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Effectiveness of Online Learning Among Graduate Students: Comparison Between Cultures

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Abstract: The research aimed to examine students' attitudes towards learning and teaching processes in an online course, investigating whether there was a difference between Jewish and Arab students' attitudes towards this course. The study combined mixed methods. Data were drawn from a questionnaire (including mostly closed-ended questions) completed by 195 graduate students and eight semi- structured interviews. Additionally, the students' grades for their course assignments were analyzed. Findings indicated that all course participants perceived the teaching and learning processes positively, but Jewish students held stronger positive attitudes concerning the learning processes' effectiveness than did Arab students. Jewish course participants' achievements were higher than those of Arab participants. The variable `sector` had a moderating effect on perceptions of the course structure's clarity and success in the course, strong clarity led to Arab students' success on the course but not for Jewish students. Arab students shared their difficulty adapting to a learning style necessitating autonomous learning processes. These findings are explained by Arab society's unique cultural dimensions, characterised by high-power distance and strong avoidance of uncertainty. The findings can inform designers of multicultural online courses that optimal teaching practices necessitate culture sensitivity, and this constitutes an issue for future studies.

Keywords: *Attitudes towards online learning, cultural dimensions, Jewish and Arab students, online learning, student achievements.*

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Introduction

The technological revolution prompted by the introduction of the Internet in all life domains since the 1990s, has also brought a revolution in teaching and learning. Online learning has become one of the fastest growing trends in technology-assisted education (Bates, 2019). In recent decades, higher education institutions have determined that the provision of smooth transition to online courses is an increasingly important management task. One of the factors that may influence this transition is the students' attitude towards online courses. Understanding their attitudes and perceptions will help the higher education institutions to develop and apply appropriate models of online courses to meet the student's needs (Peytcheva-Forsyth et al., 2018). According to other studies, students' attitudes towards online courses influence their satisfaction and success in online learning (Rhema & Miliszewska, 2014; Zhang & Bhattacharyya, 2008). These courses are influenced by the constructivist approach to education (Reid-Martinez & Grooms, 2018) and enable different types of teaching that involve the use of asynchronous and synchronous tools (Sukiman et al., 2022).

Many studies have explored factors that promote or hinder success in online learning (e.g. Bolliger & Halupa, 2018; Shelton et al., 2017) or investigated critical factors influencing learner attitudes and satisfaction in an online learning environment (e.g. educator presence in online settings, interactions between students, teachers and content)(Nortvig et al., 2018; Weidlich & Bastiaens, 2018), course structure (Eichelberger & Ngo, 2018; Eom & Ashill, 2016; Gray & DiLoreto, 2016), clarity of design (Hung et al., 2014; J. Wang & Antonenko, 2017), Internet self-efficacy (Chu & Chu, 2010; Kuo et al., 2014), instructor knowledge and facilitation, and instructor presence (Gray & DiLoreto, 2016). Age may also influence the students` attitudes and satisfaction (Barczyk et al., 2017). Of these variables, this study explored college graduate students` attitudes concerning the clarity of the course structure, techno-pedagogic aspects, effectiveness of the learning process, communication with the lecturer, assignments, Internet self- efficacy, satisfaction and age.

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Another interesting development that has affected online teaching and learning is reflected in research dealing with cultural aspects of teaching and learning processes in general (Hofstede, 2011) and especially in online learning (Bolliger & Halupa, 2018; Ferreira, 2016; Jung & Gunawardena, 2015). These studies have examined the influence of cultural (national, gender, traditional etc.) values as they affect learning and teaching attitudes and satisfaction concerning processes in the online space.

However, the influence of culture on learning has not yet been studied in the context of Jewish and Arab students graduate student's attitudes and satisfaction concerning online learning in higher education, studying together in an online course. Thus, the current research adds to the literature on online learning and enhances existing knowledge on culture-sensitive online learning.

Based on Hofstede's (2001) model of cultural dimensions (i.e., individualism vs. collectivism; masculinity vs. femininity; uncertainty/avoidance; long term vs. short term; orientation and power distance), the current study will compare the attitudes of Arab and Jewish students in higher education in Israel. Israeli Arabs have been described as belonging to a traditional collectivistic culture, with high power distance, uncertainty avoidance and masculinity (Amzaleg & Masry-Herzallah, 2021; Masry-Herzallah & Arar, 2019), while Israeli Jewish culture is considered a modern, "Western", individualistic culture, with an extremely small power distance (Masry-Herzallah & Da`as, 2020).

Though beyond the scope of this study, it is important to note that Arab students in higher education in Israel are often at a significant disadvantage compared to Jewish students and are frequently ill-prepared for academic studies, partially because of relatively poor preparation in the Arab public school system (Arar & Masry-Herzallah, 2014; Masry-Herzallah, 2021).

Learning in online courses relies on the "Western" individualist perception and may be difficult for Arab students who are unprepared for learning of this kind due to their cultural background. This issue has not yet been considered in research, more specifically not among master's degree students in education, who are all practicing educators in the Israeli education system. Therefore, this study pays special attention to the prediction of success in the online course. The current research was guided by the following questions:

1. What are the attitudes of students participating in the online course towards the learning processes and course contents?
2. Are there differences between the attitudes of Jewish and Arab students regarding the teaching processes, learning and evaluation in the online course and differences in the students` final grades?
3. What are the factors (variables) that predict success on an online course in general and would the prediction be different for Jewish or Arab students?
4. Which factors are perceived by Arab and Jewish students as promoting or inhibiting online learning?

