Original Research Article

READINESS OF VIETNAMESE HIGH SCHOOLS FOR DIGITAL TRANSFORMATION AND ITS INFLUENCING FACTORS: A QUANTITATIVE STUDY

ABSTRACT

Digital transformation has become a widespread phenomenon worldwide and profoundly affects the existence and development of different socio-economic organisations towards a comprehensive digital society in the near future. Educational institutions, including high schools, must also implement digital transformation as a comprehensive change of schools to a state where all activities are applied to digital technologies to improve performance efficiency and educational quality. That change is not only a change in technology in its operations but, more importantly, a change in the staff behaviour. However, for these changes to be achieved as expected, a factor considered "antecedent" is the readiness of school members to overcome resistance originally arising from an organisational change requirement. Therefore, this study investigates the status of readiness of Vietnamese high schools for digital transformation from the point of view of high school teachers, who play the role of one of the key factors based on Weiner's theory of organisational readiness for change (2009). Along with that, characteristics such as gender, working area, training level and working seniority of high school teachers and the two elements of Change valence and Information assessment are considered to have a correlation with the readiness of high schools. The descriptive statistical analysis results show that the readiness for digital transformation in Vietnamese general education institutions is at a positive level. The study results show that only the Change valence factor was determined to have a statistically significant correlation with the readiness of high schools for digital transformation. These results will be useful evidence for teachers, researchers in education and organisational development, and school administrators to implement digital transformation in education.

Keywords: organisational change, change readiness, readiness for change, digital transformation, high school, Vietnam

1. INTRODUCTION

Digital transformation is a term that has become popular and mentioned with very high frequency in all aspects of socio-economics, culture, science and education [1]. It has become the core driving force for every organisation worldwide in the Fourth Industrial Revolution era. Currently, digital transformation is playing an increasingly important role in the change and development of all aspects of human society [2]. Digital transformation provides an opportunity for change at the organisation's core to develop itself in a new situation that requires a breakthrough in the operation of organisations. For organisations, digital transformation is understood as the change of the organisation thanks to the transition from a non-digital state to a digital state by popularising the application of digital technologies [3, 4]. Adopting new digital technologies in an organisation can lead to significant business improvement and performance enhancement. However, it is also a challenge in the change process to thrive in a globalised circumstance with increasingly stiff competition.

In that context, change is an inevitable feature of organisational development [5]. It is a planned and strategic process to ensure that an organisation is on track and reaches a new state as expectations for the purpose of enhancing individual growth and improving organisational performance through changes in the work behaviours of organisational members [6], who play a central role in this process [7]. These individuals' changes are expressed through changing the behavioural system in their work towards moving the organisation to a new state or operating model that the organisation is improved and more efficient [5]. In the Stages of Behavioural Change model, changes in behaviours occur in five cognitive stages: precontemplation, contemplation, preparation, action and maintenance [8], 9]. In which, corresponding to the "preparation" phase in this model is the readiness to change, which is a decisive and key precursor to the success of transformation that researchers confirmed in theory as well as the practice of organisational change [10, 11]. This readiness to change is referred to as individuals who have a positive attitude towards change and show a tendency to take action in the future [12]. In addition, the significance of the preparation stage is fundamental because organisational members or employees in a business or school are often, psychologically, looking for a way to maintain a state of affairs which gives them a sense of security, control, and identity [13, 14]. This creates "opposition" or "resistance" that can come from unconsciously or consciously employees before or during the organisational change to a more effective state. Many studies have also shown that this resistance factor plays an essential role in the success of organisational transformation [15, 16]. Without careful preparation and effort to create a change-ready environment in the organisation, leaders and managers may not be able to achieve the expected successful change due to strong resistance from the staff [17]. Therefore, regarding the readiness of the staff, managers and leaders can identify gaps that exist between their own beliefs about efforts to change organisations with the beliefs of others; so that they can guide the establishment of the best way to implement changes in their organisations [18].

