

CURRENT SITUATION AND ISSUES OF DIGITAL TRANSFORMATION IN EDUCATION AT A HIGH SCHOOL IN HUNG YEN PROVINCE

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ARTICLE INFO		ABSTRACT
Received:	23/5/2022	The application of information technology in teaching and learning activities has gradually changed the traditional pedagogical method to an active teaching approach, helping teachers and learners promote their thoughts, creativity, initiative, and effectiveness. This study used a mixed-methods approach to investigate the viewpoints of 57 eleventh-graders and 17 teachers at Pham Ngu Lao high school in Hung Yen province. The results reveal that eleventh-graders were fully aware of the implementation of digitalized documents in learning and teaching over the online school platform. They well prepared their own electronic devices to get connected to the online learning system, but they were not given a proper instruction of using online learning system. For teachers' perspectives, they were in favour of the process of converting their teaching activities with the support of digitalized procedures. Besides, they saw it necessary to be trained how to exploit the digitalized infrastructures for their actual teaching activities. The findings of this research would help the education administrators, teachers, and students understand clearly the flaws during the digitalized process of application in education. In addition, the findings are also served as resourceful references for the future studies relative to the digital transformation in education.
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THỰC TRẠNG VÀ VẤN ĐỀ CHUYỂN ĐỔI SỐ TRONG GIÁO DỤC TẠI TRƯỜNG TRUNG HỌC PHỔ THÔNG TỈNH HƯNG YÊN HIỆN NAY

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THÔNG TIN BÀI BÁO		TÓM TẮT
Ngày nhận bài:	23/5/2022	Ứng dụng công nghệ thông tin trong dạy và học đã từng bước thay đổi phương pháp sư phạm truyền thống sang phương pháp dạy học tích cực, giúp người dạy và người học phát huy tư tưởng, sáng tạo, chủ động, hiệu quả. Nghiên cứu này sử dụng phương pháp tiếp cận hỗn hợp để khảo sát quan điểm của 57 học sinh lớp 11 và 17 giáo viên tại trường Trung học phổ thông Phạm Ngũ Lão tỉnh Hưng Yên. Kết quả cho thấy học sinh lớp 11 nhận thức đầy đủ về việc triển khai sử dụng các tài liệu được số hóa trong học tập và giảng dạy qua nền tảng học trực tuyến của nhà trường. Học sinh đã chuẩn bị tốt các thiết bị điện tử của mình để kết nối với hệ thống học trực tuyến, nhưng học sinh cũng cho rằng họ không được hướng dẫn sử dụng hệ thống học trực tuyến một cách thấu đáo. Đối với quan điểm của giáo viên thì họ ủng hộ quá trình chuyển đổi các hoạt động giảng dạy của mình với sự hỗ trợ của các quy trình số hóa. Bên cạnh đó, giáo viên cho rằng họ cần phải được đào tạo cách khai thác cơ sở hạ tầng số hóa cho các hoạt động giảng dạy thực tế của họ. Những phát hiện của nghiên cứu này sẽ giúp các nhà quản lý giáo dục, giáo viên và học sinh hiểu rõ những thiếu sót trong quá trình ứng dụng số hóa trong giáo dục. Ngoài ra, các phát hiện cũng được dùng làm tài liệu tham khảo hữu ích cho các nghiên cứu trong tương lai liên quan đến chuyển đổi kỹ thuật số trong giáo dục.
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1. Introduction

The fast-track development of information technology (IT) has caused far-reaching consequences for all aspects of life in recent years. In reality, the global integration has its footprints to all nations and social sectors with a high demand of using information and computer technology (ICT) to handle most situations, especially in the age of the fourth industrial revolution or commonly called Industry 4.0 [1]. As a result, digital transformation plays a crucial role in satisfying the requirements of human connectedness in improving the quality of life. It is presumably understood that digital transformation refers to the incorporation of computer-based technology into facilitating high skilled work. It is worth noting that digital transformation is constructed to stand on three main pillars, namely digital government, digital economy, and digital society, which greatly affects all agencies, units, and localities. Obviously, the primary purposes of digital transformation are beneficial to people and businesses who function as the center, the subject, the objective, and the driving force of digital transformation. To undergo successfully digital transformation process, it is necessary to mobilize and encourage people as well as businesses to take joint action on contributing to the achievements of predetermined objectives in digital transformation. To keep up with the trend of digital transformation development, a typical decision on national digital transformation program to 2025, orientation to 2030 was issued Decision No. 749/QĐ-TTg June 3rd, 2020 by Prime Minister [2] in which it emphasizes a dual purpose of both developing digital government, digital economy, digital society and establishing Vietnamese digital businesses with global capacity.

