of students towards distance education are low among students of psychology at the University of Saida, Dr. Moulay Tahar.
- There are differences between the three components of the trend (cognitive, affective, and behavioral) among students of psychology at the University of Saida, Dr. Moulay Tahar.

Literature Review

Distance Learning

The world has lived in 2020 /2021 an uncommon and difficult period because of the effusion of Covid 19 which has led the world to think of new ways to deal and to live with it. Severe worriment and tension have touched all work categories in addition to schools and universities. The latter has decided to opt for distance learning to manage the application and execution of courses online. Yang et al. (2009) asserted that "Nowadays, all the educational processes and efforts are dependent on effective ICT use. This requires a well structure strategic plan where the educators will be able to achieve the maximum of their potential" (p. 236). "Teachers should carefully select the most effective ICT tool based on the formal

pedagogical principles" according to Bouaricha and Hamzaoui (2021, p. 76). Similarly, Hassaine (2023) added that:

> E-learning in Algerian universities faces several challenges, including the issue of qualified pedagogical frameworks in the field of e-learning and the necessity of training and graduating scientific and professional personnel capable of dealing with the challenges that result from environmental and cognitive hazards effectively and without fear. (p. 566)

Both teachers and learners found several difficulties when E-learning was initiated in Algeria since the majority of teachers did not master the use of ICT tools and needed urgent training to be able to fulfill their online teaching tasks.

Distant learning can take various forms and be supported by different systems and applications. Distance learning, also known by various names such as distance education, e-learning, mobile learning, or online learning, is a form of education where there is physical separation of teachers from students during the instruction and learning process. It is also an instructional practice that effectively utilizes a wide range of tools and technology to enrich the student learning experience (Klein, 2016). Distance learning joins two types of learning i.e., active learning as a habitual and pervasive one and E-learning as a new way which necessitates the employment of video communication services such as Google Meet, Zoom or Jitsi Meet. However, this new strategy has had numerous drawbacks and negative psychological outcomes which affect seriously students' quality of life as it provokes anxiety, fear and stress. Guragain (2016) argued that E-learning may cause:

- Insufficient motivation because there is no one to supervise them. Learners who suffer from poor communication skills might not fulfill their aims.
- The complication of technology usage may stand as a hindrance to learning…some students may need some time to learn how to use electronic devices before they go ahead on learning from a particular platform.
- Isolation from others for some students (As cited in Santally et al., 2023, p. 6)

Accordingly, students who lack teachers's supervision and guidance will neglect their studies and be occupied with other applications that are available on their computers and mobiles. Moreover, being confined to disapproving aftereffects that required rapid intervention to overcome them.

Psychological Reverberations

Distant learning has been implemented for the sake of creating favorable atmosphere for university students and to facilitate access to their lectures. However, this sudden worldwide connectivity through the use of ICT tools has resulted in various psychological impacts that have affected the mental and psyche of the learners. The latter who have been used to meeting their peers and interacting with them have found themselves in front of a new and unpleasant situation which resulted in many feelings such as: feeling stressed, bored and afraid of the uncertain future of learning in general and their lives in particular. This pandemic carries not only the risk of death from a viral infection but also psychological stress for people throughout the world (Xiao, 2020). Yet, students also have been afraid of online courses and how to deal with them.

This has been a major problem which increased the amount of stress. Sharp and Theiler (2018) conveyed that public health emergencies can have many psychological effects on students, which can be expressed in the form of anxiety, fear, and anxiety. Additionally, boredom was also caused by the increasing distance between people, as a result of the policy of physical distancing and staying at home. Anxiety then arises and gets worse because there is no interpersonal communication (Galea et al., 2020). It is worth mentioning that interaction is a purely human aspect where people can exchange ideas, emotions and points of view.

The Future of Distance Learning in Algerian Universities

Similar to the worldwide universities, Algerian ones were struggling with how to manage the new situation of the pandemic. Some of them adopted blended learning (case of Saida University (with seven weeks face to face) and others only E-learning. Almost all the Algerian universities opted for Moodle electronic systems to implement online learning to link teachers and students. This new way of teaching/ learning affected regular studies since the majority of the Algerian teachers did not master the ICT tools and students found difficulties in understanding online lectures. Bossoufi and Motahhi (2022) claimed that "the perceptions of Algerian students regarding the abrupt transition to online learning amid the Covid-19 pandemic is negative" (p. 372).