In education, digital transformation is an inevitable and growing trend all over the world. It is the application of technical technology to the training and teaching purposes of an educational system or enterprise [19]. Studies on digital transformation in education have now been interested in and carried out by many researchers in many countries around the world, focusing on many different aspects of this issue, such as clarifying the

role, advantages and disadvantages faced by educational institutions in the context of digital transformation [20, 21, 22], the perspectives of learners, teachers, school administrators and stakeholders on digital transformation in education to make appropriate recommendations to promote and effectively implement this process [23, 24, 25]. Regarding the study of the readiness of educational institutions for digital transformation, a series of studies on this issue are concentrated at the higher education level from different perspectives. Some studies address the issue of capacity, resources, barriers to determining the readiness for the digital transformation of higher education institutions [26], and the readiness to accept Internet of Things in the teaching and learning of lecturers and students [27], teachers' readiness to work in the digital education space with digital tools, technology and methods [28]. Others investigate the innovative behaviour of higher education institutions through the institution's readiness to change, influenced by its digital learning orientation [29]. In Vietnam, research on readiness for digital transformation in education, author group Giang et al. (2021) also has had research and publication almost exclusively on readiness for digital transformation in higher education institutions in Vietnam towards the Fourth Industrial Revolution (data-driven of Scopus and Web of Science) is based on four basic elements of university 4.0, namely: training programs, training services, learners and university administration based on the model Uni4.0 [31], and the Smart Education Framework. Thus, research on readiness for digital transformation in education has been interested in recently; however, research issues are focused mainly on technological aspects, while human factors and organisational change have received little attention and are still quite obscure.

Therefore, the research team surveyed Vietnamese high schools' readiness for digital transformation from the point of view of high school teachers, who play the role of one of the key elements of transformation based on Weiner's theory of organisational readiness for change (ORC) (2009). Along with that, the study also explores the correlation between the readiness of high schools with characteristics such as gender, working area, training level and working seniority of teachers. To achieve the above objectives, this study was conducted to answer the following two research questions:

1. What is the status of high schools' readiness for digital transformation from the point of view of high school teachers in Vietnam?
2. What is the correlation between influencing factors such as Change valence, Information assessment, and characteristics of high school teachers such as gender, working area, training level and working seniority with the readiness of high schools for digital transformation?

This study refers to the readiness of educational institutions, exceptionally high schools in Vietnam, for the implementation of digital transformation in schools from the teachers' viewpoints, which will provide valuable findings firstly to teachers themselves, followed by researchers on education and organisational development, and school administrators on the implementation of digital transformation in education.

2. CONCEPTUAL FRAMEWORK

This research approach is based on Weiner's theory of ORC (2009), which is established by focusing on the characteristics of each individual within an organisation [32]. According to the theory of change in general, ORC is a multi-level concept, such as

individual, group, unit, department or organisational level. The theory introduced below focuses on readiness at the organisation level, particularly antecedent and organisation-level outcomes.

The term "readiness", like many other notions in the social sciences, is a concept borrowed from everyday language [33]. That leads to many scholars and scientists not officially defining this concept because they believe that readers can understand and derive the general meaning of this term. ORC refers to the behavioural and psychological preparation of organisational members to implement change [34] and be able to perform activities to drive organisational change. The theoretical model includes the factors of ORC and its influencing factors, including: (1) Change commitment; (2) Change efficacy; (3) Change valence; (4) Information assessment, including two sub-constructs, Tasks knowledge and Resource availability.

