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Original Article

Effectiveness of E-Curriculum in Social Networks during the COVID-19 Pandemic: Parents', Teachers' and Students' Perspectives

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ABSTRACT

Background: This study aimed to determine the effectiveness of e-curriculum in social networks from the perspectives of parents, teachers, and students during the COVID-19 pandemic.

Methods: This was a descriptive study using a survey method in 2020-2021 academic year. The statistical population consisted of three groups of teachers, parents, and primary school students in Dehloran County, Iran. The sampling method included a census of teachers (97 teachers) and random cluster sampling of parents and students (150 parents and 340 students). The data collection tool was a questionnaire for all three groups. Kolmogorov-Smirnov test and one-sample t-test were used to analyze the data.

Results: In assessing the effectiveness of e-curriculum in social networks based on the education triangle (teachers, parents, and students) different levels of effectiveness were reported ($P<0.05$), in the sense that the elements of content, teaching strategies, and evaluation methods were in a desirable condition only for teachers and parents, but not for students. Only the element of objectives received favorable scores from all three groups (teachers=3.73, parents=3.42, and students=3.06).

Conclusion: Educational policymakers and planners should take note of different perspectives in the education triangle when evaluating the effectiveness of e-curriculums for primary schools during the COVID-19 pandemic.

Keywords: E-curriculum, E-learning, Curriculum, Social networks, COVID-19

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Introduction

COVID-19 outbreak has had a far-reaching impact on all human activities, including in the area of education and learning. In the meantime, the new circumstances have led to the emergence of e-learning as a potentially effective approach in the face of the present crisis. Most researchers use the term e-learning interchangeably with online learning, that is, learning accomplished via the Internet or other computer networks, using the Web and multimedia materials, synchronous and asynchronous learning networks, and/or collaborative learning systems (1). E-learning, as a direct product of the integration of technology and education, has emerged as a powerful medium of learning that makes use of Internet technologies

(2). Some important benefits of e-learning include eliminating the gaps, reducing costs, and managing time to learn and acquire the necessary skills (3). Yogita and Ansari (4) acknowledge that in the learning ecosystem of the 21st century, e-learning has emerged as a new paradigm of teaching-learning process, although it is still unknown exactly how it will affect educational careers (5). This phenomenon conceptually represents any form of e-learning (6) and is a subset of educational technology (7).

In general, curriculum can be defined as all the knowledge, skills, opportunities, discussions, programs and individual or group activities that the learner experiences, both formally and informally, in an educational environment. Experts may not have identical views on the constituent elements of a curriculum. For example, Eisner (8) believes that curriculum elements include purpose, content, learning opportunities, content organization, presentation method, response and evaluation method. Tyler (9) highlights the objectives, content, and teaching and assessment strategies. For Akker (10), however, the elements of the curriculum include logic, purpose, content, learning activities, teachers' role, materials and resources, grouping, time, location and evaluation. Klein (11) also points out the elements of objectives, content, materials and resources, activities, teaching strategies, evaluation, grouping, time and location.

Today, the lockdown circumstances have compelled many educators to hold their courses in social networks. These networks have emerged as a significant field of study within computer sciences (12). They provide a platform for sharing information and free expression (13). The goal of social networks is to help establish connections among people (online and offline), to connect people to their communities of interest, and to provide a forum for promoting culture (14). In this respect, many studies have examined the efficacy of e-learning and social networks in educational environments.