Literature Review

Online Learning

Online learning is gaining more and more impact in higher education. Online learning can be described as the use of various technological tools to deliver vocational education and training (Singh & Thurman, 2019) and is characterised by a significant Internet-based instructional component (Means et al., 2009). It may be performed synchronously or asynchronously. In asynchronous teaching, the technology connects students with their instructor, independent of time and place, in order to participate in learning activities (Reid-Martinez & Grooms, 2018). Synchronous learning also exploits technological tools, however, in this type of learning the instructor and students must be simultaneously present, although they may be in different geographical locations (Chauhan, 2017).

Online learning may provide many advantages for students and teachers in higher education, such as new instructional aids, potential for varied learning activities and greater flexibility in regard to the time and place of study. Flexible scheduling allows students to pursue their educational goals along with other commitments and constraints (Bolliger et al., 2014). Furthermore, online learning provides teachers with the opportunity to integrate various virtual means of instruction in the learning process, such as video files, tutorials, and links to additional resources (Bolliger & Wasilik, 2009).

Factors Related to Students` Attitudes, Satisfaction and Success in Online Learning

Course Structure and Organisation

Course structure in particular has been identified as a critical variable, having a significant and direct effect on student attitudes and satisfaction. course structure is a combination of the alignment of learning outcomes and objectives, course navigation, course layout, student participation instructions, and course purposes (Gray & DiLoreto, 2016).

Instructors provide details about course expectations for assignments, due dates, guidelines, assessment rubrics, and resources in order to facilitate students' academic success and sustained learning. More specifically, course structure

refers to basic course information including a list of course topics in the syllabus, a description of the required workload for students, a definition of class participation, and a list of assignments (Eichelberger & Ngo, 2018).

Students' attitudes and their perceptions of the overall usability of the course probably correlate with student satisfaction and learning. In other words, the more organised and logical the course layout, the more likely it is that students will be satisfied with their learning in the course (Eom et al., 2006). Jaggars and Xu (2016) summarised the findings of several studies about online course quality. They found that quality courses contained the following characteristics: clearly written objectives, well-organised content, variety of opportunities for interpersonal interaction, and effective use of technology.

The Lecturer's Role and Teaching in an Online Course

The lecturer's role is more critical in an online course than in a traditional course (Purwadi et al., 2021). Lecturers also influence the students` attitudes towards online courses and towards creative assessment methods (Struyven et al., 2005). The lecturer needs to make many decisions relating to the development and planning of a course that includes innovative pedagogy and enable adaptation to the diverse needs of different students. They also need to adapt and modify the course to current dynamic pedagogic and technological changes (Crawford-Ferre & Wiest, 2012). A study by Eichelberger and Ngo (2018) presents the lecturer's roles (as active facilitator, intellectual stimulator, caretaker, and feedback provider), course design, and dialogue, in terms of perceived learning outcomes and students' attitudes and satisfaction. Additionally, the lecturer should empower the students' ability to manage their learning and provide them with feedback on their work within reasonable time after presentation (Raider-Roth et al., 2012). Consequently, the lecturer's feedback on different assignments affects lecturer-student relations. These activities encourage the students' involvement in their learning (Lehman & Conceição, 2010).

Students' Attitudes Towards Learning Skills and Satisfaction Concerning Online Courses

Research literature indicates that the most influential factor for students' attitudes and satisfaction concerning online courses is the understanding of technical skills (Bertea, 2009). These means facilitate students' easy access to the course information resources, learning resources, the lecturers and their study peers (Shelton et al., 2017). Technical skills are an essential indicator of student's self-efficacy and enthusiasm for online courses. Self-efficacy and initiative, along with intrinsic and extrinsic motivation, are significant predictors of the student`s behavioural intention in online courses (Liaw & Huang, 2011). Students' involvement in an online course is the main contributor to their attitudes and satisfaction concerning the online learning and increases their motivation due to their collaboration with other learners. Also essential for the students' success are technological and learning abilities, including the ability for independent learning, involvement in the course, good quality online teaching environment, and good interaction and support for the learner. These factors also predict the students' satisfaction concerning online learning (Ronen & Shonfeld, 2017; Shelton et al., 2017).

In fully online courses, interaction between learners is especially important, because it creates a collaborative community of learners that can provide support to the learner and a sense of belonging (Downes, 2012). Support and affiliation of this type should improve students' satisfaction from the technology-assisted course and improve their motivation to learn successfully (Shelton et al., 2017). Interaction with the lecturer is also very important on an online course (Downes, 2012). Indeed, the main reason that students object to online learning is the fear that there will not be sufficient contact with lecturers. This fear stems from lack of familiarity with innovative technology and also the difficulty that some students have to study independently, requiring self-discipline and taking personal responsibility for their studies (Shelton et al., 2017; Sukiman et al., 2022).