With the continuous development of technology, digital transformation becomes the trend of society and especially in education. The application of technology in education plays a vital role, which creates a turning point in the development of education. Digital transformation in the education sector means enhancing basically its learning environment and administrative system by applying new technologies to reduce costs and meet the growing demands of all the participants of in the education process [3]. In other words, digital transformation in education is the application of advanced technologies to enhance the learner's experience, improve teaching methods, and create the most convenient learning environment [4]. Consequently, digital transformation applications possibly create a smart educational model, thereby making learning knowledge simpler and easier for learners. The explosion of technology platforms has created favorable conditions to impart knowledge and develop learners' self-learning ability without being limited in time and space [5].

Considering the nature of digital transformation in the field of education, it primarily involves developing a platform in order to meet the requirements of both supporting distance learning and teaching and thoroughly applying digital technologies to administrative operations. Besides, digital transformation in education also refers to the process of digitizing documents and curriculum to be available on a platform which is ready to share teaching and learning resources both directly and online. Moreover, digital transformation in education adopts the application of the model of integrated science - technology - engineering - math and arts, business and enterprise integrated education model (STEM/ STEAM/ STEAME education), which bridges the gap in theory and practice. On May 10th, 2022, Minister of Education and Training [6] issued a plan to strengthen the application of information technology and digital transformation in education and training for the period 2022-2025. The primary objectives of this decision are to identify key tasks and solutions to enhance the application of information technology and digital transformation in education and training in the period 2022-2025, and to serve as a basis for units under the Ministry of Education and Training to develop specific implementation programs and projects, organize the implementation, inspect, supervise and evaluate the implementation of Decision No. 749/QĐ-TTg. Currently, Pham Ngu Lao high school has initiated to converse all school administrative activities from paperwork to digitalized documents, employing step-by-step learning management system (LMS) in teaching and learning. The school has implemented

Microsoft teams in teaching and learning with a partial trial curriculum according to the directives from Hung Yen Department of Education and Training (HDET). Besides, the school has fully taken command of an Enetviet application as a compulsory requirement from HDET to manage all school activities and synchronize school reporting systems to its subordinates and those concerned. In general, many studies [7]-[10] have been conducted to discuss the role of digital transformation in the field of education. However, few studies have been done to investigate how teachers and learner are aware of the conversion of digital transformation in teaching and learning, especially at the general education level. This study was implemented to answer the following questions:

1. How do high school learners perceive the application of online learning?
2. What are teachers' perspectives towards the influential digital transmission in teaching practices?

This study would highlight the role of online teaching and learning mode, which was a part of digital transformation in education, and served as essential premises for educational administrators to reform their educational policies to meet the digital transformation objectives, for teachers to get ready to adapt their pedagogical approach to new situations, and for future researchers to confer this research findings to incorporate in their prospective studies.

2. Materials and Methods

2.1. Research design

The study used a mix-method approach - qualitative and quantitative approaches - involved with both 57 eleventh-graders via a Vietnamese questionnaire and a semi-structure interview conducted with 17 teachers during the second term of the academic year 2021-2022 at Pham Ngu Lao High School. The printouts of Vietnamese questionnaire version were floated among K-11 students, simultaneously the semi-structured interview with 17 teachers were carried out. Both sources were carefully analysed by using SPSS v.25 application for treating the data from the questionnaire and Nvivo application for transcribing semi-structured interviews.

