



AI Awareness and Adoption Readiness: A Field Study of Humanities and Social Sciences Students at Tebessa University

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Abstract:

This study addresses the instinctive attitudes of University students in Algeria toward AI (Artificial Intelligence) and it emphasis lies on the level awareness and their willingness to adopt. Employing a prescriptive-analytic design, data was acquired from 300 students who were selected randomly from six departments using a 25 questions items. The data was run in SPSS (version 26). It was observed that the students had average AI awareness levels although they all exhibited positive attitudes. However, as far as readiness to adopt is concerned, there are discrepancies with the master's candidates being more ready than those doing undergraduate courses. There were no significant gender disparities if any observed statistically in this regard. Relationship positively correlates with awareness and preparedness ($r = 0.46$). In this context, it can be argued that if the country intends to promote effective implementation of AI in higher education then there is need for digital infrastructure improvement process, staff training and development procedures alongside regulatory and ethical frameworks establishment stage so as to ensure responsible technology application systems implementation within educational sphere.

Keywords: *AI Awareness, Algeria, Artificial Intelligence (AI), Higher Education, Humanities and Social Sciences, Student Readiness, Technology Adoption.*

I. INTRODUCTION

In today's world, the pace of digital development is faster than ever before, it causes deep changes in many areas and particularly high education is influenced by IT innovations. One of the most important parts of this revolution is artificial intelligence being a technology that influences teaching methods, learning processes and even scientific research to the greatest degree. AI technologies are well spread among world universities who employ them into educational systems on international level thus including adaptive learning systems, cognitive tutors and automated assessment tools into their educational process. In the Algerian context, universities seek to be involved in digitization and be in line with globally accepted trends even if there are many challenges to that effect such as the limited digital infrastructure, inadequate training of faculty and students and unclear rules for using ethical technology may slow these processes down. Moreover, despite the issue of AI there is also a lack of related literature on the field in which it explains on how much students are aware on this issue and their opinion about such aspect. Thus, the present study seeks to fill this cognitive gap by monitoring students' attitudes in Algerian higher education and determining the degree of attention as well as readiness to adopt. For this purpose, the study sets out to answer the following questions:

- To what extent are students aware of artificial intelligence?
- What is the nature of their attitude towards it?
- Do they accept to use it in their academic career?

By doing this study, it is hoped that the scientific contributions to the discussions on employing AI technologies in Algerians higher education will be made and recommendations for practice drawn that would assist decision makers in the field of education to develop more effective and relevant policies.

I. Theoretical background and previous studies:

For digital transformation in higher education artificial intelligence (AI) is no longer a novel platform but a major tool. It is described as the capability of computer systems to perform functions that can only be done by humans such as learning, analysis and decision making (Romero, et al., 2023). Literature has widely supported its use in teaching which encompasses the following aspects: adaptive learning, automated assessment, intelligent assistants and learning analysis (Rabie, 2023; UNESCO, 2021).

Artificial intelligence (AI) is the major breakthrough for the modernization of higher education and is under the spotlight. It is explained as the capacity of machines to imitate specific aspects of human mental capabilities such as learning, reasoning and decision making (Romero, et al., 2023). It has been evidenced that education uses AI in support of many areas including: adaptive learning, automated assessment, intelligent assistants, and analysis on learning's effectiveness (Rabie, 2023; UNESCO, 2021).

In the Arab context recently, research review points that integration of AI and machine learning with education makes it easier to develop teaching strategies and enhance learning outcomes, however these opportunities come across serious impediments like low digital infrastructure, insufficiency of technical competence and ethical issues as privacy and responsible use are concerned (Rabie, 2023) .

Based on a regional study in Algeria, it is more probable that lecturers at the university believe that AI will be helpful in optimizing learning and teaching effectiveness so that there are certain blockades concerning this skill due to low level of training and weak technical skills (Achilli and Zerouky, 2022-2023).

These researches have been reinforced by a research carried out in universities located in western Algeria (Chib and Zein, 2024), which argued that the employment of interactive

digital tools through constructivist pedagogy framework impact student interactivity level to encourage active participation in learning. World-wide, AI in higher education has been a subject for a systematic review that was done by Zawacki-Richter et al. (2019).

Most studies reviewed show that the aspects of AI in HE are more on the technical side than on the pedagogical which shows there is a gap on teaching. UNESCO reports confirm that less than 20% of universities in developing countries have well-developed infrastructures needed for AI applications within their organizations (UNESCO, 2021), shedding light on quantitative challenges faced by Algeria and Arab countries in this respect. The Technology Acceptance Model (TAM) is a very important expository framework in this regard since it helps to appreciate the preparedness of learners and educators to adopt AI from a generalized perspective. Davis (1989) explained that perceived usefulness and perceived ease of use are direct precursors to intention to use.