Indeed, there is scholarly consensus that to succeed in an online course the learner needs to be able to learn independently, be mature and have strong self-discipline, high motivation and good ability to express themselves and communicate in writing, ability to organise their time and comply with a timetable, and also the ability to manage the online learning environments (Hidalgo-Camacho et al., 2021; Ronen & Shonfeld, 2017). Learners are required to take full responsibility for their learning process, the determination of their goals and follow-up after their progress including acquisition of learning habits: when and where to study (Indreica, 2014).

Cultural Dimensions and Online Learning

Hofstede (2001) defined culture as a system of assumptions, norms and values that shape a worldview, expectations and rules of behaviour in a given social group. Research indicates the influence of cultural aspects on teaching and learning in general (Hofstede, 1981). Relying on the studies of Hofstede, further research indicated the influence of cultural factors on online learning in inter-cultural comparisons and found strong correlations between culture and online learning approaches (Alamri et al., 2014; Ferreira, 2016).

In order to understand the implications of Jewish or Arab cultural characteristics on students' success in online learning, the research employed the three cultural dimensions mentioned by Hofstede (2001): individualism/collectivism, power distance and avoidance of uncertainty to analyse the collected data.

Individualism/Collectivism: an individualist culture emphasises the personal goals and interests of the individual. Contrastingly, collectivist cultures focus on the level of social order and mutual dependence between individuals in different roles.

In the context of education in an individualist society, students tend to speak openly in the class or large groups while in collectivist society the students would hesitate to speak in class even when the teacher asks the class questions (Hofstede et al., 2010). The students rely on their teachers throughout the learning process. Moreover, online learning causes difficulties for students from collectivist societies because education in those societies relies on indirect communication channels, including non-verbal cues using tone, voices or body language so that the nature of online communication, based largely on written communication may impair these students' abilities in the online space (Hamdan, 2014).

Power distance: in cultures where there is a large difference in power, there is an expectation that members of the society will consent to this inequality. In the context of education, respect was the most important value that the student could learn in a culture with a high-power distance, while to be independent was one of the most important values that the students could learn in a culture with a low power distance (Hofstede et al., 2010).

A study by Wang (2007) that investigated the subject of online learning in four universities in different world states, showed that the dimension of power distance influences students' perceptions and participation in an online course. Students from a culture with a high-power distance do not see themselves as equal to their lecturers in comparison with students from a culture with a low power distance. This means that the students from cultures with a high-power distance are unwilling to form relationships with the lecturers either during the online lesson, in forums or by writing to the lecturer. They prefer to ask for assistance from their classmates instead. A study by Hamdan (2014) investigating online learning among students in Saudi Arabia (a state with a high-power distance) indicated that online learning created the necessary conditions for alteration of the learning culture, beyond pedagogy that is teacher centred towards pedagogy that sees the student at the centre, in addition it helped develop critical thinking and learning that is autonomy-oriented and promoted of social interaction.

Avoidance of uncertainty: People who belong to cultures where there is strong avoidance of uncertainty easily become disturbed in new, unstructured, vague or unexpected situations. In contrast people in cultures with a low level of avoidance of uncertainty tend to take risks and to be calm, tolerant, using discretion and are not aggressive in situations of uncertainty. In the context of education, research has shown that many teachers in cultures with strong avoidance of uncertainty prefer clear and structured learning. The students perceive the teachers as experts and as such they avoid confrontations. Moreover, they avoid controversial subjects at any price in order to maintain order in the class (Prowse & Goddard, 2010). Thus too, research by Alamri et al. (2014) identified cultural characteristics which influence online learning among students in Saudi Arabia in line with Hofstede's model. The findings show that the collectivist dimension, strong avoidance of uncertainty, significantly influences the students' perceptions of online learning.

In light of these findings, the research described here investigated the students' perceptions of the effectiveness of online learning and the implications of the components of online learning to the advancement of their success, in a comparison between Jewish and Arab graduate students, studying while serving as teachers in the Israeli education system.

Methodology

Research Design

The course entitled *Planning and control in education focuses* on "planning and implementation of policies in different education areas in Israel, to help learners to understand the processes of planning and implementation of education policies in Israel and to explain the influence of practical factors in the field on the implementation of policies " (from the course syllabus). The course materials are divided into five learning units and are accessible on the course site. All the lecturers are filmed in Screencast, software that enables the inclusion of presentations and video clips with the lecturer's oral explanations. These lectures are short and focused (each lasting approximately 1 5minutes) and they are recorded in Hebrew. They are uploaded onto the course site beside presentations, video clips, audio files and other learning materials. The short video clips and audio files detail and explain the course process, the students' obligations, the learning materials, the manner of learning and provide explanations concerning assignments and the subject studied in each and every unit.

The course lecturer, who is the author of this article, is accessible to the students and supports them both online and with electronic mail. questions to the lecturer on the course site and also offline – meetings during reception hours in the college or in telephone conversations. Additionally, there are three face-to-face meetings with the lecturer per semester.

During the course the students were asked to present five group (couple) assignments on the course site, based on the learning materials found on the site and in accord with the instructions given in the first lesson. Additional instructions were given during the online lessons. Calculation of the grades for the five assignments constituted 100% of the final grade.

