Is there a Difference between Face-to-Face and Online Classes On Students' Performance?

Muna Jebreen Al Boti
Assistant Professor in Curriculum and Instruction
Ministry of Education, Amman, Jordan
Wesam Bassam E'layan
Ministry of Education, Amman, Jordan

Abstract

Online education programs are established in educational institutions, including primary schools. However, in eastern countries we need more research in comparing online and face-to-face classes across those schools. The purpose of this study was to compare the effectiveness of different teaching methods (i.e. online and face-to-face classes) on students' performance in English language subject that has been taught by the same instructor. A quantitative method is adopted to collect required data, and paired T- test is used to analyze the data. The sample of the research consists of 38 female students in sixth grade enrolled in English subject class in a primary school. It has been found that pupils enrolled in the online class have received higher grades scores than those who participated in the traditional section. Further, the article has provided further explanation, discussion, and a direction for future research.

Keywords: methods of teaching, online education, traditional learning, students' performance, learning effectiveness

Introduction

Teaching has several purposes, and one of them is to bring a fundamental change across learners (Ambelu, 2011). To facilitate the process of knowledge transmission, teachers should apply appropriate teaching methods that suit specific objectives and outcomes (Hightower, Delgado, Lloyd, Wittenstein, Sellers & Swanson, 2011). Besides, learning techniques have to take into account souring conditions since each environment has its own circumstances such as age, gender, grade and so on. However, research on teaching and learning issues constantly endeavor to examine the extent to which different methods could enhance students' learning and performance (Ganyaupfu, 2013).

Remarkably, poor academic achievement by students is basically linked to application of ineffective teaching techniques by teachers (Adunola, 2011). Research on the effectiveness of these methods indicates that the quality of teaching strategy is often reflected by the performance of learners; in other words, students' outcomes are an index of applied methods quality. For instance, pupils have varied accomplishment once they were learned under different strategies. However, teachers need to be familiar with numerous educating approaches to choose appropriate ones that consist with environmental circumstances for achieving the desired and planned goals (Ganyaupfu, 2013; Adunola, 2011).

However, students' academic performance is the outcome of such strategies and techniques, and it relies heavily on teaching methods that have been chosen by teachers. These approaches are often measured by examination or/and continuous assessment despite there is no general agreement on what is the best test or which aspects are important (Mingle & Adams, 2015). Cunningham and Cordeiro (2000) have asserted that achievement can be measured by assessment that should be grounded in authentic tasks to inform and improve outcomes. Therefore, teachers can introduce and apply different types of evaluations and methods to improve the accomplishment of the students (Jordanian Ministry of Education, 2004).

Besides, teachers can use flexible and different strategies weather face- to-face in the classroom or through online. However, learning objectives for online teaching differ than eye to eye technique because of the differences in student-student, student-content and student-instructor interactions. Hence, the measurement of those objectives should be differ as well. While the types of assessments (i.e. objective, subjective, performance, etc.) may be the same, the implementation, application and interpretation of the assessments are necessarily being different (Gray, Brown, Maki & Schulte 2013).

However, previous research has investigated how teaching methods affect students' outcomes (Ayeni, 2011), others have focused on subject matters (Adunola, 2011). Furthermore, Baradwaj and Pal (2011) have emphasized on students' abilities differences. Others have examined face-to- face method and distance learning on the students' achievements and they found contradictory results. For example, Allen, Bourhis, Burrell, and Mabry (2002) revealed that face-to-face strategy indicated high level of satisfaction on students' outcomes. On the other hand, Elfaki, Abdulraheem, and Abdulrahim (2019) found a positive significant difference in online learning on learners' outcomes. But, Means, Toyama, Murphy, and Baki (2013) concluded that purely online learning has been equivalent to face-to-face instruction in effectiveness. Despite those contributions, there is a lack of knowledge regarding appropriate teaching methods that could enhance students' achievement, mainly, across developing economies; particularly these economies have different abilities and tools to do so. Thus, we aim to compare the effectiveness of different teaching methods (i.e. online and face- to- face classes) on students' performance.

Review of Literature

Academic Performance

Academic performance has been defined differently due to different views and contexts. For instance, it has been seen as the outcome of education, and the extent to which students, teachers and institutions have attained whether in short or/and long-term educational goals (Mingle & Adams, 2015). Performance in general relates to how well one does one's job (Bulach, Boothe, & Pickett, 2006). Bulach et al., (2006) state a person who performs effectively to achieve his/her objectives and results to the correct standard. According to Narad and Abdullah (2016) academic performance is the gained knowledge which is assessed by marks by a teacher and/or educational goals that have been set by students and teachers to be achieved over a specific period of time, which often a semester. Martha (2009) has emphasized on students' examination, tests, and in a course work. Elfaki1, et al., (2019) have focused on what students have learned all the way throughout the course.