Yet, the Ministry of Higher Education of Algeria is insisting on the implementation of online learning even after the end of the pandemic era. Numerous instructions have started to be implemented within the Algerian universities including the non-obligatory of students' attendance and the focus on teaching them or at least putting the lecture on online platforms or doing both of them at the same time. It is important to mention the chief positive points of distance learning namely the facilitation of learning at any time that suits both the instructor and the learners and to come back to the lecture whenever it is needed. However, it is also necessary to consider the main disadvantages of this type of education especially the issue of credibility of the degrees attained. Aggarwal (2007) contended that:

> One of the most serious of these problems is a lack of attention to educational quality control issues […] This problem is so pervasive that a mushrooming system of shoddy, online diploma mills has sprung up, complete with individual courses, complete certification programs in various fields, and bachelor's, master's, and even doctoral degrees available totally online. (p. 2)

University learners are deemed to be the elite of a given society and forming and evaluating them through an online channel may have unsatisfactory outcomes, especially at the level of scientific streams where intricate and accurate matters should be known and mastered to act as a successful citizen, doctor, teacher and so on.

Methodology

The researchers selected the scale of psychological attitudes and the obtained data was interpreted both qualitatively and quantitatively.

Participants

The study was conducted in 2023 with 20 master two students (13 females and 7 males) and their ages varied from 22 to 35 years old. The sample population was selected randomly at the University of Saida, Dr. Moulay Tahar.

Research Instruments

In the current study, we relied on the scale of psychological attitudes towards distance education (Al-Juhani & Obeidollah, 2021), which was built based on previous studies on the subject. The scale included three components:

- The cognitive component and the affective component: both contain seven items
- The third component is the behavioral component which contains six items.

Due to the nature of the subject as well as the objectives of the current study, we resorted to the descriptive-analytical approach to deal with the characteristics of the phenomenon, the extent of its spread and how it spreads among students, then analyzing and discussing it and providing logical explanations for it. This combined approach has been selected to work on two different levels namely achieving a descriptive study based on the target population which is represented by 20 students and to analyze their answers later on. Taylor and Francis (2009) asserted that in the descriptive-analytical approach, causality is considered to work at two different levels: at the abstract level, certain causal principles are assumed… at the descriptive levels are considered (p. 27).

Findings

First hypothesis: there is a low level of students' psychological attitudes towards distance education.

To verify this hypothesis, the arithmetic average and standard deviations of the scale items have been calculated. The table below shows the following results:

Table 1. *The arithmetic averages and standard deviations of the estimation degrees of the sample members for each item on the scale*

Number	Suggestions	Average	Standard deviation
1	I think distance education is suitable for me.	2.08	1.197
2	I expect that I will get high grades in the courses by studying via distance education.	2.28	1.166
3	I understand the lessons explained on the platform easily.	2.17	1.060
4	Platform education allows me to pay attention and focus on what is explained in the lessons.	1.90	0.951
5	I think that distance education is suitable for all disciplines.	1.67	1.020
6	Distance education provides a variety of teaching possibilities.	2.42	1.154
7	I see that distance education allows students to return to lessons at any time	3.42	1.225
8	I enjoy distance learning	2.10	1.245
9	I feel comfortable during the remote lecture.	2.25	1.336
10	I hope that distance learning will continue until I graduate from university.	2.25	1.590

The table that follows characterizes the results of psychological attitudes suggested to the informants.

Table 2. *The arithmetic averages and standard deviations of other psychological attitudes*

Number	Suggestions	Average	Standard deviation
1	I find it fun to do homework in distance education.	2.57	1.370
2	Distance education is exciting.	1.90	1.231
3	I find time flies quickly in remote lectures.	2.72	1.427
4	Distance education is more interesting than regular education.	1.70	0.926
5	Complete all the homework required in distance education.	3.18	1.186
6	I use the distance learning platform of my university with ease.	2.78	1.391
7	I am interested in attending lectures remotely.	2.42	1.225
8	Every time I come back to the platform and check out any new lectures.	2.78	1.403
9	Distance education encourages me to share knowledge with the teachers without shame.	2.67	1.398
10	Distance education has improved my skills in using technology.	2.43	1.442

To verify the hypothesis, the arithmetic averages and standard deviations of the estimation scores of the sample members were used for each component of the psychological attitudes scale towards distance education, arranged in descending order, and the table below shows the results.