Research Tools

The research combined both qualitative and quantitative research, the data were collected from a questionnaire that the students completed at the end of the semester, which was a questionnaire including both closed-ended questions and open-ended questions. The students' final grades for the course also provided data for analysis. Additionally, semi-structured interviews were held with eight Arab students in order to explain and reinforce the findings from the quantitative and qualitative analysis of the students' responses to the attitudes questionnaire, and consideration of the students' final grades.

According to Creswell (2014), the mixed-methods design consists of two phases: the numerical data are collected first, followed by collection of qualitative data that is used in order to explain the quantitative data. In the current research, the data collection process was divided into two phases. First, quantitative data was gathered by questionnaires. Second, qualitative data was collected from semi-structured interviews.

Sample and Data Collection

The research participants were students who studied the above-mentioned course, as part of their master's degree programme in an education college in central Israel. Data were collected through August and until September 2018. Five assignments were given during the course, the grades for three of the five assignments were given before the students filled in the questionnaire and grades for the last two assignments were published after filling in the questionnaire.

Table 1. Demographic Data of Participants

F	**%**
Mean age of the participants	38.61years (SD=8.14, ranging from 22 to 62 years).
Gender	79% women 21% Men
Sector	73.4%- Jewish 26.6%-Arabs
Hours spent surfing on the Internet per day, for both work and leisure purposes, but not for studies	2.68 hours (SD=1.92, minimum=1, maximum=9).
This course was their first online course	74%-yes 26%-no
Internet self- efficacy	79%- yes 21% no
Number of assignments given during the course	5

After deriving descriptive statistics from analysis of the questionnaire responses, the study proceeded with semi-structured interviews with eight Arab students (three men and five women). The semi-structured interview, composed of open and focused questions, helped the interviewees expose their stories and provide their meanings for their narratives openly and ensured the unity of the interview themes. The examinees' ages ranged between 27-50. To protect their confidentiality, the eight students were labelled as students 1 to 8 without revealing their identities.

A questionnaire was prepared specially for the research to elicit students' attitudes towards the teaching pedagogy in the online course. The questionnaire was composed in Hebrew. Before it was distributed to the entire research population, a pilot study was conducted with twenty students in order to ensure that the items were clear, and that answers would respond to the research questions. Most of the questionnaire items were in the form of closed statements and the respondents were asked to mark the extent to which they agreed with each statement on a 5-point Likert scale ranging from 1 – not at all to 5 – to a large extent. More specifically, the questionnaire included items gathering attitudes towards the pedagogic and techno-pedagogic structure of the course (for example: "presentations, reading materials, recorded lectures etc.), students' satisfaction concerning the course structure (for example: "the course structure and requirements were clear to me"), communication with the course lecturer (for example: "I received a response to my requests from the lecturer"), general satisfaction concerning the course (for example: "the course was interesting"), effectiveness of the learning process (for example: "through this method I understood the learning materials"), possible difficulties in the online course (for example: "it was difficult to find time to work on the assignment", "difficult to comply with the timetable") etc. The questionnaire also included questions eliciting demographic details, for example the participant's nationality, gender etc.

Since the questionnaire also included open-ended questions (the qualitative component, to enable the students to detail the difficulties that they encountered on the online course, aspects that they liked on the online course (course contents, the lecturer's role, the students' role, teaching methods – they were asked to relate to three aspects with examples) and aspects requiring improvement on the online course.

Data Analysis

The research was approved by the Ethical Committee of the academic institution where the data were collected. Then a notice was sent to the students on the course informing them about the research and inviting them to participate. They were asked to consent to expose their academic achievements at the end of the semester to the researcher and they were told that their grades would be used anonymously and only for research purposes.

When the online course ended, the students were sent a link to the questionnaire, which appeared on a Google Form platform through the course site. During the research ethical rules were carefully maintained, the students were promised anonymity in any publication of the research. The purpose of the questionnaire was explained to the students. Since the researcher was the course lecturer, the students were informed that their responses to the questionnaire would be completed anonymously and voluntarily, and there would be no influence of the questionnaire responses on the grades given for the assignments or the final grade for the course. Two weeks after distribution of the questionnaires, a reminder was sent to the students.

The interviews were conducted after the questionnaire responses were analysed. A message was sent to the Arab students who had participated in completing the questionnaire, explaining the research process and the need to conduct interviews with several students, again promising anonymity for the interview data. After receiving their consent, interviews were held with the students by an Arabic-speaking research assistant. The interview questions focused on their learning experiences in the course, for example: Explain your learning experience on the course. What are the advantages of an online course? What are the disadvantages? Did you have difficulty understanding the course programme? Was it difficult to understand the course assignments? How did you overcome any difficulties? Were you helped by the course lecturer? etc.

Both qualitative and quantitative analyses were employed. The results of the questionnaire survey were analysed with SPSS software. Descriptive statistics, correlations between the research variables, and students' final course grades were analysed through a Bootstrapping sample, hierarchical regression, simple linear regressions. Qualitative analysis was employed for the interview transcripts and the responses to the open-ended questions in the questionnaire, using content analysis in stages (Creswell, 2014). The analysis involved open coding to determine primary categories which represented central concepts, which were broken down in an additional coding process into secondary categories (Marshall & Rossman, 2014). These categories are presented below together with the relevant quantitative findings, creating connections and reciprocal relations between them.