Academic outcomes are considered to be the centre around which the whole education system revolves. Narad and Abdullah (2016) pointed out that the learners' achievement determines the success or failure of any academic institution. Singh, Malik & Singh (2016) also argued that students' performance has a direct impact on the socio-economic development of a country. Similarly, Farooq, Chaudhry, Shafiq and Behanu (2011), asserted that the achievement serves as a bedrock for knowledge acquisition and the development of skills. Additionally, they emphasized that the top most priority of all educators is academic performance of pupils. And to do so, it has been used scores on tests, class work etc. to determine the competence of a student in a course. Gagne (1985) has suggested five main categories of learning outcomes, which are verbal information, intellectual skills, cognitive strategies, attitudes and motor skills. All these outcomes are important to the learning process and learning tasks which require the demonstration of learning outcomes.

Comparing Online and Traditional Education

Online education as it has been implemented over the past decade, and has improved over time according to several measures. These standards include providing access to education, offering education to a larger number of students, using more interactive and widely accessible technologies, besides, leading students to academic success on a wider range of achievement instruments (Dell, Hobbs & Miller, 2008). Therefore, it will be critical to continue research to monitor the authenticity of online learning and communicate criteria for effective online learning.

Online education is different from formal or traditional one. For example, in formal classroom settings, there is a direct relationship between teachers and students. Teachers teach in front of the class and become the center of the class. While in distance learning settings, the level of interactivity between lecturers and students is partly limited by the technology used (Besser, 1996). Teachers have to organize teaching materials and resources to be suitable for the content and format of distance learning (Beaudoin, 1990). Nykiel (1999) mentioned that this alternative teaching method requires an extra effort from teachers. However, to effectively explain via distance education methods, educators must plan, organize, rehearse, deliver, receive feedback, and start over. This method does not save instructors' time merely, but it changes the way they spent time delivering the information to students and retain the teacher-student relationship (Groves, 2001). This type of learning involves teachers, students, and media, which are similar to a traditional teaching method despite the major difference is the presence of the teacher in the classroom.

In a comparative study, Horvitz (2007) examined the differences between traditional and online learning environments and argued that traditional learning environments are (a) bound by location and presence of instructor and student, (b) presented in real time, (c) controlled by an instructor and (d) are linear in teaching methods. Using evolving information and communication technologies, asynchronous communication and real-time information, online teaching and learning environments are unbound and dynamic. Online learning environments include diverse range of pedagogical practices and are often characterized by active learning student-centered pedagogical techniques (Barker, 2003; Browne, 2005).

Methods of Teaching: Traditional Education vs. Online Education

Teaching is a continuous process that involves bringing desirable changes in learners by using appropriate methods (Ayeni, 2011). Baradwaj and Pal (2011) sustained that teaching methods work effectively mainly if they suit students' needs since every one of them interprets and responds to questions in a unique way (Chang, 2010). As such, alignment of teaching methods with their necessities and preferred learning expected to influence pupils' academic attainments (Zeeb, 2004). However, strategies and methods are changing over time; mainly, in technological era. As a result, nowadays online education and distance techniques have become an alternative system to traditional lecture-style (Block, Udermann, Felix, Reineke & Murray, 2008). On the other hand, the traditional class room technique is also effective in improving academic grades and skills of students (Shahid & Shaikh, 2019).

Traditional Education

The traditional classroom (i.e. face-to-face learning system) is an instructional method when the instructors and the students are physically present in a certain place like a classroom while teaching and learning take place at the same time. It is the most traditional type of learning instruction (Elfaki1, et al., 2019). The most important component of classroom learning is the social and communicative interactions between students and a teacher; besides, student and student through conversation and discussion which lead to achieve the learning objectives (Ni, 2013). A study conducted by (Burdina, Krapotkina, & Nasyrova, 2019) revealed that student-teacher communication can help students to raise their academic performance and motivation. Wuensch, Aziz, Ozan, Kishore, and Tabrizi (2008) indicate that any instructional format has its own strengths and weaknesses. For example, Hurlbut, (2018) has compared students' progress in a face-to-face course compares to students' performance in an online section. The research findings suggest that students enrolled in traditional class generally received slightly higher grades and assignment scores than those who participated in the online section. On the other hand, Demirci (2007) examine students' homework performance and physics grade points. The results show that the online homework group has poorer results on homework completion and overall performance than the traditional homework group. Despite those contributions, we need to know more about traditional method, particularly, in different context and culture. Thus, the study examines the effectiveness of traditional methods on the students' academic performance.