In their research, Komasi et al. (15) concluded that deploying virtual social networks can be an opportunity to improve teaching and learning. In another study, Dartaj et al. (16) pointed to the positive and significant relationship between the use of social networks and the quality of learning experiences among students. In their study on the possibility of holding e-learning courses for students with physical disabilities, Mirkamali et al. (17) reported that in terms of infrastructure, content readiness, and financial resources the schools are in a poor condition. Assareh et al. (18) in their evaluation of smart schools program based on CIPP model, concluded that more than half of the teachers found the results unsuccessful while almost as many students considered it successful. In a study focusing on e-learning styles and their implications for designing e-learning in secondary schools, Cooze and Barbour (19) concluded that effective e-learning requires attention to learning styles and rigorous theories of learning. Coopasami et al. (20), in their study of e-learning readiness amongst nursing students at the Durban University of Technology, concluded that, while students' psychological readiness for e-learning was high, they struggled with the lack of technological infrastructure and equipment. In a study entitled "Electronic Curriculum Implementation at North American Dental Schools", Hendricson et al. (21) argued that the e-curriculum planners should pay close attention to implementation problems that occur when innovation efforts fail. Greenhow et al. (22) In a study entitled " Online social networks and learning", concluded that social network sites can provide "an emotional outlet for school-related stress, validation of creative work, peer-alumni support for school-life transitions, and help with school-related tasks", and "online social networking can stimulate social and civic benefits, online and offline, which has implications for education."

COVID-19 is affecting social activities in many countries around the world (23). The pandemic and the subsequent lockdowns have extensively changed social interactions, and education is no exception (24). Therefore, the new

circumstances have underscored the inevitable necessity of adopting e-learning in education. However, this disease did drastically change all aspects of human life in the very early stages, and in many cases the experts in the fields of education and e-learning literally failed to keep pace with the rapid rate of change in this critical period. Therefore, many educators started using social media (WhatsApp, Telegram, Instagram, etc.) to educate students before the required infrastructure was in place. The use of social networks in education is not limited to the interactions between teachers and students. One should also take account of parents' influence on students' use of these networks for educational purposes. In recent years, parents have been regarded as one of the three components of the education triangle (Figure 1), and considerable efforts have been made to interact with them. Given the fact that social networks are highly favored in the current circumstances, it is necessary to determine the effectiveness of the curriculums that incorporate these networks in the teaching-learning process. For that purpose, one should take into account all the involved parties in this process, namely the teachers, parents, and students. In this pandemic era, it appears necessary to take account of e-learning when adopting solutions in an education system. Accordingly, one should be aware of e-learning status in a country like Iran in order to enhance its efficiency and to respond appropriately to the country's growing demands (25). A vital step in this process is to ensure the effectiveness of curriculum elements in line with the characteristics, context, and specific background of the adopted e-learning system. Therefore, this study aims to determine the effectiveness of the elementary school e-curriculum in social networks based on the education triangle during the COVID-19 pandemic.

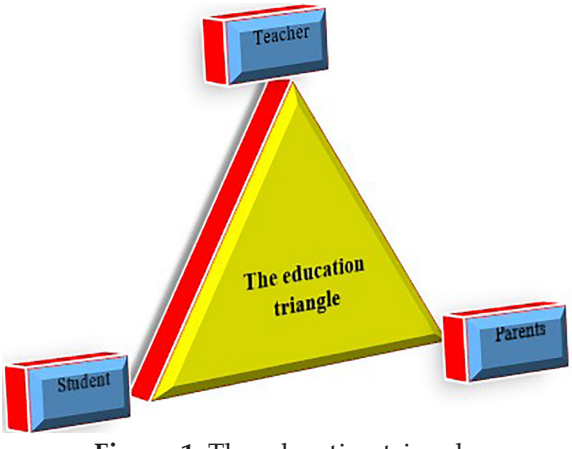

Figure 1. The education triangle

Methods

Study Design

This was a quantitative study, and in terms of purpose it was an applied research using a descriptive-survey method.

Setting

The study was conducted during April-June 2020 in Dehloran County, Iran.

Participants

The statistical population included all primary school teachers (n=97), all parents of primary school students (despite several follow-ups, the exact number of parents could not be determined), and all primary students in the County (n=1500).

The sample size of the teachers included their entire population (n=97). As for the parents, the sample size was determined using Cohen's formula (n=150). The student sample size was determined using the Cochran formula (n=304). The sampling method involved a census of teachers and random cluster sampling of parents and students. It was performed by selecting a single class from each school, and then a questionnaire was distributed among parents and students in coordination with school principals and teachers. The inclusion criteria in this study included elementary students of third through sixth grade, parents of students in these grades, teachers at these grade levels, and willingness to participate in the study. Those who submitted incomplete questionnaires were excluded.