Results

The findings are presented in line with the research questions. The first research question aimed to discover the attitudes of the students who participated in the online course towards the learning processes and course contents. The first stage of data analysis determined the research variables. The constructed variables, descriptive statistics and the values found for internal reliability according to Cronbach's α can be found in Table 2.

Table 2. Values for Means, SD and Internal Reliability of the Research Variables (N=195)

Variable	Mean	S.D.	Cronbach's α
Techno-pedagogic aspects	4.26	0.80	.64
Effectiveness of the learning process	4.02	0.85	.88
Communication with the lecturer	3.75	1.19	.85
Clarity of the course structure	4.09	0.78	.85
Assignments	3.58	0.81	.81
Satisfaction	3.76	0.94	.91
Mean grade	88.34	6.80	

Note: Possible range=1-5, apart from the course grade which ranges from 1-100

The data shown in Table 2 indicate that the respondents' attitudes towards the course were mostly positive. Also, the distribution of the variable *communication with the lecturer* is relatively wide, indicating a large variance in the way in which the students exploited this component. The data also indicate that the internal reliability of the variables was very good, apart from the variable *techno-pedagogic aspects*, which was found to have marginal reliability.

The next stage of the analysis calculated Pearson correlations between the final course grade and the other research variables, and also with selected demographic variables. Since the course grade does not naturally have a normal distribution, it is not possible to make assumptions from a linear test, so it was decided to test the correlation of the grades with the other variables through a Bootstrapping sample with 1,000 repetitions. Table 3 shows the estimated correlations in confidence intervals of 95%.

Table 3. Correlations between the Research Variables, Selected Demographic Variables and Students' Final Course Grade

Variable	Lower limit	Upper limit	p
Techno-pedagogic aspects	-.07	.24	.35
Effectiveness of the learning process	-.03	.31	.06
Communication with the lecturer	-.20	.07	.36
Clarity of the course structure	.00	.34	.03*
Assignments	-.19	.13	.63
Satisfaction	-.15	.18	.96
Age	-.04	.27	.15
Internet self- efficacy	-.09	.20	.48

Note: The correlations are presented in confidence intervals of 95%

The data presented in Table 3 indicate that a statistically significant positive correlation was found between ranking for *clarity concerning the course structure* and the final grade, such that if the student gave a higher grade indicating that the course structure was clear, then their final grade was also higher. A marginally significant positive correlation was also found between the findings for *effectiveness of the learning process* on the course and the final grades, such that if the student gave a stronger grade for an effective learning process, then they achieved greater success in the course. The second research question investigated whether there were differences between the attitudes of Jewish and Arab students towards the learning processes and online course components and whether there were differences in the students' final grades.

Table 4. Differences for Research Variables between Jewish and Arab Students

Variable	Jewish students (N=138)		Arab students (N=57)		
	Mean	Standard Deviation	Mean	Standard Deviation	t
Mean course Grade	91.15	4.59	81.45	6.56	10.12**
Effectiveness of the learning process	4.27	0.58	4.03	0.74	2.40*
Course components†	4.43	0.55	4.26	0.69	1.776*

Key: *p<0.05 **p<0.01

As is clear from Table 4, the Jewish students had significantly higher grades than the Arab students. It also seems that the Jewish students' positive attitudes concerning the effectiveness of the learning process were stronger than those of the Arab students.

To test whether there was a significant difference between academic achievements of the groups, a Mann-Whitney test was performed, which found drastic differences in the final course grades between the two groups: $U(203)=10.58$, $p<.001$, $z=8.20$, while Jews succeeded more in the course (M=90.97, SD=4.76) than Arabs (M=81.45, SD=6.92). Repetitive sampling found that the difference between the mean grades of the two groups, with a 95% confidence gap, ranged between 7.85 to 11.83. As can be seen from the data in Table 3, the independent variable with the strongest correlation with the final course grade is the variable *clarity of the course structure*, so that if the student was more convinced that the course structure was clear, then the student was more successful in the course.

The third research question investigated the factors (variables) that predict success on an online course in general and whether the prediction would be different for Jewish or Arab students.

To respond to this question, the ability of certain factors to predict success on the course was tested and whether there were different predicting factors for each of the two groups (80% of the course's students were Jewish and 20% were Arab).

In order to test dependence between sector (Arab or Jewish) and manner in which this variable predicted success in the course, hierarchical regression was performed into which the variables *clarity of the course* and *sector* were introduced (as a dummy variable: 0=Jewish, 1=Arab), and at the second stage the interaction between them was introduced. The predicted variable was the final course grade. Bootstrapping technique was used again here with 1,000 repetitions. The regression model was found to be significant, $F(3,199)=45.97$, $p<.001$ and explained approximately 41% of the difference in final course grades. The variable *clarity of the course structure* was not found to be a significant predictor in the model: (b=0.11, $t=0.14$, CI[-1.51, 1.73]), however, the variable *sector* was found to be a very strong predictor in the model and

† The course components = assignments given over the course, learning aids such as reading materials, presentations, video films of lectures, communication with the lecturer in different ways.

was statistically significant (b=-18.32, *t*=-3.39, CI[-28.98, -7.66]). The interaction between the two variables was found to be marginally significant (b=2.14, *t*=1.68, CI[-0.38, 4.66]).