Online Education

Nowadays, the alternative method of classic teaching is online or distance education, which is defined as "providing instruction for students who are separated from the instructor by physical distance through the use of technology of electronic means." (Partlow & Woods, 1996). Similarly, Volery and Lord (2000) have defined it as any approach that deliver education to replace the same time, same place, face to face environment of a traditional classroom. According to this definition, distance education can take many forms such as mail correspondence, open and closed circuit audio, video presentations, telephone communications, and the increasingly popular Internet. With these alternatives, students are able to attain education even if they far in distance from an educational institution (McLester, 2002), or when global pandemic spread like Covid 19. However, some scholars suggest that interaction in an online environment promotes student-cantered learning, participation, and discussions than a traditional classroom setting does (Karayan & Crowe, 1997; Smith & Hardaker, 2000). On

contrast, Davies and Graff (2005) found that greater online interaction was not significantly associated with higher performance for students achieving passing grades.

According to Mehmood and Taswir (2013), the use of technologies such as social media networks and internet is one of the most important factors that can affect educational performance of students positively or adversely as well (Mingle & Adams, 2015). With the help of different networking applications such as WhatsApp and Facebook, people can easily communicate with others. Those applications have been used as teaching tools to improve pupils' skills like writing, listening and speaking (Fattah, 2015; Awada, 2016; Justina, 2016; Alfahadi, 2017; Saeedi, 2019), to increase understanding between teachers and students (Elhay & Hershkovitz, 2019; Najafi & Tridane, 2015; Rosenberg & Asterhan, 2018), as a result academic performance (Amry, 2014; Elhay & Hershkovitz, 2019).

Shahid and Shaikh (2019) have studied the effect of using WhatsApp as a teaching method to improve English language skills, and found that students performed better. Furthermore, using Facebook leads to a significant increase in students' knowledge, and encourages them to change their behavior patterns, and makes them more enthusiastic to participate in the learning process (Petrović, Petrović, Jeremić, Milenković & Cirović, 2012). Besides, there are many positive aspects of employing Facebook in foreign languages learning. It facilities the discussion board, emails and messaging can scaffold learners what they need in their cognitive development (Zainuddin, Abdullah & Downe, 2011). Hussain and Al-Ghoul (2015) have investigated the effectiveness of using Facebook on the English language achievement, and it has been found significant differences for the group studied by Facebook method and for students' cumulative average, and they believe that more studies are needed to evaluate its effectiveness. Means, Toyama, Murphy, Bakia, and Jones, (2010) resulted that classes with online learning produce stronger student learning outcomes than do classes with face-to-face instruction.

On the other hand, Mingle and Adams (2015) have revealed the negative effects when students have used WhatsApp such as poor grammar and spelling errors. Moreover, Kirschner and Karpinski (2010) have concluded that Facebook users reported having lower GPAs in comparison with learners that having traditional method. Further, other studies show equal or no difference when comparing virtual and face-to-face instructional models. For example, Wrenn (2015) has examined the effectiveness of instructional model on student achievement. The findings indicated that online instructional models were as effective as traditional instructional models. He has concluded that students performed equally well in online instruction as compared to traditional instruction. Also, Block, et al., (2008) have examined achievement and satisfaction in students who participated in an online or a traditional lecture based. Result has showed no significant differences were found between online and traditional courses in the regular course exams, and perceptions of the online course were positive. Besides, they found the online class was an acceptable alternative to a traditional lecture based class when achievement on exams was the primary and may be only outcome measure.

Although literature supports the conclusion that the online learning environment contributes to better achievement, these topics need more investigation deeply and broadly, mainly across Arab countries.

Research hypotheses

Based on the foregoing literature review, the purpose of this study is to compare the effectiveness of different teaching methods (i.e. online and face- to- face classes) on students' performance. The following research hypotheses guided this study:

H1: There is a positive effect on a traditional teaching method on students' performance.

H2: There is a positive effect of online teaching method on students' performance.

H3: There is no significant difference between traditional and online teaching methods on students' performance.

Methodology

Participants

The participants of the research consist of 38 female students aged 11 years old in grade six enrolled in English subject class during first and second semester 2019/2020, from Amoriya first primary school for girls in Jabal al- Nasir in Amman/ Jordan.

Research Design

The research adopted a quantitative method strategy (Hurlbut, 2018), and it explains and predicts the relationship between the study variables (i.e. methods of teaching and academic performance). On the first and second semester teacher have been following the school curriculum on face to face classes for 4 months and on a distance basis for another 4 months. Students were assessed at the end of each month, and final term scores for both first and second semesters have been calculated.

Instrument

The instruments that have been employed in this study to collect data were developed by the course instructor, four monthly exams, class work assessment which based on certain criteria, and two final exams. The purpose of these instruments was to measure the performance of a group of students using different teaching methods, which are traditional and online learning techniques.