Data Collection Tool

The data collection tool in this study was a researcher-made questionnaire intended to determine the effectiveness of e-curriculum in social networks from the perspectives of parents, teachers and students during

the COVID-19 pandemic. It was based on Tyler's 28-item four-element model (purpose, content, teaching method and evaluation). A qualitative approach was used to determine the face and content validity of the questionnaire. To establish its face validity, 4 elementary teachers and 2 experts in educational sciences were consulted for their opinions on the level of difficulty, disproportion, and ambiguity. In terms of content validity, 3 educational experts were asked to provide the necessary feedback after reviewing the questionnaire based on grammatical accuracy, choice of vocabulary, and proper phrasing. Finally, all the necessary modifications were applied and a 25-item questionnaire with five-point Likert scale (0=very high, 1=high, 2=medium, 3=low, 4=never) was designed. The questionnaire had four components: purpose (6 items), content (6 items), teaching method (7 items), and evaluation (6 items). The reliability of the questionnaire, as measured by Cronbach's alpha, was measured at 0.83. The questionnaires were designed using Google Drive (the online form), and were distributed among the respondents on Telegram and WhatsApp applications. Several reminders were issued to the respondents, and after a one-month interval, 61 teachers, 148 parents, and 103 students returned the questionnaires.

Statistical Methods

The collected data were analyzed in SPSS 23 using descriptive and inferential statistics. In the descriptive statistics section, the standard deviation, mean, frequency, etc. were calculated for data analysis. In terms of inferential statistics, one sample t-test was used after ensuring the normality of the data using the Kolmogorov-Smirnov test.

Ethical Considerations

In compliance with ethical principles, this study was conducted with the consent of the participants. Researchers introduced themselves and explained the aims of the study. Participants were also assured that all the collected information would remain confidential.

Results

Table 1 presents the demographic information on the participants. A total of 94 eligible teachers were enrolled in the study. 58 percent of the teachers were female and 42% male, while 81% held bachelor's degrees, and

Table 1. Demographic characteristics of the study samples

Teachers	Gender	Female	56	0.58
		Male	41	0.42
	Academic Degrees	Bachelor	79	0.81
		Master	18	0.19
		PhD	0	0.0
Parents	Gender	Female	97	0.65
		Male	53	0.35
Students	Gender	Female	168	0.55
		Male	136	0.45
	Grades	Third	84	0.27
		Fourth	73	0.24
		Fifth	69	0.23
		Sixth	78	0.26

Table 2. The element of objectives in e-curriculum based on the education triangle

Variable	Target group	Theoretical mean	Actual mean	Standard deviation	df	t	Significance level
The objectives element in the e-curriculum	Teachers	3	3.73	0.27167	60	21.208	<0.001
	Parents	3	3.42	0.52445	147	9.874	<0.001
	Students	3	3.06	0.84793	102	-0.222	0.474

the rest held master's degrees. The number of eligible parents enrolled in the study was 150. Of these, 65% were female and 35% were male. Also, the number of eligible students stood at 304; 45 percent of them were male and 55% were female. Of these, 27% were in the third grade, 24% in fourth grade, 23% in fifth grade, and 26% in sixth grade. In the end, 36 teachers, 2 parents, and 201 students were excluded, for they declined to complete the questionnaires.

Research Question 1: What is the status of the element of "objectives" in the e-curriculum of elementary schools during the COVID-19 pandemic (based on the education triangle)?

Table 2 shows that the effectiveness of the objectives element in e-curriculum of primary schools was significant with mean scores of 3.73, 3.42 and 3.06 from the perspectives of teachers, parents and students respectively (level of error=0.05). Therefore, considering that the mean scores of all three groups were higher than the theoretical mean (3), the element of objectives in the e-curriculum of primary schools is, according to the education triangle (teachers, parents, and students), in a favorable condition.

Research Question 2: What is the status of the element of "content" in the e-curriculum of primary schools during the COVID-19 pandemic (based on the education triangle)?