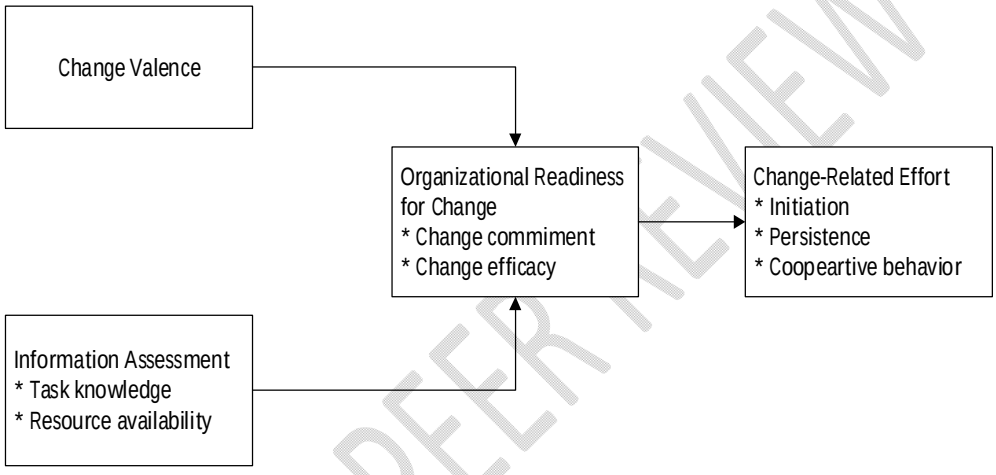

Figure 1. Model of organisational readiness for change
Note: Adapted from Weiner (2009)

2.1 Factors of organisational readiness for change

ORC refers to two cognitive psychology concepts: "commitment" and "efficacy" for change. Therefore, the two core factors that determine ORC in this theory are directly related to these two concepts. Like Bandura et al. (1999) concept of targeted commitment, the concept of *"change commitment*" to change refers to shared constancy or determination by organisational members to pursue action processes related to implementing change [34]. Focusing on the will to participate is crucial because organisational change cannot be accomplished by one individual, but it involves coordinated actions among people in the organisation. Each person contributes in some way to the efforts made towards the organisation's overall success [33]. This commitment varies among organisational members. As with team sports, problems arise when some players feel they can commit while others do not. It shows that each person in the organisation can be consistent or determined to implement change for different reasons and levels. According to the observational study of Herscovitch and Meyer (2002), organisational members can commit to an organisational change they want to because they see the value of change, they have to because they have few options, or maybe because they ought to because they feel an obligation to do so. In which, a

commitment based on "want to do" motivation reflects the highest level of organisational commitment to change [34].

As with the concept in the social cognitive theory of Bandura et al. (1999) of collective effectiveness, "*change efficacy*" refers to the shared beliefs of organisational members in their collective capacities to organise and implement action processes related to change implementation [34]. The emphasis on a shared sense of collective capacities is of paramount importance, as implementation within organisations often requires collective action between interdependent individuals and working units. Collaboration across individuals and groups and the promotion of organisational learning is a good example of collective capacities. Effectiveness evaluation refers to capacities for action. Performance evaluation is not an outcome expectation nor an evaluation of knowledge, skills, or resources [37, [8]. The effectiveness of change is higher when people share a sense of confidence as a group that can implement a complex organisational change [33].

2.2 Factors affecting organisational readiness for change

According to the model shown in Figure 1, it can be seen that a number of decisive factors promote or directly affect ORC. Based on the theory of social cognition and the theory of motivation, Weiner (2009) proposed several conditions and circumstances that can promote ORC to be able to explain the organisation's success and failure when implementing change. Because creating a common sense of readiness is always a big challenge for any organisation. In this theoretical model, two factors that directly motivate ORC are "change valence" and "information assessment", including two sub-constructs "task knowledge" and "resource availability".

2.2.1 Change valence

The term "valence" is an English concept used in psychology with origins taken from the German term "valenz" The original meaning of the German word "valence" is "binding", relating to the language field. It is often used in grammatical contexts to describe the semantic and syntactical association of a word with another word. Moreover, this word has been widely used in the field of chemistry since the nineteenth century to describe the mechanism of bonding between atoms. In psychology, "valence" is one of the most important scientific concepts at the heart of emotional experience [39, p. 83] The term was first known by Lewin (1951) when he used it in his field theory to refer to the forces that attract individuals to desired subjects and push them away from unwanted subjects [41]. This term was subsequently studied and expanded considerably in relation to the selection of certain emotions as having positive or negative valence [42, 43], which is represented by opposite pairs of terms such as positive - negative, good - bad, or satisfied - dissatisfied, capture something about the nature of emotion [41]. Intrinsic attractiveness is seen as positive valence, and aversiveness is negative valence about a certain thing, phenomenon or condition.