2.2. Participants

For the ease of choosing the samples of the study, 57 eleventh-graders' participants were selected by using the non-probability convenience sampling method. Specifically, 26 female respondents (equivalent to 45.6%) and 31 male students (equal to 54.4%) participated in the study. They all came from rural areas in An Thi district. Similarly, 17 teachers were willing to take part in the semi-structured interviews. The teacher participants included 10 male teachers (same as 58.2%) and 7 female teachers accounting for 41.8%. As for their highest academic titles, 5 teachers (equal to 29.4%) earned Bachelor's degree. 12 teachers (similar to 70.6%) had pursued Master's degree. All of them were experienced teachers.

2.3. Research instruments

At first, 35 Likert-scale items had been constructed to ask 57 K-11 students to evaluate between 1 to 5 scales, ranging namely (1) strongly disagree, (2) disagree, (3) unsure, (4) agree, and (5) strongly agree on five major issues such as technical conditions, digital preference, student relationships, personal contact, and influential emotions. The questionnaire had gone through a dry run to check the liability of the statements and the results of the pilot study were shortlisted to the acceptable internal consistency of Cronbach's alpha ($0.8 > \alpha \geq 0.7$). The final questionnaire included 25 closed statements for the practical implementation. For the main themes of the semi-structured interview, the content of this instrument had consulted 3 experts on educational administration to ensure the reliable coverage of the issue. Specifically, teacher respondents were pivoted on 5 major matters, particularly convenient two-way exchange, teacher training, collaborative online teaching and assessment, effective teaching tools, online self-study guide and above the line.

2.4. Data analysis

The frequency statistics using SPSS application was applied to deal with the results from the survey questionnaire. The interval scales were divided basing on the Likert scales with 5 interpretation degrees such as the worst/lowest (1.00 – 1.80); worse/lower (1.81 – 2.60); moderate/neutral (2.61 – 3.40); good/high (3.41 – 4.20), and the best/highest (4.21 – 5.00). Independent Sample t Test was used to examine whether male and female respondents shared the same views on five major online learning factors. While the transcription from the semi-structured interview was encoded and produced the outputs from Nvivo v.17 application.

3. Results and Discussion

3.1. Eleventh-graders' perspectives for the implementation of online learning mode

Digital transformation has gradually influenced teaching and learning. Table 1 discloses how learners have experienced their learning process with the intervention of digital transformation in online teaching and learning. In terms of technical conditions, they stated that the curriculum sharing platform ($M = 3.73$), and the online tutoring technical background ($M = 3.67$) were good, which came up with their expectations. However, they assumed that they had neutral opinions of the online assignment completion ($M = 2.53$), technical difficulties ($M = 2.93$), or proper instruction of using ICT infrastructure ($M = 2.25$). Generally, technical conditions are good enough for the implementation of the transition to online learning and teaching. The above data indicates that there are some improved actions required to help learners overcome their concerns [11] - [13]. Practically, it is necessary to prepare abundant resources of digital copies of lesson and reference materials so that they could download or open these documents any time later. Besides, it is very important to train and instruct learners how to use the systems thoroughly [14]. They should be provided manual instructions along with the trial period with the confirmation of being fully aware of how the ICT systems enable learners to work with. Thus, technical requirements assure good digital infrastructures and the preparation of how to exploit them.

Concerning the aspect of digital preference, it is clearly illustrated in Table 1 that learners prepared their own electronic equipment readily for the system requirements of the given subject ($M = 3.70$). In contrast, they were not longing for using the school labs compared with their own electronic devices ($M = 2.26$), they did not highly appreciate the employment of school tools for their subjects ($M = 2.90$). Furthermore, they found the availability of learning resources at a moderate extent ($M = 2.75$), and they also saw it normal to use the learning platform ($M = 2.74$). Typically, the moderate evaluation of the respondents towards the school infrastructure might result from either the improper investment of digital devices or the lack of training to exploit the equipment, even the readiness of the teachers in giving instructions during the transition to online education [15]. Apparently, to overcome the challenges of digital transformation in education, learners are expected to train how to use the platform systems for study properly to meet the requirements.