As indicated in Table 3, the effectiveness of the content element in e-curriculum of primary schools was significant with mean scores of 3.24, 3.72 and 2.89 from the perspectives of teachers, parents and students respectively (level of error=0.05). As evident, the mean scores of teachers and parents were higher than the theoretical mean (3). Therefore, the element of content in the e-curriculum of primary schools was in a favorable condition according to these two groups. However, the students' mean score was lower than the theoretical mean (3), indicating that they did not find the content element in a favorable condition.

Research Question 3: What is the status of the element of "teaching strategies" in the e-curriculum of primary schools during the COVID-19 pandemic (based on the education triangle)?

Table 4 illustrates that the effectiveness of the element of "teaching strategies" in e-curriculum of primary schools was significant with mean scores of 3.26, 3.31 and 1.84 from the perspectives of teachers, parents and students respectively (level of error=0.05). As evident, the mean scores of

Table 3. The element of content in e-curriculum based on the education triangle

Variable	Target group	Theoretical mean	Actual mean	Standard deviation	df	t	Significance level
Content element in the e-curriculum	Teachers	3	3.24	0.28619	60	20.132	<0.001
	Parents	3	3.72	0.61359	147	11.039	<0.001
	Students	3	2.89	0.91192	102	-248.3	<0.001

Table 4. The element of teaching strategies in e-curriculum based on the education triangle

Variable	Target group	Theoretical mean	Actual mean	Standard deviation	df	t	Significance level
The element of teaching strategies in e-curriculum	Teachers	3	3.26	0.357593	60	14.251	<0.001
	Parents	3	3.31	0.56864	147	6.707	<0.001
	Students	3	1.84	0.52053	102	-22.450	<0.001

Table 5. The element of evaluation in e-curriculum based on the education triangle

Variable	Target group	Theoretical mean	Actual mean	Standard deviation	df	t	Significance level
Evaluation element in e-curriculum	Teachers	3	3.70	0.28324	60	19.438	<0.001
	Parents	3	3.27	0.67419	147	5.029	<0.001
	Students	3	2.31	0.51147	102	-13.678	<0.001

teachers and parents were higher than the theoretical mean (3), meaning that the element of teaching strategies in the e-curriculum of primary schools was deemed by these two groups to be in a favorable condition. However, the students' mean score was lower than the theoretical mean (3), indicating that they did not consider the element of teaching strategies to be in a favorable condition.

Research Question 4: What is the status of the element of "evaluation" in the e-curriculum of primary schools during the COVID-19 pandemic (based on the education triangle)?

According to Table 5, the effectiveness of the evaluation element in e-curriculum of primary schools was significant with mean scores of 3.70, 3.27 and 2.31 from the perspectives of teachers, parents and students respectively (level of error=0.05). As is clear here, the mean scores of teachers and parents were higher than the theoretical mean (3), meaning that these two groups found the element of evaluation in a favorable condition. However, the students' mean score fell short of the theoretical mean (3), thereby they did not believe that the element of evaluation was in a favorable condition.

Discussion

The present study aimed to assess the e-curriculum of primary schools in social networks based on the views presented in the education triangle (teachers, parents, and students) in order to determine its effectiveness during the COVID-19 pandemic. The results show that there were differences in the overall views of the three groups regarding the effectiveness of e-curriculum in social networks in primary schools; teachers and parents had a generally favorable opinion of its effectiveness, whereas the students did not find the e-curriculum presented in social networks as effective as it should be.

Findings revealed that, from the perspective of the education triangle, the element of objectives in the e-curriculum was in a favorable condition in terms of its effectiveness in social networks. This finding was in consistence with that of Greenhow et al. (22). Therefore, to improve the educational objectives, teachers can engage with students' parents in areas other than textbook contents. For instance, teachers can cooperate with parents in dealing with current social issues such as quarantine conditions and the associated health issues in the face of coronavirus outbreak. They can also take account of students' interests and their cognitive construction.

Other findings show that the content element of the e-curriculum was deemed by teachers and parents to be effective and in a favorable condition. However, the effectiveness of this element was not in the favorable condition from the students' point of view. Mirkamali's (17) study did also underscore the low quality of contents in e-curriculums. It can be argued that to improve the effectiveness of the content element, teachers should pay attention to issues such as providing meaningful content, factoring in students' cognitive construction, presenting content based on scientific structure, and establishing a link between content and current issues.