Table 3. *Arithmetic averages and standard deviations of the degrees of estimation of the sample members for each component of the scale, arranged in descending order*

Dimensions	Order	Average	Standard Deviation	Level
Behavioural Dimension	1	16.27	5.554	Low
Cognitive Dimension	2	15.93	5.374	Low
Emotional Dimension	3	15.48	6.776	Low
Total		47.68	16.142	Low

The above table shows that the levels of student attitudes are very low on the three components, and therefore students have negative attitudes towards distance education. This can be attributed to the fact that distance education was applied at the Algerian University to all students suddenly after the outbreak of the COVID-19 virus to make up for the sudden delay

caused by the pandemic. For the students, all this was inevitable and imposed on them, so that they did not take even a simple training to use the platforms designated for distance education, and even that many of them did not even know how to use the computer or the basic principles of it. Consequently, the decision to learn distantly has resulted in negative attitudes towards distance education since they have not accepted this type of education.

The second hypothesis: there are statistically significant differences between the components of the trend (cognitive - emotional - behavioral) on the psychological trends scale.

　　　To verify the validity of this hypothesis, a single-sample t-test was used, to compare the sample population with the theoretical components' average of the scale of psychological attitudes towards distance education, as well as the total score of the scale.

Table 3. *Cognitive/emotional and behavioral trends scale*

Dimension	Theoretical Average	Average	Standard Deviation	Degrees of Freedom	value of "t"	Indication Level
Cognitive Dimension	21	15.933	5.373	59	22.967	0.000
Emotional Dimension	21	15.483	6.776	59	17.700	0.000
Behavioral Dimension	18	16.266	5.553	59	22.688	0.000
Total	60	47.68	16.142	59	22.882	0.000

It is clear from Table Three that there is a statistically significant difference at the level of significance (0.01) between the averages of the samples and the theoretical average for the cognitive dimension, the emotional dimension, the behavioral dimension, and the total sum of the psychological attitudes scale towards distance education.

Discussion

　　　The researchers found that the students show a small interest in distance learning and prefer the traditional way of learning. This finding may answer the first research question "What are the students' psychological attitudes toward distance education?" The researchers also found that there are several negative psychological barriers which result from remote learning. This finding may answer the second research question "Which type of psychological barriers have resulted from distance education?

　　　The researcher hypothesized that there is a low level of students' psychological attitudes towards distance education and that there are important differences between the three components or directions. This indicates that there is a reciprocal effect of the cognitive, emotional and behavioral components. Therefore, any change in the cognitive aspect affects feelings and in turn, causes a behavioural change, and this mutual tension is also due to the period during which students have dealt with distance education, which is two years, that is; since it was imposed due to the coronavirus pandemic. Thus, the hypotheses were confirmed.

Thus, according to the above findings, the students show small interest in distance learning and this is due to its negative outcomes at the level of the cognitive and psychological side including anxiety which arises and gets worse because there is no interpersonal communication (Galea, et al., 2020).

To sum up, if a student does not feel well, he will not be apt to learn and think adequately. Several research works have shown that learning using funny stories, visual videos and jokes may lead students to feel comfortable and relaxed. Yet, this feeling of complacency itself attracts students in one way or another and thus makes them learn effortlessly.

Recommendations

The paper at hand discusses some important issues that need to be approached to better the learning/teaching process even during unexpected circumstances. However, other important issues need to be investigated. Thus, the researcher suggested the following recommendations:

- Conducting multiple studies on psychological trends with larger samples and students from different specializations. Yet, the results of this study should be treated carefully as the integrated population was more willing to make changes as far as this new way of learning is concerned i.e. they may change their mind and their attitudes will be altered according to the present situation.
- Providing intensive training courses and seminars for students on the use of the university's distance learning platforms.
- The researcher should look for new methods and strategies to improve the teaching/ learning process and bring up recent and different programs to apply and test to achieve students' needs.
- The study at hand can be regarded as a starting point to refresh remote learning as it paves the way for the researcher to investigate also the aftermath of online learning throughout the whole Algerian universities. The latter is focusing on intensifying digital learning by imposing strict instructions on teachers especially.
- Future research should take into account novice ways to overcome all the potential problems that may be faced throughout the learning and teaching process. It should come up with a deeper understanding and clarification for the sake of applying the practices effortlessly and implementing remote learning.