Procedures

A group of 38 female students in grade six studied at the first semester 7 units during four months received traditional teaching method (i.e. face to face method). And they have studied at the second semester different 7 units during four months received distance education, which is information via technology.

The main differences between the two strategies were the interaction between the students and instructor (face-to-face time with the instructor in the traditional course) and the use of online content (videos, and discussion on WhatsApp and Facebook). Further, tests and assignments were on Noor Space and Darsak which are platforms have been developed by Jordan ministry of Education. On distance learning the teacher used online videos, pictures to explain the content of

the lessons and to demonstrate the vocabularies. In addition, she used Google translate and tape to illustrate the pronunciation of the vocabularies and to listen to the lesson. Moreover, teacher sent the assignments weekly through WhatsApp and Noor Space platform such as read a paragraph and write an essay etc. Also, both Noor Space and Darsak were the platforms where students apply the exams. According to traditional face to face strategy, teacher use direct teaching, activity based learning, group work, pair work strategies to demonstrate the lessons using textbooks, cassette recorder, wall chart, chalkboard and flash cards. Besides, exams were held in the classroom with the teacher attendance.

Data collection

The researcher obtained access to all grades and assignments through the teacher's bookmark for both the traditional and online versions of the course following the Jordanian ministry of education assessment and evaluation criteria which matching the learning-outcome of this study.

The academic year grades 2019/2020 for English language subject have been obtained for both two semesters, which are traditional and distance methods. Traditional and online scores were calculated by the monthly exams, class work (means performance assessments), and the final exam score of each semester.

The scores for both teaching methods are counted as 40% for the first and the second exams (the monthly exams), 20% is calculated for the third performance assessments (the class work), and 40% summed up for the final score (the final exam). The following information provides details regarding the two types of scores.

● Monthly exam scores for two months: The measurement of the monthly exam was based on paper-and-pencil in the first semester and online on the second semester. In both semesters, all students were required to take one exam per month. The score for the four monthly exams (two for the first semester and two for the second semester) counted as 20% of the final score of each exam.

● Performance assessments (class work): This is the third month assessment for both semesters. For the first semester, it is divided into speaking, listening, reading and writing skills criteria scores which counted as 5% to each skill per month. According to online course, the third month has different criteria: WhatsApp, homework, participation in WhatsApp activities, Noor space homework, and following the teacher's instructions in online teaching scores counted as 5% to each criterion. So, the score for the class work counted as 20% of the final score for each semester.

● The final exam score: It is the end of each semester, and all students were required to take these exams. The first one was at end of term one in the classrooms, but the second one was at the end of term two online exams on Noor space and Darsak platforms. Table 1 illustrated the distribution of the marks during the academic year.

Table 1 Marks' Distribution during the academic year

	First month evaluation	Second month evaluation	Third month evaluation (performance assessment)				Final exam
First semester	20%	20%	20%				40%
			Speaking	Listening	Reading	Writing	
			5%	5%	5%	5%	
Second semester	20%	20%	20%				40%
			WhatsApp home work	Participation in WhatsApp activities	Noor space homework	Following the teacher Instructions	
			5%	5%	5%	5%	

Data analysis

This study followed a quantitative method design, and a statistical analysis was conducted by using SPSS. Paired-t test has been used to determine significant differences of students' scores (performance) and between applying two different teaching methods (i.e. online and face- to-face classes). Means and standard deviations were computed for both semesters, and all hypotheses were tested at the $\alpha = 0.05$ level (Sekaran, 2006).

Results

The collected data is analyzed by SPSS to compare differences between students' performance on online method and traditional method. T-test has been conducted since is appropriate when we want to compare means of two samples (Shahid & Shaikh, 2019). Table 2 shows a significant difference in the online students' scores and the traditional students' scores.

Table 2 Results of analysis between mean scores of online and traditional methods

Teaching Method	Mean	N	Std. Deviation	Std. Error Mean	Correlation	Sig.
Traditional	71.5263	38	18.57015	3.01248		
Online	80.3158	38	14.85262	2.40941	.970	.000

Table 2 provides the mean scores of examined variables, which are traditional class vs. online class. It has revealed that mean differences between online and traditional were significant. The paired-t test illustrated that there is a statistically significant difference ($p < 0.000$) between the online and traditional evaluation mean scores. The difference between the two means indicated an increase of 8.78 in student ratings in the online method. Online evaluations produce essentially greater quantitative scores as those administered in class. Findings conclude that those students who were taught in the classroom scored lower than the ones who were taught through online due to the p value is 0.000 (see table 2) which is less than 0.05. Thus, we can conclude that online as a teaching method can affect the academic grades/scores of students' high performance.