As can be seen from Figure 1, it seems that *clarity of the course* does not predict success in the course among the Jewish participants but does positively predict success in the course for Arab participants. In order to test whether this trend was significant, the interaction was broken down through two simple linear regressions, one for the Jews and the second for Arabs. As expected, the regression was not found to be significant for the Jews ($F(1,145)=0.02$, $p=.8$) and explained 0% of the difference in their course grades. However, the regression was found to be marginally significant for the Arabs ($F(3,54)=3.59$, $p=.06$), whereby the *clarity of the course* explained approximately 6% of the difference in grades. Repetitive sampling 1,000 times with a confidence gap of 95% found that this prediction was significant (b=2.26, SE=1.05, $p=.03$, CI[0.20, 4.45]). This means that insofar as the course structure is clearer to the Arab student, then they will have greater success in the course, although this correlation does not exist for Jewish students. The findings also indicate that the Jewish students relate more positively to the course components than do the Arab students.

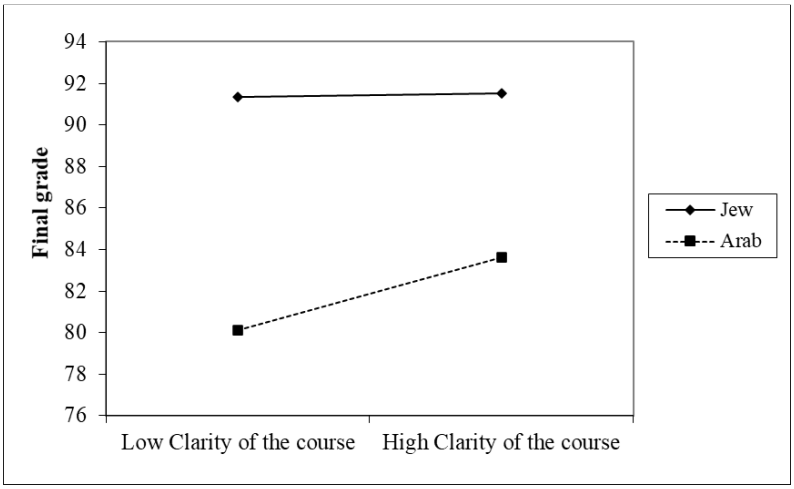

Figure 1. Interaction between the Clarity of the Course and Sector in the Prediction of the Final Course Grade

Analysis of the Qualitative Findings

The fourth research question aimed to discover an explanation for the differences between the responses of Jewish and Arab students, perception of effectiveness of the course, and the difficulties that the Arab students faced on the online course.

It was possible to see differences between the responses of Jewish and Arab students to the open-ended questions concerning the positive factors, difficulties and matters for improvement in the online course. The main differences are summarised here: The Arab students' responses contrasted with those of the Jewish students, indicating significant differences in their attitudes towards the online course. Jewish and Arab students noted positive aspects of the course (e.g., the course structure was clear and orderly and easily understandable, helping students to know where the materials could be found in each learning unit including videoclips and detailed explanations for each learning unit. It also included recorded lectures and instructions for assignment performance. The lecturer used varied teaching methods for each learning unit), but the perception of effectiveness of the course was far higher among the Jewish students in comparison to the perceptions of the Arab students. These findings echoed the findings from the quantitative analysis. Moreover, Arab students noted the difficulties that they faced in the online course, and these difficulties: difficulty writing the papers. The assignments were difficult in terms of the investment in hours and effort. This apparently explains their perceptions concerning the effectiveness of the learning processes on the online course as found in the quantitative analysis.

The difficulties that faced the Arab students throughout the online course and which influenced their attitudes concerning the effectiveness of this learning process and their final grades, as they emerged from the analysis of the interviews and the open-ended questionnaire questions were: *the "asynchronous" learning model based on independent learning, a heavy burden of assignments, the type and level of the assignments, and the degree of their willingness to turn to receive assistance from the lecturer*. Each of these themes are now considered separately.

Independent Learning

The Arab students indicated that online learning, and especially "asynchronous" learning that relies on independent learning, without the lecturer's presence was something novel for them, and that it differed from the learning culture prevalent in Arab society, as one of the students explained:

> The course relied on independent learning, although it's true that in every learning unit there are various learning means that can help me to answer the assignment, but it's still not easy for me, or more accurately for the Arab students who are used to frontal teaching. We prefer frontal courses where the lecturer teaches instead of this online course.

Another student noted:

> The teaching method in an online course demands that I assimilate a new teaching style, different from the regular teaching methods that are more familiar for me. And most important, you have to learn by yourself, to take responsibility for your learning, to follow the instructions and notices from the lecturer to succeed in the course. Unfortunately, that is not easy for me, it seems that in the end we will get used to this learning style, but only gradually.

An additional difficulty reported by the Arab students relates to their ability to manage their time and to submit assignments on time, as noted by one of the students:

> As part of the course, we have to submit five assignments, since these are assignments in pairs once every fortnight, this means we have to plan our time well, so that we can meet and perform the assignments on time. The truth is that this is not simple since we are also working.

