



Research Article

INFLUENCE OF QUALITY CULTURE ON DIGITAL TRANSFORMATION: A CASE STUDY OF TRA VINH UNIVERSITY

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ABSTRACT

Digital transformation has had a positive impact on many aspects of life, including education. In the process of digital transformation, quality culture plays a significant role in digital transition. Digital transformation is no longer a new phenomenon but has affected many areas of life, including education. Research and analysis of quality cultural factors affecting the digital transformation process at Tra Vinh University is an urgent issue. The data was collected using a convenient sampling method, surveying 287 managers and lecturers working at Tra Vinh University. The factors influencing digital transformation are measured and identified using Cronbach's alpha, exploratory factor analysis, and linear regression. The research results show that five factors affect the digital transformation process namely: 1) academic values, (2) social values, (3) values in humanities, (4) cultural values, and (5) values in facilities and learning materials

Keywords: quality culture; digital transformation; Tra Vinh University

1. Introduction

Digital transformation is a global trend in higher education management, an inevitable trend in university management. Each higher education institution (HEI) has its own quality culture, which affects the attitude toward acceptance, evaluation, and reactions to change. To create positive exemplary innovations that are powerfully disseminated and repeated by dependent members depends on the perception of lecturers in HEIs. Although the quality culture (QC) is expressed through the decision-making process, creating consensus where all members understand their work and follow quality requirements, any action that is denied has a significant impact on the development of HEIs (Nguyen, 2021). Some universities are active in digital transformation, but some HEIs are hesitant and unprepared and hence faces many challenges. How to implement digital transformation requires positive contributions of QC factors inside the university to meet the requirements of society. According to Nguyen, and Le (2020), QC of universities includes five factors: (1) academic values, (2) social

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values, (3) humanity values, (4) cultural values, and (5) values in infrastructure and learning resources. All these five factors are the core values of QC in universities shared by all university members for sustainable development in HEIs. Therefore, it is necessary to identify the impacts of QC factors on the digital transformation of HEIs. The article analyzes such impacts on the digital transformation of Tra Vinh University.

2. Research methodology

2.1. Research methods and models

To determine the impacts of QC factors on digital transformation (DT), a survey of 20 sub-factors in the five QC factors was conducted with 297 lecturers and managers from February to June 2023 using Google Forms at Tra Vinh University. SPSS software version 20.0 was used to analyze data. The questionnaire used a 5-level Likert scale: $1.00 \leq X \leq 1.80$: No influence; $1.80 < X \leq 2.60$: Partially influential; $2.60 < X \leq 3.40$: Mostly influential; $3.40 < X \leq 4.20$: Important influence; $4.20 < X \leq 5.00$: Very important influence.

The research model is described in Figure 1.

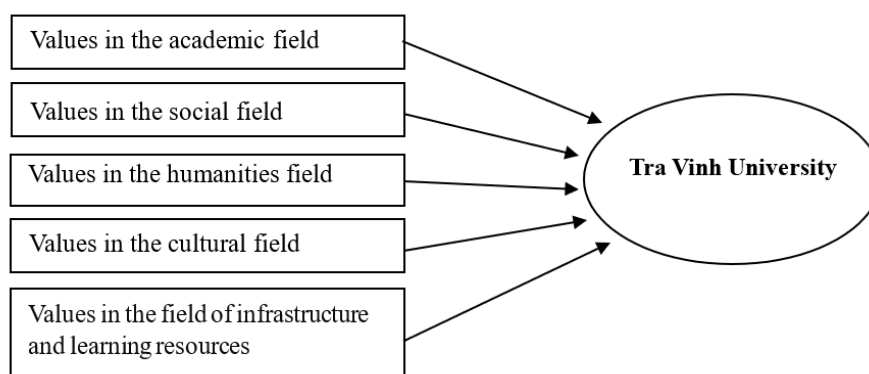


Figure 1. Research model of QC factors at Tra Vinh University

From the research model, the following research hypotheses are proposed:

H1: Academic values influence DT

H2: Social values influence DT

H3: Humanity values influence DT

H4: Cultural values influence DT

H5: Values in infrastructure and learning resources influence DT

2.2. Findings

2.2.1. The factors of the quality culture in universities

Digital transformation (DT) is a change in the way an organization operates to improve the quality of products and services using technology and data. Digital transformation is the next step in computerization, thanks to the breakthrough progress of new technologies, especially digital technology. So, digital transformation in education can be understood as the process of applying information technology in education to change the way education is implemented, including changes in methods, techniques, and techniques of teaching and training. Quality

culture is a system of values of the organization to create a favorable environment for the establishment and continuous improvement to enhance quality (Ahmed, 2010).

For Edgar (2010), organizational culture is divided into three levels:

- First level: This is the level of culture that can be seen immediately, including phenomena and objects that a person can hear, see, and feel when interacting with an unfamiliar organization. This is the most easily recognizable and perceptible level of culture. However, this level of culture is prone to change and rarely reflects the true values within the organizational culture.

- Second level: The declared values (business strategy, objectives, business philosophy...), every organization has its own rules, principles, philosophy, strategy, and objectives, which guide the activities of all employees and are usually widely publicized to the public. These are also the declared values, a part of the business culture.

- Third level: Common concepts (beliefs, perceptions, thoughts, and feelings that are unconscious, inherently recognized in the organization). In any level of culture (national culture, business culture, organizational culture ...) there are common concepts that formed and existed for a long time, they deeply penetrate the psychology of most members in that culture and become the default recognized thing.