In the theory of organisational change, the "valence" was introduced by a structuralist psychologist, Kurt Lewin, in studies on organisational development has a significant meaning. Change valence is a factor or aspect that, according to the motivation theory, is closely related to the element of change commitment in the theory of ORC [44, 45, 46]. Based on the motivation theories, Weiner (2009) asserted that Change commitment is a broader function of change valence. The commitments of organisational members to pursue actions related to organisational change will be higher when they themselves see

the value of these changes for their benefit [33]. Weiner (2009) claimed that the more organisational members value change, the more they will want to make that change, or in other words, the more decisive they will feel when participating in the action processes related to implementing change. So, what are the reasons for such people to value this change? According to Weiner (2009), organisational members value these changes because they maybe believe: (i) it is urgent; (ii) it is effective and addresses critical organisational issues; (iii) it benefits them personally, other employees or their organisation; (iv) it can resonate with their core values; or (v) it is supported by leaders, managers, and colleagues. In general, Change valence, even for different reasons, can be a decisive factor in the aspect of Change commitment.

2.2.2 Information assessment

Social cognitive theory suggests that change efficacy is primarily referred to as a function of organisational members' cognitive assessment of task needs, available resources, and situational factors [47]. Asking themselves questions from organisational members is important to help determine the best capacity to perform the tasks posed during the organisational change process. Information assessments of organisational change will help make this process better and more likely to be successful. When members share a common and mutually agreeable assessment of task needs, available resources and situational factors, they will have a shared sense of confidence that they can implement organisational change together in the same way [33]. Overall, information assessment of organisational change implementation is a factor that plays a directly decisive role in developing ORC, particularly for change efficacy. This factor is determined by two variables, including Task knowledge and Resource availability.

3. METHODOLOGY

3.1 Instrument

To answer the research questions, the research team designed a questionnaire to measure the readiness factors of Vietnamese high schools for digital transformation and the factors affecting this readiness. Based on the theory of ORC [34] and the research of Shea et al. (2014), the research team proposed a questionnaire including 32 items to measure 04 factors. The items were translated with the participation of a five-member expert panel with expertise in psychology, digital transformation in education, English language, and measurement in education. Two readiness factors of Vietnamese high schools for digital transformation are measured by 11 items. Change commitment is measured by 05 items (items 1 - 5), and Change efficacy is measured by 06 items (items 6 - 11). Next, the two factors affecting the change readiness for digital transformation are identified by 21 items. For Change valence, it is measured in 10 items (items 12 - 21). Meanwhile, the Information assessment factor is determined through 11 items used to measure two sub-factors, Task knowledge (items 22 - 26) and Resource availability (items 27 - 32). These items are measured using a 5-level Likert scale with specific values as follows: 1-Strongly disagree; 2-Disagree; 3-Neutral; 4-Agree; 5- Strongly agree.

3.2 Sample

Survey participants are teachers currently teaching at high schools in Vietnam. The chosen sampling method was the convenience sampling method, which involves

selecting individuals closest to the research requirements, and then continuing the selection process until the ideal sample size is achieved [49]. Out of a total of 122 teachers who completed the questionnaire, only 87 records were collected for analysis and another 35 records were discarded, as suggested by Hair Jr et al. (2014). Table 1 below describes the characteristics of the study sample. First, regarding gender, the percentage of female teachers (82.76%) is overwhelming compared to male teachers (17.24%). Regarding the working area, the number of respondents in urban areas (56 people, rate 64.37%) is more than those in rural areas (30 people, rate 34.48%). Regarding training level, the majority of respondents (72.41%) have university degrees, followed by college degrees (16.29%). The proportion of doctoral and intermediate degrees accounted for small rates, respectively 1.15% and 2.30%. Most of the respondents (91.18%) have worked for 10 years or more; the percentage of respondents with less than 5 years and 5-9 years is 4.60%.