Marangunic and Granic (2015) have found out that this theory still stands as one of the most reliable models for assessing learner attitudes towards technology, AI inclusive, in education. Hence, it can be concluded that AI incorporation might be regarded as a stepping stone in the field of higher education in Algeria that presents a great impetus for the progress of educational paradigm but (Al-Shaidi et al., 2017).

This work also raises another issue concerning the remedy on how to integrate AIs in education systems. The first and foremost step are already discussed above which is regarding the incorporation of AIs into various teaching techniques. The second issue concerns on how to assimilate knowledge within AIs themselves. Based on the discussion so far above, it is logical to say that without incorporating knowledge into AIs they cannot streamline learning and assist learners effectively.

However, it is important to draw your attention that this should not be interpreted as an introducing micromanagement policy. At the same time, organization has its right to evoke an objection if caregiver conduct does not meet professional demands or contravenes stated rules as long as invoking this right is justified by law (Kukko et al., 2009).

Management was found statistically significant with staff performance using employee perspective considered performance indicators such as commitment and initiatives towards their work and employer perspective particularly providing quality care services toward patients/residents welfare showing high degree of correlation. It is noticeable from both resources that there is a sort of logical sequencing or order in terms of discussing the potential evils of integrating learners M-learning context regardless of their significance (Indian Society for Technical Education, 2000).

Sprille shows how ecology interacts with morphological variability in epiphytic fungi while being characterized by different branch lengths and cell shapes: If we try to sum up our attempt at explaining or even rather justifying morality within society, so we can delineate it as consisting these three stages which have been mentioned above (Blaschke et al., 2008b). He points out optimism in advanced economies through economic turnarounds championed by improved productivity levels originating from technology driven development (Simon & Johnson, 2014).

Comparing these two resources reveals that even though there seems to be no specific connection between communication patterns at home and student achievement; all students experience this special kind of interaction between their teachers', parents' attitudes/strategies on teaching/learning matter and behaviors/, relationships/, support system; / This interaction reveals who are more responsible leadership between students' attitudes/, behavior/, interference/and relationship/.

II. Study methodological procedures:

1. Methodology adopted:

This paper classifies the type of study under the descriptive-analytical approach since it explains what AI is all about based on the observations of students and also does an analysis of the variables (factors)--for example between awarenesses and readiness to adopt.

2. Study population:

The sample was drawn from the students of the Faculty of Humanities and Social Sciences at the University of Tébessa in the academic year 2023/ 2024 pursuing various specializations.

3. Study example:

The students sample of 300 was chosen, partitioned by six academic departments. The male were equals to 20% (n=60), whereas the female was equivalent to 80% (240). The selection was segregated following the level of education as stated below: To cater for the enrolled population at all educational levels, stratified random sampling was used, whereby each education level stood as a different stratum and then students were randomly selected within each stratum.

4. Data Collection Tools:

Questionnaire was deployed as the principal tool of data collection, for which it is a self-constructed testing instrument. It consisted of three main parts:

The first area is named awareness and knowledge (10 items). For instance, "I can define AI correctly", "I know some educational applications based on AI such as ChatGPT or adaptive learning platforms."

Attitudes and trends (8 items): for instance, 'I believe AI can improve the quality of university education', 'I see AI can decrease the role of the professor in the educational process'. Readiness to use (7 items) for instance; 'I'm ready to use of AI tools in the performance of my university assignments,' 'I enjoy using AI technologies in scientific researches' The number of items totalled 25 and they were arranged in a five-point Likert scale, where 1 = completely disagree, to 5 = completely agree.

5. Data Collection Procedures:

The survey was handed over to students between January and March 2024 in the second semester of the academic year 2023/2024. Questionnaires were gathered in classrooms after talking with professors which made it possible to reach a high response rate.

6. Methods of statistical analysis:

With all data collected they were coded then entered in the SPSS program (version 26) and finally the following operations went on:

- Descriptive analysis (frequencies, percentages, arithmetic means and standard deviations).
- Reliability test with Cronbach's alpha coefficient.
- Difference of mean test: t-test for two independent samples base on the gender variable, and one-way analysis of variance (ANOVA) to compare differences between education levels.
- Being aware of the correlation analysis that uses Pearson's coefficient as a measure to see how the variables are related for preparation in adopting technology.