Table 1. High school learners' perspectives towards online learning

	N	Mean	Std. Deviation	Interpretation
A. Technical Conditions				
1. How challenging was the technical occurrence during the transition to online education?	57	2.93	0.476	Moderate
2. How difficult it was to use school open access resources to complete assignments?	57	2.53	0.466	Moderate
3. How appropriate was the curriculum sharing platform used by the teachers?	57	3.73	0.620	Good
4. How well did the technological background match online tutoring?	57	3.67	0.809	Good
5. To what extent did you consider the received information of the proper use of ICT infrastructure to be helpful?	57	2.25	0.557	Moderate

	N	Mean	Std. Deviation	Interpretation
B. Digital preference				
1. If you have the chance to use the school labs, not your own computer, how do you evaluate the opportunity?	57	2.26	0.577	Moderate
2. How well do you use the school tools to learn the curriculum?	57	3.90	0.604	Good
3. To what extent do your own electronic devices meet the system requirements of the given subject?	57	3.70	0.744	Good
4. How difficult was it to master the learning platform?	57	2.74	0.635	Moderate
5. How do you evaluate your school available learning resources?	57	2.75	0.692	Moderate
C. Student relationships				
1. How has online education affected contact with your fellow students?	57	1.88	0.747	Worse
2. How well did your fellow students help you during online education?	57	1.44	0.864	Worse
3. How well do you collaborate with your classmates for study purposes?	57	2.20	0.661	Good
4. How successfully are class problems solved online?	57	3.68	0.529	Good
5. How much do you want to meet your fellow students in person?	57	3.72	0.559	Very high
D. Personal contact				
1. How efficiently does your teacher use the webcam to monitor the class during lessons?	57	2.72	0.621	Moderate
2. How effectively can you evaluate the self-study materials instead of personal presence or online participation?	57	1.72	0.601	Low
3. How better do you think of your weekly verbal contact with the teachers via social networking sites?	57	3.65	0.596	Good
4. How useful is it for you to settle down personal disagreement if you can request clarified explanation during online class?	57	3.33	0.424	Good
5. To what extent do you develop your interpersonal skills with your classmates or teachers via online platform?	57	2.77	0.524	Moderate
E. Emotional Influences				
1. How proactive do you feel when learning online?	57	2.93	0.638	Moderate
2. To what extent do you undergo excessive fear, anxiety, or prolonged sadness when studying online?	57	3.98	0.709	High
3. How much do you experience aggressive, uncontrolled, and hostile behaviour when studying online?	57	3.75	0.644	High
4. To what extent do you think your attitude becomes easily quick-tempered and irritable towards online lessons?	57	3.82	0.726	High
5. To what degree do you feel indifferent and demotivated to socialize with friends and family members?	57	2.79	0.681	Moderate

On clarifying the influential personal contact via online platform, it is gleaned from Table 1 that learners were unable to learn on their own without being given instruction ($M = 1.72$), which denotes that learner autonomy needs activating to become familiar to flipped or hybrid learning mode. This model has drawn the focal attention among the pedagogical experts [16], [17], [18]. In addition, the online learning mode might deter the way high school learners developed their interpersonal skills with their peers as well as their teachers ($M = 2.77$). Actually, face-to-face communication might solve the misunderstanding and instant explanation can help overcome the personal disagreement, which benefits learners from improving their interpersonal skills. When studying online, learners cannot express their verbal languages or their body language to denote the real meaning so that misunderstanding may spring from verbal language via online platform. Another view on the teachers' usage of webcam to supervising online classes reveals that learners did not have clear stances. In practice, classroom management in face-to-face class causes no difficulties as teachers can easily control wrongdoing or misconduct of their learners right away

[12]; however, it is very challenging and difficult for teachers only to concentrate on the class supervision while they have to deliver the lesson according to the preset curriculum. As glimpsed from Table 1, high school learners believed that frequent verbal contact with their teachers did them better ($M = 3.65$), and constant request for their misunderstanding of any points via online learning mode could help learners solve the problems better ($M = 3.33$). The need to have direct communication when problems arise is very necessary to settle any disputes. Therefore, improving interpersonal skills online might be problematic if the digital transmission would take place if the conventional education were transformed to the virtual teaching mode.