Another student added:

> The learning style on the online course necessitates students' self-discipline, taking responsibility for my learning and the truth is that this contradicts what I was used to both as a teacher and as a student who had frontal learning. This was a source of pressure; I am afraid I cannot comply with the demands of the assignments and the submission times.

The Course Assignments

The students' attitudes related to the course structure and the fact that assignments were organised along the learning continuum, so that each assignment was based on the previous assignment. They also included practical assignments which required investment and high order thinking as can be seen from the following testimony from the students:

> The assignments throughout the course were practical assignments, a sort of short investigative work from our practical work in school. Each assignment is based on the previous assignment, so they require a lot of thought both in order to understand them and in order to prepare them properly. It's important to emphasise that the intention here is that we need to choose the subject for our work according to the assignment instructions, and often this is not easy.

Arab students preferred traditional evaluation methods instead of alternative evaluation methods, since traditional methods are used in the Arab education system, so that their attitudes towards the effectiveness of the learning process in the online course were less positive and this was also expressed in their final grades, as one of the students explained:

> The truth is that I prefer an exam at the end of the course instead of assignments, when I learn an online course and take an exam at the end, we can learn the material towards the exam, but within the frame of this course, we had to become involved in the learning process throughout the course, and that wasn't easy for me.

Additionally, the students noted the high level of the assignments, especially when they were asked to choose the subject of the assignment themselves from their practical educational work:

> In one of the assignments, I lost points in parts where we were supposed to describe examples, to analyse them in line with the assignment's instructions. This was despite the fact that it was all written very clearly … moreover, the questions within the assignments were questions that required higher order thinking, reflective writing, questions that I was not used to and so my grade for the assignments was harmed.

Summary of the Arab students' testimony indicates that their preference for traditional evaluation methods explains their less supportive attitudes to online learning and their lower grades in the online course in comparison to Jewish students.

Asking for Help from the Lecturer

When the students were asked if they turned to the lecturer for help or support in preparing the assignments, they indicated that they rarely used this resource although the lecturer was always accessible for them both through electronic mail, in face-to-face meetings when needed and even through WhatsApp. The reasons for this reticence to use the resource were not clear to them, and some of them were unable to explain the source of their reticence. Perhaps this is explained in the following citation by one student:

> During the course I rarely turned to the lecturer, I preferred to receive help from my classmates on the course and not to turn to the lecturer, sometimes I was embarrassed to do that because we are not used to forming relationships with the lecturer.

Another student explained:

> I once asked the lecturer for help and he did assist me, I must admit that I always rely on my own abilities and don't turn to the lecturers to ask for help, it may not be correct, but we were used to coping alone, apparently, we need to teach our students another style in order to succeed in coping with the challenges of online learning.

In conclusion, the interviewees' testimony explains the findings from the questionnaire responses concerning the difficulties encountered by Arab students during the online course.

Discussion

The present study aimed to investigate the effectiveness of the online course's learning processes and components and the variables that led to the students' grades on the course in a comparison between Jewish and Arab students. The research also tried to examine a possible correlation between culture and the students' attitudes towards the course and their achievements in the course. Research in other countries has shown that cultural characteristics influence students' success in online learning (Ferreira, 2016). In contrast on the local level, in Israel, this issue has not been a subject for research. Thus, the present study contributes to the understanding of the influence of cultural differences on online learning in the formal education system and higher education institutions.

The research findings show in general that the students had positive attitudes towards the online course and its components. The students had very high perceptions of the course structure and the effectiveness of the course learning processes. The findings even indicated a positive correlation between the reports concerning the clarity of the course structure and effectiveness of the course's learning process for the students' final grades, helping them, according to their reports, to succeed more. The research findings showed that the clarity of the course predicts the students' success on the course. In the comparison between the Jewish and Arab students, it was found that the variable 'sector' (Jewish/Arab) moderated the correlation between the clarity of the course and the course grade, even among the Arab students.

Analysis of the present research findings brings several insights; the research findings emphasise the strong importance of the students' positive attitudes towards the learning experience on the course. The students' positive attitudes may indicate the success of the course in transmitting knowledge to the students. Thus, students' positive attitudes are also critical to the integration of courses of this kind (online courses) in academia (C. Wang et al., 2019). Moreover, the findings constitute an important contribution to the understanding of students' perceptions concerning the effectiveness of learning processes on an online course (Eom & Ashill, 2016; Lehman & Conceição, 2010). It is possible to explain this by the use of many different online learning means which were provided to the students. Their positive attitudes concerning the use of varied learning materials and exploitation of meetings with the course lecturer constitute indications that the online course conducted in this manner succeeded, and so it is recommended that this method and its principles should be adopted but with consideration of cultural differences between the students, a point elucidated below.

Secondly, the findings in the present study expand the findings of previous research which indicated that effective structure and design of an online course using varied and flexible teaching methods with interaction between the lecturer and the learner, and support of the learner, all influence the students` attitudes towards the course and their success in online learning (Eichelberger & Ngo, 2018; Eom et al., 2006; Nortvig et al., 2018; Weidlich & Bastiaens, 2018).