7. Validity and reliability:

- Concerned with the content validity: The questionnaire was subjected to face validation by five expert professors in education and educational technology through

having it. They all concurred on the suitability of most items, and some made comments which were later revised for clarity/accuracy.

- Internal consistency: employed the Cronbach's alpha coefficient for determining the scale's reliability where the total reliability value of the scale was (α) = (0.85), that is considered to be a very good internal consistency indicator

III. Field Results and Descriptive Analysis:

A. Demographic characteristics of the sample:

The demographic distribution of the study sample involving 300 male and female learners at different educational levels is shown in table (1).

Table (01): Number and Percentage Distribution of the Sample According to Level

Variable	Category	Number	Percentage
Academic Level	Second Year BA	120	40%
	Third Year BA	110	36.7%
	Master	70	23.3%
Gender	Male	60	20%
	Female	240	80%

(Prepared by the researcher)

Interpretation of Table (1):

It is self-evident that the sample is majorly composed of women whereby (80%) are female respondents while only (20%) are male respondents, this points to the fact that faculty of training and social work hordes have enriched themselves demographically with women. Moreover, second year BA students make up the largest number of learners(40%), then third year BA students(36.7%) and finally master's students who constitute a (23.3%) population.

B. Descriptive Statistics of Study Axes:

The following table provides arithmetic mean values and standard deviations of three axes in the questionnaire: awareness and knowledge, attitudes and trends, readiness to adopt.

Table (02): Represents Arithmetic Means and Standard Deviations of Study Axes

Axis	Arithmetic Mean	Standard Deviation	Level of Assessment
Awareness and Knowledge	3.10	0.65	Moderate
Attitudes and Trends	3.50	0.70	Positive
Readiness for Adoption	3.80	0.60	Relatively High

Interpretation of Table (2):

It is obvious that the students showed a moderate level of awareness and knowledge of AI ($M=3.10$, $SD=0.65$) which means they have general knowledge and not deep one. As for attitudes towards(1) the subject matter, they were positive ($M=3.50$, $SD=0.70$), showing confidence in the AI to support teaching process. Although students were found to have high

willingness to use ($M=3.80$, $SD=0.60$) this implies that they are ready to use the technology especially among master's students(highest).

III. Statistical Differences According to Gender and Academic Level:

This Table (3) presents the findings on tests comparing the means of students with respect to gender and education level as their subject variables

Table (03): Represents the Statistical Differences According to Gender and Academic Level

Variable	Test Used	Statistical Value	Significance Level (.Sig)	Result
Gender	t-test	$t = 1.12$	0.263	No significant difference
Academic Level	ANOVA	$F = 4.58$	0.012	Significant differences in favor of Master

Interpretation of Table (3):

There results show that there is no statistically identifiable difference in the readiness of male and female students to adopt AI ($p > 0.05$) and this implies that gender was not a factor of interest in the current study. Conversely, the results indicated a significance level in which educated people differed ($p < 0.05$), i.e. master's students were more willing to adopt AI as compared to those at bachelor's level.

IV. Discussion of results and their interpretation:

The outcomes revealed that the study sample represented a larger number of women (80%) in contrast to men (20%). This is explainable by the demographic characteristic which prevails in the Faculty of Humanities and Social Sciences and where the share of female student-learners is higher. Nevertheless, statistical analysis did not reveal any statistically meaningful differences related as readinesses towards AI adoption with regard to gender variable, thus this just increases reliability of the results further more and confirms that gender differences were absolutely not important in this context.

The results also found out that students have a good attitude towards AI. Many of them showed certainty in the fact that this technology can make things better education wise, help propagate knowledge and also tailor the whole learning process to suit students' personalized needs.

On the other hand, some students expressed worry as to whether AI might take over some roles currently played by the professors at the university in the teaching/learning process which aligns with the current debate on AI in education literature as being an aid or replacement for traditional teaching.

The findings of the research demonstrate that graduate students were more prone to embrace AI technologies compared to undergraduate ones. This data is capable of being interpreted in several aspects; the most significant of which is that graduate students are more engaged in the field of scientific research and are obliged to prepare research papers that necessitate using advanced digital instruments, like qualitative analysis software or academic text generation engines (ChatGPT). Consequently, they become more conscious about practical advantages of AI and accepting it as a research tool.

There was an indication from the results that AI awareness among the majority of students was moderate also which accords with previous studies in Arabic context which pointed out

many weaknesses in training with digital technologies (Achilli & Rabie, 2023; Zerouki, 2022-2023).