To examine the emotional influence, the respondents asserted that they experienced moderate extent of proactive attitude ($M = 2.93$). Similarly, the level of indifferent and demotivated feeling to socializing with friends and family members was not high ($M = 2.79$). On the contrary, the participants claimed to highly suffer from excessive fear, anxiety, or prolonged sadness ($M = 3.98$), aggressive, uncontrolled, and hostile behaviour ($M = 3.75$), and becomes easily quick-tempered and irritable ($M = 3.82$). By reviewing the data, it is generally commented that when studying online, learners tend to be negatively affected their internal feelings, they seem to become introvert with bad temper. These causes might result from being cooped alone, which are consistent with other research findings [1], [11], [13]. Overall, learners' behaviours are negatively influenced by online learning.

The Independent Samples *t* Test compares the means of the gender with five major factors in order to determine whether there is statistical evidence that the associated population means are significantly different. Table 2 clearly shows that the Sig. values in the Levene's Test for Equality of Variances are all above the confidence level (0.05), so the values of Sig. (2-tailed) in the *t*-test for Equality of Means are conferred in the equal variances assumed. The results indicate that all the Sig. (2-tailed) values all higher than the confidence level which denotes that there is no different viewpoints between male and female learners towards five examined factors.

Table 2. Correlation analysis between high school learners' perspectives with online learning factors

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Technical Conditions	Equal variances assumed	.007	.931	-.446	55	.657	-.406
	Equal variances not assumed			-.450	54.60	.655	-.406
Digital preference	Equal variances assumed	.050	.824	.525	55	.602	.4504
	Equal variances not assumed			.530	54.72	.598	.4504
Student relationships	Equal variances assumed	.069	.794	.582	55	.563	.5807
	Equal variances not assumed			.583	53.55	.562	.5807
Personal contact	Equal variances assumed	.207	.651	1.323	55	.191	1.274
	Equal variances not assumed			1.334	54.66	.188	1.274
Emotional Influence	Equal variances assumed	.092	.763	1.343	55	.185	1.303
	Equal variances not assumed			1.362	54.97	.179	1.303

3.2. Teachers' opinions of the practicality of online teaching transmission

Table 3 depicts the contrastive analysis of teachers' acceptance and rejection against the practical implementation of digital transmission in online teaching method. To evaluate the convenient two-way exchange, although the proportion of teachers who were in favour of disagreement was higher, the difference was not really big, which might denote that teachers have a tendency of accepting new mode of teaching. Similarly, most teachers ($n = 14$, accounting for 82.4%) recognized the usefulness of using online platform to exchange information for study purposes. Most online systems incorporate many social networking sites, which enable teachers to integrate and connect easily with their learners [8], [14]. This is the reason why two-way

exchange becomes convenient, practical and efficient. Considering the teacher training for familiarizing digital transformation process for teaching online, almost all respondents ($n = 16$, same as 94.1%) thought to be given courses relating to digital transmission for the readiness of teaching online. With unpredictable development of high-tech education applications, teachers need on-the-job training courses on how to operate teaching aids such as interactive boards, converting documents or even log-on online systems. Teachers find it very challenging to get used to exploiting new electronic equipment. In addition, approximate two thirds of teachers ($n = 11$, equal to 64.7%) realized the importance of taking part in some workshops or seminars on digital transmission for online teaching. These channels are sure to provide more information about the advantages and disadvantages of digital transmission. Practically, workshops and seminars can address common problems or issues that digital transmission may confront on a regular basis. On these events, participants can share their insights and thoughts on how to resolve the problems, which can offer a fresh perspective when dealing with the problem. Participants can find inspiration or initiatives that they have never considered before.