Table 1. Sample characteristics

Content	Number	Percentage (%)
Gender	**87**	**100.0**
Male	15	17.24
Female	72	82.76
Area	**87**	**100.0**
Urban	56	64.37
Rural	30	34.48
Missing	1	1.15
Training level	**55**	**100.00**
Doctor	87	100.0
Master	1	1.15
Bachelor	7	8.05
College	63	72.41
Intermediate	14	16.09
Working seniority	**87**	**100.0**
Under 5 years	4	4.60
5 - 9 years	4	4.60
10 - 14 years	17	19.54
15 - 19 years	28	32.18
Over 20 years	34	39.08

3.3 Data collection

Data collection was conducted by online method. The survey tool was made available online through the Google Forms application. The form access link was sent to the survey participants through internet-based applications such as email, Facebook messenger, and Zalo. The data collection period was 23 days, from July 19 to August 18, 2022. After that, the data was downloaded in *.csv format and then imported into SPSS software for data analysis.

3.4. Data analysis

To answer the two research questions, descriptive statistical analysis methods and linear regression analysis methods were applied to the information of the sample characteristics as well as to the response information of the surveyed samples. For the first research question, to determine the status of the factors related to the ORC for digital transformation, the average value of each item was determined, thereby giving its mean level. Besides, reliability analysis was performed to assess the reliability of the factors (see Table 2). For the second research question, linear regression analysis was performed to determine the factors related to the respondents' readiness for change. The independent variables entered in the model included the sample characteristics, the factor of Change valence and Information assessment of digital transformation (see Table 1). The results of the analytical method are shown in Table 3.

4. RESULTS

4.1 Status of readiness of Vietnamese high schools for digital transformation

The status of readiness for digital transformation in Vietnamese general education institutions is positive. Table 2 presents the results of a descriptive statistical analysis of the statements of 87 survey respondents about each item. The data shows that the readiness of Vietnamese high schools for digital transformation has an average value of 3.74, corresponding to the level of Agree on the Likert-5 scale. The factors of Change commitment and Change efficacy also show positive results, in which, Change commitment (mean = 3.89) has a mean value that is slightly better than the mean value of Change efficacy (mean = 3.60). On the scale of Change commitment, the statements have the same value. As for the Change efficacy scale, "I can keep the momentum going in implementing digital transformation in school activities" is the most appreciated by the survey sample (mean = 3.83), and there are differences with other opinions.

Regarding the Change valence factor, the survey subjects rated this scale at 3.82, corresponding to Agree on the Likert-5 scale. Ten statements in this factor are pretty similar, with average values between 3.74 and 3.89.

Regarding the factor Information assessment about digital transformation, including Task knowledge and Resource availability, the average value of this scale is rated at 3.45, corresponding to the level of Agree. The general comment shows that the survey sample is still confused about the Task knowledge factors (mean = 3.40). Specifically, there are 3/5 comments at this level, including "I know how much time it will take to implement digital transformation in school activities", "I know how much it will cost to implement digital transformation in school activities ", and "I know what resources I need to implement digital transformation in school activities ". The Resource availability factor is determined at the level of Agree (mean = 3.50). In which, only one statement at the Neutral level is "I have the resources needed to implement digital transformation in school operations" (mean = 3.36).

In general, Vietnamese general education institutions have readiness for digital transformation in their units. However, some issues need to be improved, namely understanding of funding and resources to implement digital transformation. This requires the school to have a detailed digital transformation plan, which needs to be communicated to the stakeholders.