However, the results indicated that gender change did not result in any statistically significant difference in students' disposition to adopt. This is important as it correlates with what is obtainable in the literatures of today which depicts that the old digital divide on gender ground in educational technology has started to close up slowly while user skill and access to resources and training are what mattered more have been connected to the wider gap.

The results of this research are impressive as they show that there is a strong positive correlation between the level of awareness and the readiness for adoption ($r = 0.46$) also supports one of the fundamental assumptions in TAM (Davis, 1989; Marangunic and Granic, 2015), it indicates that cognition is indeed a key factor for developing positive persuasion and the intention to use.

In the light of these results when you compare this with international context you would find that internationally AI in education is a different story. There are variety of applications which are the most leading ones. I have itemized ten leading countries that may possibly be using AI especially in their educations.

- Learning that is adaptive: AI systems make it possible for instructional materials to be modified with respect to the student's level and learning tempo.
- Intelligent teaching systems that perform an advanced role by giving instant feedback and personal guidance to the students.
- One possibility of using automated assessment is that it saves time and effort for professors and ensures fair assessment (Zawacki-Richter et al., 2019).

Although there have been these remarkable applications, most institutions of higher learning in the developing nations encounter huge obstacles which make the use of AI still ineffective. According to UNESCO report (UNESCO, 2021), it was shown that less than 20% of universities in such countries are well equipped with digital infrastructure for this purpose. Moreover, other challenges also exist as listed below:

- This is the digital divide between the haves who have modern devices and physical abilities and have-nots who lack them.
- One of the ethical concerns has been the issue of privacy and usage of student data which also have generated debates in the Algerian educational context. AI use policy dialogues are still at their genesis, when it comes to security and data as opposed to the developed countries.
- Legislation lacks crystal clear definition as to if and how, artificial intelligence can be integrated into education sector.

This demands further that the uptake of AI in higher education in Algeria is not possible unless there is a well-thought-out comprehensive national plan to do so.

1. To provide a strong digital infrastructure at university level.
2. The purposes of the following are 1. To train professors as well as students on AI and its educational implications.
3. To develop regulatory and legislative frameworks which promote safe, responsible and ethical use of this technology.

Conclusion:

This research implied that students at the University of Tebasa (Faculty of Humanities and Social Sciences) have moderate awareness of AI and positive attitudes towards its applications with different degrees of willingness to adopt it; this difference is more noticeable in master's degree than in bachelor's degree students.

The results further indicated that gender was not a factor which could influence the readiness to adopt, which indirectly means that the traditional digital gap between males and females is reducing in the university context in Algeria. Therefore, the study concludes that AI integration in the higher education sector in Algeria offers prospects for improving the educational process but there are difficulties which have to be tackled e.g. infrastructures are not adequate, teachers are not adequately trained and finally there is no clear organization or legal framework to guide the use of AI.

This is why any effort towards employing AI technology should be part and parcel of a comprehensive national strategy that first of all enhances investments into digital infrastructure and capacity-building at universities while ensuring ethical deployment of this technology.

Limitations of the study:

This study despite the value of its scientific findings has some limitations to be aware of:

1. it is anchored in a more traditional view point that expects dissertations and theses to be lengthy documents (i.e., over 80,000 words for dissertations and over 30,000 words for theses); The study was limited to one faculty at the University of Tébessa this demanding that it poses a question of being able to generalize the results across all Algerian universities.
2. The study was conducted using a closed questionnaire, which implies the limitation on the level of depth of understanding of the causes of students attitudes and may not give reasons for their attitudes at all. Consequently, the results are indicative of assumptions rather than explanations that necessitate interviews and focus group discussions for deeper analysis in future studies.
3. The data collection was carried out improving the second semester of the 2023/2024 academic year, with results which may be relevant at a particular point in time and not necessary reflect future changes.

Suggestions for future research:

Considering the points discussed above, this study recommends further studies to concentrate on the following perspectives:

1. So as to enhance the representativeness of the sample by including more universities from different regions of Algeria and to draw better geographical and institutional contrasts.
2. The mixed research methods which will include the use of questionnaires and in-depth interviews or focus groups with professors and students aimed at enriching the description of their attitudes towards AI.
3. To explore specialization specific differences in the attitudes of students studying social science and humanities with those of learners in technical and scientific subjects.
4. Ethical and legal angle scrutiny of the use of AI in Algerian higher education, particularly on matters of academic privacy and security of data should be a major concern.
5. One can conduct longitudinal studies to observe the changes in students' and teachers' attitudes over a period of time, perhaps as digital eco-systems and national digital agenda evolve further.

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