In regard to collaborative online teaching and assessment, when questioning the use of current systems for testing and assessment online, most teachers ($n = 14$; equivalent to 82.4%) accepted that the temporary system could be used for both online teaching and conducting exams. They were, however, strongly worried about the security and liability while learners did the tests online ($n = 15$; equal to 88.2%). The purpose of testing and assessment evaluates the test takers on the academic readiness, learning progress, skill acquisition or educational requirements. In reality, online assessments may save time and cost expenses. At a certain time schedule, test takers do online testing with their own devices in a preset time allotment. Besides, personalized tests can be assigned to each candidate with the help of IT to apply mixed exam questions for each test taker [11]. At the end of the online assessment session, the results, answers or instant feedback about the chosen topic could inform the test takers immediately. Nevertheless, the exam security might pose some concerns, it is susceptible to online exam cheating, the online system is hacked, or even the online system is crashed and cannot recover the data [15], [16], [18].

Table 3. General teachers' factual feelings about online education

	Agreement		Disagreement	
	Frequency ($n = 17$)	Percent	Frequency ($n = 17$)	Percent
1. Is online learning more interactive and convenient to get ideas across?	8	47.1	9	52.9
2. Is it efficient for teachers to exchange with students on the system for study purposes?	14	82.4	3	17.6
3. Do teachers need additional training to involve in digital transmission process for online teaching?	16	94.1	1	5.9
4. Do you need to participate in some workshops or seminar on digital transmission for online teaching?	11	64.7	6	35.3
5. Is the online teaching platform suitable for learners to participate in online examinations?	14	82.4	3	17.6
6. Is it easy to control the security and reliability while learners do the tests online?	2	11.8	15	88.2
7. Do you provide enough resources relative to the subjects for your learners learning online?	12	70.4	5	29.4
8. Is it effective for teachers to exploit digital documents to promote their learners and themselves on scientific research purposes?	10	58.8	7	41.2
9. Do you use the current system to promote learner autonomy in their academic progress?	13	76.5	4	23.5
10. It is worth organizing competitions concerning the awareness of digital transmission online with your learners?	15	88.2	2	11.8

In terms of considering digital transmission as effective teaching tools, Table 3 connotes that about two thirds of teachers agreed to supply enough learning resources for their learners to study online ($n = 12$; same as 70.4%). It is very necessary for teachers to provide enough learning materials for their learners to complement what the subjects require. Those learning documents might result from compiled resources or teachers' own materials, which are in accordance with the subjects and topics that learners need for reference. Teachers have to use their IT skills to convert from paper documents to electronic versions, then deliver to learners via online system. Likewise, teachers were inclined to take advantages of exploiting digital documents for their scientific purposes ($n = 12$; similar to 58.8%). Actually, the Internet provides an enormous amount of information that netizens could access new, updated, and valuable sources of information. Teachers are able to instruct and direct learners to exploit the unlimited and free online resources for their scientific research purposes [9]. The information could be in the form of digitized versions of primary sources, obscure and arcane information, and international, searchable databases and datasets, which avails teachers and learners with a vast amount of information [11].

Mentioning online self-study guide and above the line, most teachers found it useful to use the temporary system to promote learner autonomy in their academic progress ($n = 13$; equivalent to 76.5%). Learner autonomy refers to learners' control and responsibility for their own learning. It strengthens the learners' capability of self-direction and development of an independent, proactive approach to their studies. In other words, learner autonomy needs to come from within, it is not something teachers can impose on learners. Some activities such as learning path orientations, learner-generated content, or self-access progress are typical examples of learner autonomy. In like manner, teachers mostly agreed to boost above-the-line activities online competitions concerning the awareness of digital transmission ($n = 15$; correspondent to 88.2%). As a matter of fact, interactive activities can take place alive online, so vertical competitions are able to be conducted over the Internet system to encourage learners' comprehension of the nature of digital transmission [4].

3.3. The contrastive analysis of teachers' and learners' viewpoints on the essentiality of digital transformation in education

As gleaned from Table 1 and Table 3, it is probably stated that both learners and teachers have demonstrated a state of greater readiness to involve in the process of digital transformation. In general, learners have prepared adequate electronic equipment to exploit the school ICT infrastructure. They do not receive appropriate manual instructions to employ the ICT platform to experience STEM successfully [1]. However, they suffer negatively from personal relationship and emotions when studying online. On the contrary, although teachers acknowledge the importance of digital transformation, they express their expectations of being given formal training relative to the digitalized teaching process. Overall, teachers and learners recognize the beneficial influences of imposing digital transmission in education.