Discussion

It has been found that online teaching method has a positive effect on students' performance in comparison with face -to- face classes. Means between the two courses were statistically different in favor of the distance learning process which means that when students participated in the online class score highly academic performance rather than participated in the traditional class. Although, the results consist with literature (e.g Shahid & Shaikh, 2019; Hussain & Al-Ghoul 2015; Means, et al., 2010), several studies show equal or no differences when comparing virtual and face -to- face instructional methods (see Wrenn, 2015; and Block, et al., 2008). On the other hand, some research found that students who enrolled in traditional classes received higher grades than who participated on online sections (e.g Hurlbut, 2018; and Demirci, 2007). Indeed, any instructional format has its own strengths and weaknesses (Wuensch et al., 2008). Furthermore, Baradwaj & Pal (2011) sustained that teaching methods work effectively particularly if they suit learners' needs since every student interprets and responds to questions differently in a unique way.

The study conclusions have emphasized on the importance of distance education as it provides learning for students within emergency cases such as spread of diseases and epidemics like Covid 19. This study conducted on 2020 during this virus spread all over the world. This emergency case prompted educational institutions to move to such method. This quick switch leads Jordanian Ministry of Education to take an advance step to establish platforms for students to complete the learning process in such difficult situation. They organize teaching materials and resources to be suitable for content and format distance learning; nevertheless, we have to take into consideration the limited time that the ministry had to face, and comply with it.

However, there are many reasons to justify the findings of this study. First of all, the awareness of Jordanian ministry of education, and the capabilities of it staff, despite of its difficult conditions, to move quickly into safe environment, which is through online. They guarantee the awareness of those who are in charge of the educational process like teachers, students and parents to take the responsibility of learning.

Secondly, learning process requires a sense of self-directed learning (Song & Hill, 2007). Hence, students feel more responsible about their learning and with the help of experienced teacher, who provide for them the appropriate material, to let them see and do through internet that motivate them and encourage them to perform better. In this study, teachers interact with students through WhatsApp, Facebook, and Noorspace platforms to provide students with visual materials such as videos, tapes, and makes art crafts online. In addition, they used many programs in the internet such as Google translate and YouTube to facilitate the learning process and motive students. Therefore, the awareness of teachers in using technology was a crucial reason.

Besides, teaching materials are essential, teachers were familiar with online tools, and provided different techniques like images, Videos, power point presentations, mini-lecture recordings using computer software to record video and audio. And learners were asked to create video or audio materials. They make learning more pleasant to the students because they offer a reality of experience, which stimulates self-activity and imagination on the part of the students.

Furthermore, motivation is one of the factors that influence success or failure in learning a language, particularly a second language or foreign language. In this study teachers encouraged and supported students using several forms of motivation. They were responding quickly to the students' questions within 24 hours which encourages focus and commitment and the student senses that someone 'cares'. Also, they provided timely feedback on assignments which gave them an opportunity to make connection with students. Moreover, teachers included constructive and personalized feedback on students' assignments which sends a message that students' learning has priority. So, the effective communication between teachers and students was excellent.

Finally, the home environment has a part to play in these results. Once covid-19 has attacked the country, and the education ministry has responded quickly to transfer education to online, parents have felt that they were responsible to be close with their children. In particular, private and public sectors have suspended the work in their places. Thus, parents had a penalty of time to take care of their kids. Therefore, parents' support role cannot be ignored.

In general, even though many studies have arrived into similar results, each country has its own context. Further, online performance has been impacted by students and teachers' abilities, but other conditions have affected it such as families and the government. Thus, Jordanian students have performed better once online is in place and their environment has supported them.

Limitation

The study has several limitations. Firstly, the sample size was selected from only one primary school. Ideally, a higher participation rate from several schools would have more robust evidence. Secondly, the sample of the study was limited to one group because the quick transfer for all educational institutions from face to face learning to online learning according to the spread of Covid 19, this switch limits the researcher to choose one group as a sample. So, researchers should explore within two groups experiment and control groups. Thirdly, due to this sudden transfer, the present study did not control the appropriateness of the material taught online since the time of switching to online was critical. Future research needs to be conducted to measure the quality of the material that suitable to distance education. Fourthly, traditional and online classes have different materials and exams which could have caused biased results. Further research should be held on the same materials, exams and time too. Fifthly, the courses also differed in the resources provided to students. The authors believe that the students in the online class were provided vary mechanisms to learn while the traditional course basically utilized lecture and discussion formats only. Future research should explore this issue to eliminate any bias and for deeper knowledge. Sixthly, one teacher taught the same sample using traditional and online methods, but to predict an accurate picture of the academic performance of students, future studies must consider the impact of different instructors. Another limitation of this study, it focused on elementary school, high school, and universities should be explored to know the difference across such levels. However, it would be interesting to explore other domains such as mathematics, science, and social science to compare results of the students' performance on the efficacy of the different methods of teaching.