Other results in this study show that parents and teachers had favorable opinions about the element of teaching strategies and its effectiveness in the e-curriculum of primary schools in social networks during the pandemic period. However, the mean score obtained from the students' views fell below the theoretical mean. The findings of Cooze and Barbour (19) were consistent with the students' views regarding the low effectiveness of teaching strategies. Accordingly, in addition to facilitating teachers' engagement with parents to make optimal use of teaching strategies, efforts should be focused on encouraging students to learn the activities, using various materials and resources, enhancing students' activities and participation, facilitating teachers' role in the teaching process, and creating opportunities for student interaction.

Findings of the research also demonstrated that the element of evaluation in the e-curriculum of elementary schools in social networks was, according to the teachers and parents, in a relatively favorable condition during the

pandemic period. However, this element was not deemed effective and favorable from the students' perspective. In order to improve the effectiveness of evaluation in e-curriculums, teachers should consider evaluation as a part of learners' experience as well as integrating a feedback mechanism to improve the learning process. Several approaches such as the rating of student participation, peer evaluation, e-folder work and project activities should be emphasized in this regard.

Accordingly, besides an effective engagement with parents, teachers need to take account of student's age, attitudes and cognitive development, as well as their needs and interests concerning each of the elements of the e-curriculum. In this regard, policymakers and educational planners can take effective steps by developing an integrated system that addresses the needs of the education triangle. This will lead to more fruitful interactions and development of the programs that improve teachers' skills in e-curriculum.

Limitations

The limitations of this study include inadequately filled questionnaires, small sample size, the respondents' bias and prejudice, as well as limitations in terms of location and timing of the study. For future research, it is recommended that the same study procedure be applied over a longer period and with a larger sample size.

Ethical Considerations

In this study, the following ethical issues were considered: the study was approved by Dezful Farhangian University; explanations were provided to the students in advance of the study and they were reassured about the confidentiality of their information.

Conflict of Interest

The authors declare that there is no conflict of interest in this study.

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References

1 Teo TS, Kim SL, Jiang L. E-learning implementation in south Korea: Integrating Effectiveness and Legitimacy Perspectives. Information Systems Frontiers. 2020 Apr;22(2):511-28. doi: 10.1007/s10796-018-9874-3

2 Al-Fraihat D, Joy M, Sinclair J. Evaluating E-learning systems success: An empirical study. Computers in Human Behavior. 2020 Jan 1; 102:67-86. doi: 10.1016/j.chb.2019.08.004.

3 Wong AO, Sixl-Daniell K. The importance of e-learning as a teaching and learning approach in emerging markets. International Journal of Advanced Corporate Learning (iJAC). 2017 Mar 30;10(1):45-54. doi: 10.3991/ijac.v10i1.6471

4 Yogita N, Ansari MA. A Comparative Study of e-Learning Readiness of Two State Agricultural Universities (SAUs) in Northern India. Journal homepage. 2020 Apr;9(7): 1-11. doi: 10.20546/ijcmas.2020.907.xx

5 Kullenberg G. The virtual university approach. Ocean & coastal management. 2002 Jan 1;45(9-10):709-18. doi: 10.1016/S0964-5691(02)00095-9

6 Koka A, Suppan L, Cottet P, Carrera E, Stuby L, Suppan M. Teaching the National Institutes of Health Stroke Scale to Paramedics (E-Learning vs Video): Randomized Controlled Trial. Journal of Medical Internet Research. 2020;22(6):e18358. doi: 10.2196/18358

7 Al-Fraihat D, Joy M, Sinclair J. Evaluating E-learning systems success: An empirical study. Computers in Human Behavior. 2020 Jan 1;102:67-86. doi: 10.1016/j.chb.2019.08.004

8 Ortega-Auquilla D, Fajardo-Pacheco I,

Cabrera-Vintimilla J, Siguenza-Garzón P. A comprehensive overview on the fundamentals of curriculum development: understanding key interrelated theoretical aspects. Revista Boletín Redipe. 2019 Nov 1;8(11):148-68. doi: 10.36260/rbr.v8i11.866