4. Conclusion

Digital applications offering educational tools break down barriers and free the way towards a worldwide increase in educational opportunities and with it an increased chance to find better jobs and live independently. Students who used to be unable to go to school because of a disability, financial lacking, or geographical hindrances can now access an already immensely diverse offering of educational tools on the Internet. This study investigated the eleventh-graders' beliefs on the practical implementation of online learning as one form of digital transformation in education. The participants feel satisfied with technical conditions, they do not undergo any technical challenges, but they suppose that manual instructions to use the system should be available so that they can master the exploitation of the system. For the digital preference, they

have prepared well their electronic devices to connect the school digitalized system. However, they claim to be badly influenced by online learning in terms of student relationships, personal contacts, and emotional influences. The finding indicates that there is no difference between male and female learners compared with five major factors. Although teachers are willing to participate in the process of digital transformation, they still need training how to take advantages of using ICT infrastructure for online teaching. Proper on-the-job training courses, or workshops and seminars on IT are necessary for teachers to get updated and well-informed about the exploitation of ICT for educational purposes.

REFERENCES

- [1] T. V. Vu, "The Impact of Social Networking Sites on Study Habits and Interpersonal Relationships among Vietnamese Students," *Journal of Language and Education*, vol. 7, no. 1, pp. 206-218. Mar. 31st, 2021. [Online]. Available: <http://dx.doi.org/10.2139/ssrn.3861811>. [Accessed May 12th, 2022].
- [2] Vietnamese Prime Minister, "National Digital Transformation Program to 2025, Orientation to 2030," *Vietnam Government Portal*, June 4th, 2020. [Online]. Available: <https://datafiles.chinhphu.vn/cpp/files/vbpq/2020/06/749.signed.pdf>. [Accessed May 9, 2022].
- [3] V. H. Nguyen, "Autonomy in professional activities of schools and high school teachers: Models and conditions for implementation," *MOET Journal of Education*, vol. 509, no. 1, pp. 1-8, Sep. 2021. [Online]. Available: <https://tcgd.tapchigiaoduc.edu.vn/index.php/tapchi/article/view/212>. [Accessed May 10th, 2022].
- [4] C. P. Tran, T. L. Nguyen, T. A. Chu, X. C. Truong, T. H. V. Nguyen, V. T. Luong, and D. L. Do, "Digital Transformation in Education," *Vietnam Journal of Educational Sciences*, vol. 17, pp. 1-7, Oct. 5th, 2019. [Online]. Available: <http://vjes.vnies.edu.vn/en/digital-transformation-education>. [Accessed May 10th, 2022].
- [5] V. T. T. Nguyen, "Digital transformation in higher education institutions," *State Management Review*, vol. 309, no. 10, pp. 8-13. Oct. 2021 [Online]. Available: <https://sti.vista.gov.vn/tw/Lists/TaiLieu/KHCN/Attachments/327991/CVv219S3092021008.pdf>. [Accessed May 12th, 2022].
- [6] Vietnamese Minister of Education and Training, "Decision on Promulgating the Plan to strengthen the application of information technology and digital transformation in education and training for the period 2022-2025," May 10th, 2022. [Online]. Available: <https://moet.gov.vn/giaoducquocdan/tang-cuong-ung-dung-cntt/Pages/chi-tiet-van-ban-chi-dao-dieu-hanh.aspx?ItemID=3161>. [Accessed May 13th, 2022].
- [7] Q. T. N. Do, "Digital transformation in education: Challenges and risks," *Tia Sang Journal*, Feb 5th, 2021. [Online]. Available: <https://tiasang.com.vn/giao-duc/chuyen-doi-so-trong-giao-duc-nhung-thach-thuc-va-nguy-co-26836/>. [Accessed May 12th, 2022].
- [8] N. H. To, "Digital transformation in the field of education and training: Current situation and solutions," *Electronic Magazine of Information and Communication*, June 7th, 2020. [Online]. Available: <https://ictvietnam.vn/chuyen-doi-so-trong-linh-vuc-giao-duc-va-dao-tao-thuc-trang-va-giai-phap-2020-0522150010574.htm>. [Accessed May 13th, 2022].
- [9] D. M. Tatiana and K. V. Kalugina, "Digital Transformation of English Language Teaching (ELT) at a Technical University: BMSTU Case Study," *ITM Web of Conferences*, vol. 35, Dec. 9th, 2020. [Online]. Available: <https://doi.org/10.1051/itmconf/20203501009>. [Accessed May 12th, 2022].
- [10] R. Michael and P. Dominik, "School principals' educational goals and leadership styles for digital transformation: results from case studies in upper secondary schools," *International Journal of Leadership in Education*, Dec 31st, 2021. [Online]. Available: <https://doi.org/10.1080/13603124.2021.2014979>. [Accessed May 10th, 2022].
- [11] C. Dang, "Students love the subject more thanks to digital transformation," *Education & Era Magazine*, Jan. 8th, 2022. [Online]. Available: <https://giaoducthoidai.vn/giao-duc/hoc-sinh-them-yeu-thich-mon-hoc-nho-chuyen-doi-so-ahyGh30ng.html>. [Accessed May 12th, 2022].
- [12] B. Bygstad, E. Ovrelid, S. Ludvigsen, and M. Dahlen, "From dual digitalization to digital learning space: Exploring the digital transformation of higher education," *Computers & Education*, vol. 182, pp. 2-11, Jan. 30th, 2022. [Online]. Available: <https://doi.org/10.1016/j.compedu.2022.104463>. [Accessed May 12th, 2022].