Conclusion

The research found that there is a difference between face-to-face and online classes on students' performance. Students who enrolled in the online English subject class generally received higher grades scores than traditional class. However, we still have a lack of studies regarding appropriate teaching methods that enhance students' performance.

Although an online class offers an effective learning alternative, we should recognize that online learning has its unique advantages and disadvantages. In curriculum design, we need to consider how to exploit and integrate the comparative advantages of different modes of instruction to specific courses by offering not only fully face-to-face, nor online but also hybrid classes to overcome the constraints of time, place, and resources. We can utilize technologies such as social media and internet to engage students in order to develop their confidence and improve their cognitive and creative skills in academic sectors. Future researchers are advised to take diverse sample to examine the effects of using distance education in academic context on wider scale.

References

Adunola, O. (2011). The *Impact of Teachers' Teaching Methods on the Academic Performance of Primary School Pupils in Ijebu-Ode Local cut Area of Ogun State*. Ogun State, Nigeria: Ego Booster Books.

Alfahadi, M., Abdulrahman (2017). The Role of Social Media Sites in the Enhancement of English Language Learning at the University of Tabuk. *International Journal of English and Education*, *6*(3), 105–113.

Allen, M., Bourhis, J., Burrel, N., & Mabry, E. (2002).Comparing Student Satisfaction with Distance Education to Traditional Classrooms in Higher Education: A meta-analysis. *The American Journal of Distance Education*, 16(2), 83-97.

Ambelu, G. K. (2011). The effects of student-centered approach in improving students' graphical interpretation skills and conceptual understanding of kinematical motion. *Latin-American Journal of Physics Education*, *5*(2), 9.

Amry, A. B. (2014). The impact of WhatApp mobile social learning on the achievement and attitudes of female students compared with face to face learning in the classroom. *European Scientific Journal*, *10*(22), 116–136. http://eujournal.org/index.php/esj/article/view/3909

Awada, G. (2016). Effect of whatsapp on critique writing proficiency and perceptions toward learning. *Cogent Education*, *3*(1), 1–25. https://doi.org/10.1080/2331186X.2016.1264173

Ayeni, A. J. (2011). Teachers' Professional Development and Quality Assurance in Nigerian Secondary Schools. *World Journal of Education*, *1*(2), 143–149. https://doi.org/10.5430/wje.v1n2p143

Baradwaj, B., & Pal, S. (2011). Mining Educational Data to Analyze Students Performance. *International Journal of Advanced Computer Science and Applications*, *2*(6), 63–69. https://doi.org/10.14569/ijacsa.2011.020609

Barker, A. (2003). Faculty Development for Teaching Online: Educational and Technological Issues. *The Journal of Continuing Education in Nursing*, *34*(6), 273–278. https://doi.org/10.3928/0022-0124-20031101-10

Beaudoin, M. (1990). The instructor's changing role in distance education. *American Journal of Distance Education*, *4*(2), 21–29. https://doi.org/10.1080/08923649009526701

Besser, H. (1996). Issues and challenges for the distance independent environment. *Journal of the American Society for Information Science*, *47*(11), 817–820. https://doi.org/10.1002/(SICI)1097-4571(199611)47:11<817::AID-ASI4>3.0.CO;2-5

Block, K., Udermann, B., Felix, M., Reineke, D., & Murray, S. (2008). Achievement and Satisfaction in an Online versus a Traditional Health and Wellness course. *Journal of Online Learning and Teaching*, *4*(1), 1875–1878.

Bulach, c., Boothe, D., & Pickett, W. (2006). *Analyzing the Leadership Behavior of School Principals*. 1–13. Available from http://cnx.org/content/m13813/latest [13 August 2020].

Browne, E. (2005). Structural and pedagogic change in further and higher education: A case study approach. *Journal of Further and Higher Education*, *29*(1), 49–59. https://doi.org/10.1080/03098770500037754

Burdina, G. M., Krapotkina, I. E., & Nasyrova, L. G. (2019). Distance learning in elementary school classrooms: An emerging framework for contemporary practice. *International Journal of Instruction*, *12*(1), 1–16. https://doi.org/10.29333/iji.2019.1211a

Chang, Y. C. (2010). Students' perceptions of teaching styles and use of learning strategies. *Master's Thesis, University of Tennessee*, 1–75. http://trace.tennessee.edu/utk_gradthes/782

Cunningham, W. G., & Cordeiro, P. A. (2000). *Educational Administration: A problem – Based Approach*. Boston: Allyn & Bacon.

Davies, J., & Graff, M. (2005). Performance in e- Learning: Online Participation and Student Grades. *British Journal of Educational Technology*, *36*(4), 657–663.