Table 2. Descriptive statistics of the questions

Variable	Mean	Std. Deviation	Mean level	Cronbach's Alpha
High school readiness for digital transformation	**3.74**	**1.05**	**Agree**	**.978**
Change commitment	***3.89***	***1.14***	***Agree***	***.981***
I am committed to implementing digital transformation in school activities.	3.93	1.15	Agree	
I am determined to implement digital transformation in school activities.	3.91	1.19	Agree	
I am motivated to implement digital transformation in school activities.	3.87	1.18	Agree	
I will do whatever it takes to implement digital transformation in school activities.	3.82	1.21	Agree	
I want to implement digital transformation in school activities.	3.90	1.18	Agree	
Change efficacy	***3.60***	***1.02***	***Agree***	***.956***
I can keep the momentum going in implementing digital transformation in school activities.	3.83	1.15	Agree	
I can manage the politics of implementing digital transformation in school activities.	3.62	1.11	Agree	
I can support people as they adjust to digital transformation in school activities.	3.52	1.14	Agree	
I can get people invested in implementing digital transformation in school activities.	3.56	1.12	Agree	
I can coordinate tasks so that implementation goes smoothly.	3.53	1.11	Agree	
I can keep track of progress in implementing digital transformation in school activities.	3.55	1.15	Agree	
Change valence	**3.82**	**1.13**	**Agree**	**.988**
I feel that digital transformation in school activities is compatible with my values.	3.83	1.12	Agree	
I need to implement digital transformation in school activities.	3.80	1.13	Agree	
I believe that digital transformation in school activities will benefit my community.	3.87	1.20	Agree	
I believe it is necessary to implement digital transformation in school activities.	3.83	1.18	Agree	
I believe that digital transformation in school activities will work.	3.79	1.21	Agree	
I see digital transformation in school activities as timely.	3.89	1.19	Agree	
I believe that digital transformation in school activities is cost-effective.	3.75	1.16	Agree	
I believe that digital transformation in school	3.74	1.25	Agree	

activities will make things better.				
I feel that implementing digital transformation in school activities is a good idea.	3.87	1.22	Agree	
I value digital transformation in school activities.	3.85	1.22	Agree	
Information assessment	**3.45**	**0.97**	**Agree**	**.965**
Task knowledge	***3.40***	***1.04***	***Neutral***	***.945***
I know how much time it will take to implement digital transformation in school activities.	3.34	1.18	Neutral	
I know how much it will cost to implement digital transformation in school activities.	3.31	1.14	Neutral	
I know what resources I need to implement digital transformation in school activities.	3.32	1.18	Neutral	
I know what to do to implement digital transformation in school activities.	3.52	1.16	Agree	
I know what role I play in implementing digital transformation in school activities.	3.53	1.05	Agree	
Resource availability	***3.50***	***0.96***	***Agree***	***.937***
I have the equipment needed to implement digital transformation in school activities.	3.57	1.18	Agree	
I have the expertise to implement digital transformation in school activities.	3.61	1.09	Agree	
I have the time needed to implement digital transformation in school activities.	3.56	1.06	Agree	
I have the skills to implement digital transformation in school activities.	3.47	1.07	Agree	
I have the resources needed to implement digital transformation in school operations.	3.36	1.02	Neutral	
I have the support of specialised units/individuals to implement digital transformation in school activities.	3.44	1.17	Agree	

Note: the items are rated on the Likert-5 scale

4.2. The correlation of influencing factors and teachers' characteristics with the readiness of Vietnamese high schools for digital transformation

Linear regression analysis was performed to determine the correlation between the sample characteristics and the two factors involved. The dependent variable is the high schools' readiness for digital transformation. The independent variables are Task knowledge, Information assessment on digital transformation, working area, gender, training level, and working seniority.

The results of the ANOVA test show that the model is consistent with $F(7,78) = 66.237$, $p < .001$. Besides, the model has the value of Adjusted R Square = .843, which is understood as the change in the value of the independent variables that can explain 84.3% of the variation of the independent variable.