Conclusion

The research aimed to highlight the psychological reverberations of distance learning on Algerian students in addition to their attitudes vis a vis the new system of learning. The findings have shown that the psychological impact of students on online learning during the COVID-19 pandemic deserves to be studied and considered as a primordial problem to find or at least suggest solutions. The study at hand has demonstrated that the cognitive, emotional and behavioral components work together and affect each other. In other terms, if the student's cognitive side is low, the rest i.e., behaviour and emotion will be estimated lowly and the study has shown this. The study concluded that the pervasive psychological consequences of distance learning, particularly, when the students feel lonely and isolated are stress, fear and lack of concentration. Henceforth, policymakers should take into account all these components in addition to the recommendations suggested above to overcome this kind of problem and

facilitate the matters for students. The research paper at hand though it has answered the above research questions that regard all the engendered issues and their impact on students' learning, it is can be considered as a new starting point to look for the future of online learning as an inevitable step to keep up with times. Henceforth, will online learning replace face-to-face learning? Will it prove its efficacy in the coming days? Will teachers adapt their ancient teaching methods to the new ones easily? And more important will students' rate of learning be satisfactory? All the aforementioned questions will be studied in another research paper as a continuation of this one.

About the Authors

Nasreddine ARIS, a teacher at the University of Saida, Dr. Moulay Tahar. His field of research includes topics related to psychology. Orcid: https://orcid.org/0000-0001-6945-6530

Meryem SEKKAL BABOU, a teacher at the University of Saida, Dr. Moulay Tahar. Her field of research includes sociolinguistics, pragmatics, and discourse analysis. Orcid: https://orcid.org/0000-0002-3581-8166

Statement of Absence of Conflict of Interest:

The authors mentioned above hereby solemnly declare that they are not and shall not be in any situation that could give rise to a conflict of interest in what concerns the findings and recommendations contained in this academic article.

AI Statement:

Authors do not use AI tools to write or refine the text.

References

Aggarwal, D. D. (2007). *Future of Distance Education.* Sarup and Sons, New Delhi.

Bossoufi, B., & Motahhir, S. (2022). *Digital Technologies and Applications Proceedings of ICDTA'22, Fez, Morocco*, 1. Springer International Publishing. https://www.google.dz/books/edition/Digital_Technologies_and_Applications/t6ZuEA AAQBAJ?hl=fr&gbpv=0

Bouaricha, A. A., & Hamzaoui, H. (2021). Algerian Teachers' Attitudes towards the Use of Information Communication Technologies in English for Academic Purposes Teaching. *الأكاديمية لدراسات الاجتماعية و الإنسانية, 13*(6), 75-83. https://www.asjp.cerist.dz/en/article/161015

Galea, S., Merchant, R. M., & Lurie, N. (2020). *The Mental Health Consequences of COVID-19 and Physical Distancing: The Need for Prevention and Early Intervention.* JAMA Internal Medicine.

Hagemann, H., & Scazzieri, R. (2009). *Capital, Time and Transitional Dynamics.* Routledge Taylor & Francis.

Hassain, A. (2023). The reality of educational curricula in Algerian universities and the experience of learning after the COVID-19 pandemic. *Mokarabet Falsafia Review, 10*(1), 554-569. file:///C:/Users/N'TIC/Downloads/the-reality-of-educational-curricula-in-algerian-universities-and-the-experience-of-learning-after-the-covid-19-pandemic.pdf

Hussein al-Juhani, A., & Obaidullah, A. (2021). The effect of self-learning among graduate students on the effectiveness of distance education in light of the Corona pandemic (Taif University as a model). *Journal of the College of Education (Assiut), 37*(3), 131-156.

Klein A. (2016). *The Every Student Succeeds Act: An ESSA Overview.* Available at: http://www.edweek.org/ew/issues/every-student-succeeds-act/

Santally, M. I., Rajabalee, Y., & Rajputh, R. (2023). *Implementing Rapid E-Learning Through Interactive Materials Development.* IGI Global Publisher of timely Knowledge.

Sharp, J., & Theiler, S. (2018). A review of psychological distress among university students: Pervasiveness, implications and potential points of intervention. *International Journal for the Advancement of Counselling, 40*(3), 193–212. https://doi.org/10.1007/s10447-018-9321-7

Simonson G. (2016). *Distance Learning Education.* Britannica: Encyclopedia Britannica, Inc.

Xiao, C. (2020). *A Novel Approach of Consultation on 2019 Novel Coronavirus (COVID-19) -* Related Psychological and Mental Problems: Structured Letter Therapy. *Psychiatry Investigation, 17*(2), 175-176. doi: 10.30773/pi.2020.0047.

Yang, H., Yuen, H., & Chi-Yin, S. (2010). *Handbook of Research on Practices and Outcomes in E-Learning: Issues and Trends. Information Science Reference*. Hershey. New York