It is possible that watching the lecturer creates a sort of acquaintance with them. Using videoclips the students see the lecturer and hear their voice, something that reduces the distance between them, and may improve students' attitudes concerning the clarity of the course. Additionally, it is possible that providing assignments throughout the course, once a fortnight also helped to maintain a constant interaction with the course lecturer.

Another finding was that Jewish students had significantly higher grades than the Arab students on the online course. It is emphasized that extant research literature does indeed indicate differences in the academic achievements of Jewish and Arab students in academia (in regular courses but not relating to online courses), inter alia as a result of limitations in language abilities which constitutes an obstacle at the individual level (see for example Arar & Masry-Herzallah, 2014; Masry-Herzallah, 2021).Thirdly, the research findings clarify the role of sector and culture and their influence on the students' perceptions of the effectiveness of the learning processes and their success in the online learning. The findings indicate that sector (Arab/Jewish) plays an important role in the correlation between students' attitudes towards the

effectiveness of the learning processes and their success in online learning. Another possible explanation for this finding is connected with the course contents including the use of different technological means such as presentations, video clips etc., which may also be difficult for Arab students to exploit due to the digital divide between Arab and Jewish societies that results from less integration of computer technology in the Arab education system (Amzaleg & Masry-Herzallah, 2021).

The research findings concerning the role of culture and its influence on the students' attitudes and satisfaction regarding the online course indicate that culture (Arab/Jewish) plays an important role in determining the students' attitudes toward the course and success in online learning. These findings echo those of previous studies which showed that cultural aspects influence students' attitudes towards online courses and their success in online courses (Ferreira, 2016; Liu et al., 2010).

It is possible to explain the differences between the attitudes of Jewish and Arab students toward the effectiveness of the learning processes according to the analysis of Hofstede (2011). The Arab education system is characterised by a high-power distance between teachers and students, the teacher is at the centre, teaching methods are more formal instead of relying on student participation, the students participate only when the teacher allows them to do so (Masry-Herzallah & Arar, 2019). In contrast, in the Jewish education system there is a very low power distance between the teacher and the students, the student is at the centre, the student has responsibility for their learning, and participates in the learning processes (Amzaleg & Masry-Herzallah, 2021; Masry-Herzallah, 2021). Thus, Arab students are unused to the online teaching style, where they need to take responsibility for their learning without the presence of the lecturer, they feel uncomfortable with this and lack self-confidence to cope with learning processes performed solely in the online space. Consequently, this research may contribute to the understanding of the influence of cultural differences on online learning in academia.

Another possible explanation for these findings emerges from the qualitative findings, and is connected to the characteristics of learning in the online course, which followed the principles of constructivist learning (Reid-Martinez & Grooms, 2018), as the students were asked to perform five practical assignments according to their choice. This style of learning without the lecturer and without a predetermined subject, is not easy for Arab students as it is unlike the structured learning, they were used to in which they needed to obtain the correct answers and depende on a single authoritative source of information (Alamri et al., 2014). These findings correspond with the findings of previous studies which noted that lack of consideration of this the student's familiar learning style is liable to influence the performances of students from cultures with high avoidance of uncertainty (Liu et al., 2010). Consequently, online learning constitutes a challenge for students from cultures with strong avoidance of uncertainty, if they are willing to choose new paths of construction of knowledge instead of relying on a less adventurous learning style dependent on their previous experiences (Ferreira, 2016).

Conclusion

The present study can add to extant knowledge and serve as a source for future studies. It can also inform higher education institutions, in both multi-cultural and local (homogenous) campuses. This information can help the institutions to plan, develop and guide lecturers, in the development of culture-sensitive online learning, and provide a response for students from different cultures, especially non-"Western" cultures that are characterised by a high-power distance and strong avoidance of uncertainty. For example. combined online learning (synchronous and a-synchronous and face-to-face) that provides responses to students from different cultures including meetings with the lecturer. Additionally, they might employ traditional evaluation such as exams as an alternative means of evaluation for students from cultures with strong avoidance of uncertainty. This could be supplemented by encouragement and guidance of group work of students from different cultures accompanied by teaching assistants and instructors from those different cultures.

It is important to note that online learning may lead to transformation of learning and teaching processes for students from collectivist cultures with a high-power distance and strong avoidance of uncertainty, such as students from Arab society in Israel. Online learning may help students from these cultures to become more autonomous in their learning and to take responsibility for their decisions (Hamdan, 2014).

Recommendations

The research aimed to discover the factors that predict success on an online course in general and whether the prediction would be different for Jewish or Arab students in a single college, and a single master's degree course. The sample was composed of students who were mainly practicing educationalists and committed to use academic literacy in their work. It is recommended that follow-up research should be conducted with a sample of students studying for a bachelor's degree in education to examine whether there are additional obstacles apart from these obstacles that influence their success in online learning, meaning language difficulties and assimilation in academia. These students would be younger and not yet serving as educationalists in the field. Additionally, it is recommended that further research should relate to the same online course taught by a Jewish lecturer.

Limitations

The present study examined students' attitudes towards the online course, but did not examine the assimilation of the studied materials in practice. This means, there was no direct investigation of the students' internalization of the knowledge. This is a limitation of the present study and future research should examine whether the online method of teaching is indeed preferable to other teaching methods, traditional or non-traditional, in terms of actual acquisition of knowledge.

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