The results of the linear regression analysis are presented in Table 3. The data shows that out of seven independent variables, only one variable has a statistically significant correlation with the dependent variable; in contrast, four variables have no statistical significance for the dependent variable. The variables that were determined not to have statistical significance include Information assessment (β = .144, p = .099), gender (β = .02, p = .653), training level (β = .036, p = .821), working seniority (β = -.012, p = .811), and working area (β = -.070, p = .134). This shows that the information of the above factors does not indicate a statistically significant difference in the organisational readiness for digital transformation. On the other hand, there is only one factor that has a correlation with the organisational readiness for digital transformation, which is Change valence (β = .791, p < .001). This means that the change in the value of Change valence can explain 79.1% of the variation in the readiness for transformation.

In summary, only one factor was determined to have a statistically significant correlation, which is Change valence due to digital transformation. Besides, other factors about the sample characteristics as well as the factor of Information assessment about digital transformation are not found to have a correlation with Change valence due to digital transformation.

Table 3. Results of linear regression analysis

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	β		
(Constant)	.348	.391		.891	.376
Change valence	.736	.083	.791	8.895	.000
Information assessment	.156	.094	.144	1.668	.099
Gender	.057	.126	.020	.451	.653
Training degree	.073	.089	.036	.821	.414
Working seniority	-.013	.054	-.012	-.240	.811
Area	-.155	.102	-.070	-1.514	.134

4. DISCUSSION

In this study, digital transformation in schools is identified as a process of changing schools in a comprehensive way. Based on the theory of ORC proposed by Weiner (2009), the study was conducted to determine the actual situation of readiness of Vietnamese high schools for digital transformation from the teachers' viewpoints and found the correlation between this readiness of high schools and characteristics such as gender, working area, training level and working seniority of the teaching staff. A questionnaire on high school readiness for digital transformation was designed based on research responses by Shea et al. (2014) to measure four factors related to the readiness for the digital transformation of Vietnamese high schools, including Change commitment, Change efficacy, Change valence, and Information assessment. To answer the above two research questions, descriptive statistical analysis methods and linear regression analysis methods are applied to the information of the sample characteristics as well as to the response information of the survey participants. The study results are discussed below.

For the first research question, the descriptive statistical method was used to determine the status of factors related to the readiness of Vietnamese high schools for digital transformation. The analysis results show that, generally, from the teachers' point of view, Vietnamese high schools have readiness for digital transformation in schools with a mean of 3.74, and the two factors Change commitment and Change efficacy have a mean of 3.96 and 3.60, respectively. For the factors affecting high schools' readiness, the Change valence factor is also rated at the level of "Agree". However, the analysis results for the Information assessment factor show that the assessment of Task knowledge and Resource availability to implement digital transformation (in the Resource availability factor) were determined at the "Neutral" level. In fact, if not understand what the mission is, as well as identify the individual and organisation's resources to implement organisational change activities, the readiness to change individual behaviours towards implementing digital transformation will negatively impact perceptions, emotions, and behaviours leading to increased resistance to this school's change [15]. This will be a major obstacle and barrier to organisational change implementation and its success [50]. However, according to Dent and Goldberg (1999), resistance to change is an individual problem; individuals are not completely against change but simply do not fully accept it due to the barriers and obstacles they see in implementation [52, 53]. Therefore, mitigating conditions for this resistance to arise is crucial for school leaders who want to work towards a successful digital transformation process. This suggests that school leaders need specific attention and plans to help teachers realise what tasks and activities they need to perform to implement digital transformation in schools, and support them in finding resources to make this change happen.