Dell, C., Hobbs, S., & Miller, K. (2008). Effective online teacher preparation: Lessons learned. *Journal of Online Learning and Teaching*, *4*(4), 602–610. https://doi.org/10.1.1.575.7768

Demirci, N. (2007). University of Students' Perceptions of Web-based vs . Paper-based Homework in a General Physics Course. *Eurasia Journal of Mathematics, Science & Technology Education*, *3*(1), 29–34.

Elfaki, N. K., Abdulraheem, I., & Abdulrahim, R. (2019). *Impact of E-Learning vs Traditional Learning on Student ' s Performance and Attitude*. 76–82.

Elhay, A. A., & Hershkovitz, A. (2019). Teachers' perceptions of out-of-class communication, teacher-student relationship, and classroom environment. *Education and Information Technologies, 24*(1), 385-406. https://doi.org/10.1007/s10639-018-9782-7

Farooq, M. S., Chaudhry, A. H., Shafiq, M., & Berhanu, G. (2011). Factors Affecting Students' Quality of Academic Performance: A Case of Secondary School Level. *Journal of Quality and Technology Management*, *VII*(II), 1–14.

Fattah, S. F. E. S. A. (2015). The Effectiveness of Using WhatsApp Messenger as One of Mobile Learning Techniques to Develop Students' Writing Skills. *Journal of Education and Practice*, *6*(32), 115–127. http://libezproxy.open.ac.uk/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1083503&site=ehost-live&scope=site

Gagne, R. M. (1985). *The Conditions of Learning and Theory of Instruction*. (4th Ed.) New York, Holt: Rinehart & Winston.

Ganyaupfu, E. M. (2013). Teaching Methods and Students' Academic Performance. *International Journal of Humanities and Social Science Invention ISSN (Online*, *2*(9), 2319–7722. www.ijhssi.org

Gray, D. M., Brown, C., Maki, M. J., & Schulte, K. (2013). *Team 5 Authentic Assessment Chapter*. Google Docs. https://docs.google.com/document/d/1RRcdduTt3gvy584tBPt1vhPIbMeSelLKxtC1C7KOYIg/edit

Groves, J. L. (2001). Web-based tools in the hotel and restaurant classroom. *Journal of Hospitality and Tourism Education*, *13*(3–4), 60–66. https://doi.org/10.1080/10963758.2001.10696700

Hightower, A. M., Delgado, R. C., Lloyd, S. C., Wittenstein, R., Sellers, K., & Swanson, C. B. (2011). Improving student learning by supporting quality teaching : Key Issues, Effective Strategies. *Editorial Projects in Education, Inc.*, *December*, 56.

Horvitz, B. S. (2007). N. Dabbagh and B. Bannan-Ritland, Online Learning: Concepts, Strategies, and Application. *Educational Technology Research and Development*, *55*(6), 667–669. https://doi.org/10.1007/s11423-007-9071-4

Hurlbut, A. R. (2018). Online vs. traditional learning in teacher education: a comparison of student progress. *American Journal of Distance Education*, *32*(4), 248–266. https://doi.org/10.1080/08923647.2018.1509265

Hussain, J. A., & Al-Ghoul, E. N. (2015). The Effectiveness of Using Facebook on the Ninth Grade Students' Achievement of English in Jordan. *Review of European Studies*, *7*(11). https://doi.org/10.5539/res.v7n11p318

Jordanian Ministry of Education (2004). *Assessment Strategies and Tools: Theoretical framework*. Retrieved August 15, 2020 from:

http://www.moe.gov.jo/sites/default/files/ltr_lnzry_ljz_lwl.pdf

Justina, M. (2016). Use of WhatsApp to Enhance Reading and Writing Skills at Undergraduate College Level. *International Journal of English Language and Literature Studies*, *16*(8), 47–

60. https://doi.org/10.18488/journal.23.2019.82.61.68

Karayan, S.S. & Crowe, J.A. (1997). Student Perceptions of Electronic Discussion Groups. T.H.E. Journal*: Technological Horizons in Education*, 24(9), 69-71. Retrieved August 11, 2020 from https://www.learntechlib.org/p/82479/.

Kirschner, P. A., & Karpinski, A. C. (2010). Facebook® and academic performance. *Computers in Human Behavior*, *26*(6), 1237–1245. https://doi.org/10.1016/j.chb.2010.03.024

Martha, K. (2009). Factors Affecting Academic Performance of Undergraduate Students at Uganda Christian university. *Master's Thesis, Management of Makerere University.*

McLester, S. (2002). Virtual Learning Takes a Front Row Seat. *Technology & Learning*, *22*(8), 24–26.

Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teachers College Record*, *115*(3).