-
- [13] E. Reddy, B. Sharma, P. Reddy, and M. Dakuidreketi, "Mobile Learning Readiness and ICT Competency: A Case Study of Senior Secondary School Students in the Pacific Islands," *2017 4th Asia-Pacific World Congress on Computer Science and Engineering (APWC on CSE)*, Dec. 13, 2017, pp. 137-143. [Online]. Available: <https://doi.org/10.1109/APWCConCSE.2017.00031>. [Accessed May 12th, 2022].
- [14] T. V. Vu, H. T. Nhac, M. N. B. La, and L. T. H. Nguyen, "Differences between novice and experienced teachers in classroom management style at a higher education institution," *Academia*, vol. 26, pp. 61-82, Mar. 10th, 2022. [Online]. Available: <https://doi.org/10.26220/aca.3950>. [Accessed May 12th, 2022].
- [15] C. A. Collazos, H. Fardoun, D. AlSekait, C. S. Pereira, and F. Moreira, "Designing Online Platforms Supporting Emotions and Awareness," *Electronics* vol. 10, no. 251, pp. 1-19, 2021. [Online]. Available: <https://doi.org/10.3390/electronics10030251>. [Accessed May 12th, 2022].
- [16] T. N. A. Dick, L. C. Marques, A. L. Lopes, M. S. Candreva, L. R. Santos, and B. L. S. Picciani, "Phytotherapy in Dentistry: A Literature Review Based on Clinical Data," *European Journal of Medicinal Plants*, vol. 31, no. 10, pp. 1-13, Jun. 2020. [Online]. Available: <https://doi.org/10.9734/ejmp/2020/v31i1030276>. [Accessed May 12th, 2022].
- [17] A. Aristovnik, D. Keržič, D. Ravšelj, N. Tomaževič, and L. Umek, "Impacts of the COVID-19 Pandemic on Life of Higher Education Students: A Global Perspective," *Sustainability*, vol. 12, no. 20, pp. 1-34, Oct. 2020. [Online]. Available: <https://doi.org/10.3390/su12208438>. [Accessed May 12th, 2022].
- [18] Y. M. Tang, P. C. Chen, M. Y. L. Kris, C. H. Wu, Y. Lau, J. Guan, D. He, and G. T. S. Ho, "Comparative analysis of Student's live online learning readiness during the coronavirus (COVID-19) pandemic in the higher education sector," *Computers & Education*, vol. 168, pp. 1-16, Apr. 8th, 2021. [Online]. Available: <https://doi.org/10.1016/j.compedu.2021.104211>. [Accessed May 12th, 2022].