For the second research question, the results of linear regression analysis indicate that only the Change valence factor is associated with the high schools' readiness for digital transformation ($\beta = .791$, $p < .001$). This result is in agreement with Weiner's theory of ORC (2009) and the results of previous empirical studies [54, 55, 48]. For example, in the study by Phillips (2017), he found a statistically significant correlation between the influence of Change valence and ORC ($p< .001$). That finding indicates that a 1-point increase in Change valence is associated with a 1,788-point improvement in ORC. Additionally, the previous theoretical studies on ORC have also shown a predictive relationship of Change valence to organisational change readiness [56]. In Weiner's theory (2009), Change valence is a term taken from expectancy theory [57] and theories of planned behaviour [58]. In expectancy theory, Change valence is proposed as one of the two predictors of trend change and other intentional behaviours [57]. Besides that, planned behaviour theories also clearly confirm valence's important role as a precursor and predictor of behaviour [59]. Thus, the predictive relationship of the Change valence of high school teachers with the high schools' readiness to change for digital transformation is understandable because when individuals or whole organisations attach importance to the value of change, the probability of accepting the change is higher and implementing the behaviour change more positively [60, 61]. Consequently, this discovery will suggest to school leaders, as well as teachers themselves, the need to determine the values and benefits of implementing digital transformation for both the organisation and each individual in school activities. That will be the foundation to build confidence in the effectiveness of the school's planned digital transformation implementation, and it is the core solution to improve operational efficiency and the education quality of that school [62, 33].

Regarding the Information assessment factor considered as one of the two predictors of readiness to change, Weiner (2020), based on social cognitive theory, argues that cognitive acceptance of organisational members about the tasks and resources to implement organisational change affecting change efficacy or increasing the individual and collective readiness to change. Both the classic expectancy model [57] and theories of planned behaviour [61]; [63] indicate that perceptions of how easy or difficult activities are or the ability to change in reality playing an important motivating role in promoting an increase in the individual's and organisation's readiness to change. However, the study results did not show a statistically significant correlation between Information assessment and the high schools' readiness for digital transformation. This is a finding that is inconsistent with the work of Phillips (2017) and the theoretical model of Weiner (2009) and Shea et al. (2014). This is a suggestion for researchers about organisational change in general and educational institutions in particular, which need more empirical studies to verify this result with a large and more diverse sample.

5. CONCLUSION

Digital transformation is an inevitable process in the current context, leading to the need to "transform" into a new state for high schools globally, including Vietnamese high schools. This change in Vietnamese high schools is planned and should take place over a certain period of time. Schools need to have teachers' readiness for change to be able to navigate this transformation successfully. The research has partly described the reality of the readiness of Vietnamese high schools from the teacher's viewpoints. In addition, the data analysis results have shown the correlation between Change valence and the high schools' readiness for digital transformation. In this study, the research results on the correlation between information assessment factors and the high schools' readiness for digital transformation have shown a difference compared to previous studies' results.

These discoveries provide useful information for teachers, school leaders and administrators, as well as researchers in organisational development and organisational change on issues related to changes of educational institutions for implementing digital transformation. For teachers, these results help them to know that in order for the school to be ready to change for digital transformation, the change commitment, the awareness of the values or interests of digital transformation, and the clear understanding of tasks and resources to implement digital transformation in school activities play a decisive role. From the teacher's point of view about the school's readiness for digital transformation, school leaders and administrators have helpful information to be able to come up with fundamental solutions to minimise the resistance of the teaching staff in particular, the entire staff of the school in general to help to create a solid foundation for implementing digital transformation. These solutions need to be developed into specific plans with appropriate action plans to ensure the successful implementation of the school's change towards digital transformation. For researchers in this field, the study findings are valuable empirical evidence that they can expand or deepen their studies on organisational readiness for digital transformation and contexts that require similar change, and examine and explore the correlation among elements of organisational readiness with each other and its influencing factors.

Although the study made some significant explores, it still has some limitations. First, with the use of the convenience sampling method, the study lacks clear generalisability [64]. Second, the research did not focus on specific studies on a number of high schools

with different characteristics, such as regions and the percentage of ethnic minorities, to be able to provide a more comprehensive view of the Vietnamese high schools' readiness for digital transformation. Third, the survey subjects were only teachers, while in the school, there were also non-teaching staff and leaders/managers, who also played a critical role in organisational change. These are also suggestions so that future studies will be conducted with a more comprehensive and larger sample size with a more reliable sampling method.

CONSENT

As per international standard or university standard, Participants' written consent has been collected and preserved by the author(s).

ETHICS APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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