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). Evaluation of Evidence-Based Practices in Online Learning: A Meta- Analysis and Review of Online Learning Studies. *Structure*, 66. www.ed.gov/about/offices/list/opepd/ppss/reports.html

Mehmood, S., & Taswir, T. (2013). *The Effects of Social Networking Sites on the Academic Performance of Students in College of Applied Sciences , Nizwa , Oman . 2*(1), 111–125.

Mingle, J., & Adams, M. (2015). Social media network participation and academic performance in senior high schools in Ghana. *Library Philosophy and Practice*, *2015*(1).

Najafi, H., & Tridane, A. (2015). Improving Instructor-Student Communication Using Whatsapp: A Pilot Study. *Proceedings - 2015 International Conference on Developments in ESystems Engineering, DeSE 2015*, 171–175. https://doi.org/10.1109/DeSE.2015.41

Narad, A., & Abdullah, B. (2016). Academic performance of senior secondary school students: Influence of parental encouragement and school environment. *Rupkatha Journal on Interdisciplinary Studies in Humanities*, *8*(2), 12–19. https://doi.org/10.21659/rupkatha.v8n2.02

Ni, A. Y. (2013). Comparing the Effectiveness of Classroom and Online Learning: Teaching Research Methods. *Journal of Public Affairs Education*, *19*(2), 199–215. https://doi.org/10.1080/15236803.2013.12001730

Nykiel, R. A. (1999). Effective teaching techniques for alternative delivery programs. *Journal of Hospitality and Tourism Education*, *11*(1), 8–11. https://doi.org/10.1080/10963758.1999.10685215

Partlow, C. G., & Woods, R. H. (1996). Will Hospitality Education Go the Distance? *Hospitality & Tourism Educator*, *8*(1), 80. https://doi.org/10.1080/23298758.1996.10685723

Petrović, N., Petrović, D., Jeremić, V., Milenković, N., & Cirović, M. (2012). Possible Educational use of Facebook in Higher Environmental Education. University of Belgrade Serbia. *ICICTE 2012 Proceedings*, *1*(November), 355–362.

Rosenberg, H., & Asterhan, C. S. C. (2018). " W Hats a Pp , T Eacher ?" - Student Perspectives on Teacher- Student Whatsapp Interactions in Secondary Schools. *Journal of Information Technology Education Research*, *4081*, 205–226.

Saeedi, S., Sayed (2019). The Role of Online Media in Language Learning in terms of Special Focus on Journalism. *International Journal of English and Education*, *8*(4), 97–103.

Sekaran, U. (2006). *Research Methods For Business: A Skill Building Approach.* John Wiley & Sons.

Shahid, S., & Shaikh, M. A. (2019). Impact of " WhatsApp Chaupal " on the Academic Performance of Graduate Students of Karachi – A Case Study. *FWU Journal of Social Sciences*, *13*(2), 94–107.

Singh, P. . S., Malik, S., Singh, P. (2016). Factors Affecting Academic Performance of Students. *Indian Journal of Research*, *5*(4), 176–178.

Smith, D., & Hardaker, G. (2000). E-Learning innovation through the implementation of an internet supported learning environment. *Educational Technology and Society*, *3*(3), 422–432.

Song, L., & Hill, J. R. (2007). A Conceptual Model for Understanding Self-Directed Learning in Online Environments. *Journal of Interactive Online Learning*, *6*(1), 27–42. https://pdfs.semanticscholar.org/92b2/b47bdc0836b2b8caf2e397b0e6216ea46bd2.pdf

Volery, T., & Lord, D. (2000). Critical success factors in online education. *International Journal of Educational Management*, *14*(5), 216–223. https://doi.org/10.1108/09513540010344731

Wrenn, V. (2015). Effects of Traditional and Online Instructional Models on Student Achievement Outcomes. *Dissertation, Liberty University.*

Wuensch, K., Aziz, S., Ozan, E., Kishore, M. & Tabrizi, M.H.N. (2008). Pedagogical Characteristics of Online and Face-to-Face Classes. International Journal on E-Learning, 7(3), 523-532. Waynesville, NC USA: Association for the Advancement of Computing in Education (AACE). Retrieved August 11, 2020 from https://www.learntechlib.org/primary/p/24201/.

Zainuddin, S. A., Abdullah, A., & Downe, A. G. (2011). Social Networking Sites For Learning : A Review From Vygotskian Perspective. *International Conference on Telecommunication Technology and Applications*, *5*, 41–46.

Zeeb, M. S. (2004). Improving Student Success Through Matching Learning and Teaching Styles *(Master's Thesis, University of Phoenix)*. Retrieved from

https://www.creativelearningcentre.com/downloads/lsia/Zeeb%20LSA%20research%20pilot%20edited%20US.pdf