9 Wraga WG. Understanding the Tyler rationale: Basic Principles of Curriculum and Instruction in historical context. Espacio, Tiempo y Educación. 2017 Jul 1;4(2):227-52. doi: 10.14516/ete.156

10 Ansyari MF. Developing a rubric for assessing pre-service English teacher struggles with instructional planning. Cogent Education. 2018 Jan 1;5(1):1507175. doi: 10.1080/2331186X.2018.1507175

11 Klein MF. A perspective on the gap between curriculum theory and practice. Theory into Practice. 1992 Jun 1;31(3):191-7. doi: 10.1080/00405849209543542.

12 Musiał K, Kazienko P. Social networks on the internet. World Wide Web. 2013 Jan 1;16(1):31-72. doi: 10.1007/s11280-011-0155-z

13 Halevy A, Ferrer CC, Ma H, Ozertem U, Pantel P, Saeidi M, Silvestri F, Stoyanov V. Preserving Integrity in Online Social Networks. arXiv preprint arXiv:2009.10311. 2020 Sep 22. doi: 10.1386/ajms.6.2.207_1

14 Villi M, Noguera-Vivo JM. Sharing media content in social media: The challenges and opportunities of user-distributed content (UDC). Journal of Applied Journalism & Media Studies. 2017 Jun 1;6(2):207-23. doi: 10.1386/ajms.6.2.207_1

15 komasi M, aliabadi K, zareii zavaraki E. Comparing The Method of Teaching Through Social Network And Face Training And Its Impact On The Level Of Learning And Retention Of Adult Students In The Social Sciences. Educ Strategy Med Sci. 2019; 11 (5) :25-32. doi: 10.29252/edcbmj.11.05.03

16 Dartaj F, Rajabian M, Asadi R. Study of the relationship between the use of virtual social networks and the quality of learning experiences in students. Journal of Research in Educational Systems, 2016; 10(33): 212-229.

17 Mirkamali S, arjmandnia A, Nasirian A. Surveying the Feasibility for Holding E-learning Courses for Students with Physical Disability in Retarded Student Schools in Kerman. TLR. 2015; 2 (5) :79-96

18 Assareh, Ph.D. A R, Modaresi Saryazdi A, Bahadoran, Ph.D. H R. Evaluation of the Implementation of Smart Schools Program in Yazd Based on CIPP Model. QJFR. 2015;11(4):37-55.

19 Cooze M, Barbour M. Learning Styles: A Focus Upon E-learning Practices and Pedagogy and Their Implications for Designing E-learning for Secondary School Students in Newfoundland and Labrador. Malaysian Online Journal of Instructional Technology. 2005;2(1):1823-1144

20 Coopasami M, Knight S, Pete M. e-Learning readiness amongst nursing students at the Durban University of Technology. health sa gesondheid. 2017;22(1):300-6. doi: 10.1016/j.hsag.2017.04.003

21 Hendricson WD, Panagakos F, Eisenberg E, McDonald J, Guest G, Jones P, Johnson L, Cintron L. Electronic curriculum implementation at North American dental schools. Journal of dental education. 2004 Oct;68(10):1041-57. doi: 10.1002/j.0022-0337.2004.68.10.tb03851.x

22 Greenhow C. Online social networks and learning. On the horizon. 2011 Feb 1. doi: 10.1108/10748121111107663

23 Lone SA, Ahmad A. COVID-19 pandemic–An African perspective. Emerging Microbes & Infections. 2020 May 28:1-28. doi: 10.1080/22221751.2020.1775132

24 Subedi S, Nayaju S, Subedi S, Shah SK, Shah JM. Impact of E-learning during COVID-19 pandemic among nursing students and teachers of Nepal. Intl J of Sci Healthcare Res. 2020;5(3):68-76. doi: inrein.com/10.4444/ijshr.1003/495

25 Regmi K, Jones L. A systematic review of the factors–enablers and barriers–affecting e-learning in health sciences education. BMC medical education. 2020 Dec;20:1-8. doi: 10.1186/s12909-020-02007-6