All three levels of organizational culture always blend and are compatible with each other, aiming to express the unique characteristics of that organization.

According to Capgemini (2017), digital transformation culture has seven characteristics: customer-centric, innovative, data-driven decision-making, collaboration, open culture, digital-first thinking, agility, and flexibility.

Phan (2022) shows that digital transformation does not only depend on technology factors but humans are still the deciders. Businesses will only successfully implement digital transformation when and only when the entire human resources team, in which leaders must overcome stagnation in thinking - things that can slow down the digital transformation initiatives of the business.

Using the QC framework of universities, which includes five areas/factors by Nguyen and Le(2020), this study adjusted some terminologies of QC appropriate to the digital transformation of the university. All five components are the core values of QC in universities shared by all members. Thus, it is believed that these QC factors influence the implementation of DT in universities because the QC elements are the determinant of success in the university's DT process.

2.2.2. Impacts of quality culture factors on the digital transformation process of Tra Vinh University

- The reliability of the scale (Table 1):

Table 1. Reliability of the scale

Factors		Cronbach's - Alpha
1	Academic values	0,815
2	Social values	0,821
3	Humanities values	0,834
4	Cultural values	0,887
5	Value in the facilities and referential materials field	0,843

The results from Table 1 show that all factors have a high Cronbach's Alpha reliability coefficient, ranging from 0.815 to 0.887. The measurement variables of the results show that these 5 factors have high reliability.

Table 2. Average score and ranking of CPL factors during the implementation of CSH

STT	Factors of QC	Medium score	Ratings
1	Academic field value		
1.1	Freedom of creativity in teaching and scientific research activities	4.27	1
1.2	Honesty in research and publication of scientific products	4.24	3
1.3	Valuing the implementation of academic dissemination in higher education	3.97	19
1.4	Promote the spirit of cooperation and sharing of scientific research and teaching results	4.05	13
	Medium score	4.08	
2	Social field values		
2.1	Affirming the established vision, mission and core values of the school	4.16	8
2.2	Promote the school's autonomy and social responsibility	4.20	6
2.3	Plan a mechanism to evaluate the quality of work of individuals and units at the school	4.09	10
2.4	Ensure openness and transparency in human resources organization and financial management training	4.08	11
	Medium score	4.18	
3	Values belong to the field of humanities		
3.1	Democracy in management and administration of school activities	4.20	5
3.2	Ensure benefits according to policies for staff, employees and learners	4.21	4
3.3	Promote the responsibility of officials, employees and learners towards the school and society	4.26	2

3.4	Enhance the spirit of solidarity and mutual love within the unit, between units, individuals and with society	4.03	16
Medium score		4.18	
4	Value belongs to the cultural field		
4.1	Staff and students have a deep belief in the values established in the organization and actively implement those cultural values	4.05	14
4.2	Create rules of conduct, cooperation, support, respect and a civilized and cultural lifestyle	4.10	9
4.3	Honoring the school's fine traditions combined with national cultural identity	4.06	12
4.4	Pay attention to cultural activities in school; cultural exchange, cooperation, and integration with domestic and foreign communities	4.02	17
Medium score		4.06	
5	Value is in the field of facilities and learning resources		
5.1	Open learning materials warehouse with a system of lectures, exercises, and documents that are highly interactive and pre-compiled	3.95	20
5.2	Ensure adequate facilities, equipment, lecture halls, and classrooms for teaching, learning, and research in terms of quantity and quality	4.16	7
5.3	Ensure library culture (environment, behavior, communication, reading culture...)	4.04	15
5.4	Share digital resources, technology, digital platforms, data centers	4.00	18
Medium score		4.04	
Medium score		4.15	

Table 2 shows that the QC factors have a significant influence (average score = 4.15) on the implementation of DT at Tra Vinh University, most clearly shown through 5 specific factors:

The factor of values in the academic field has a significant influence on the implementation of DT of the school, in which: The content of creative freedom in teaching and scientific research activities; honesty in research and publication of scientific products have the highest average score (average score = 4.27 and 4.24) has a very important influence, academic activity is the mission is the core value of the school. Applying the modern scientific and technological achievements of digital transformation, lecturers can easily access, exploit the document repository to serve the teaching process. Academic freedom needs to be strongly guaranteed at the school, it is necessary to promote an academic freedom environment in the strong trend of digital transformation in current education, academic activities and scientific research must be shown honesty because it is the survival

value to survive and develop in the school. The content that values the implementation of academic dissemination in higher education institutions (average score = 3.97) is evaluated to have a significant influence on the implementation of DT of the school needs to pay attention to the implementation of academic dissemination because this is the core value in academic autonomy and building a rich and diverse open scientific document in academia.

The factor of values in the social field has a significant influence on the implementation of DT of the school, in which: The content that values the autonomy and social responsibility of the School (average score = 4.20) has a significant influence when implementing DT activities, the content that values the autonomy and responsibility of the school needs to be implemented seriously, it is the responsibility to society and responsibility to the internal school. The content ensures transparency in human resource organization, training, financial management (average score = 4.08) has a significant influence, financial autonomy will create conditions for universities to be proactive in using funds, thereby, reducing unnecessary expenditures, practicing savings, contributing to increasing income for the school staff. Transparency in human resource organization, showing the freedom to recruit, manage, use labor in necessary positions. The DT of a university can be clearly seen through the construction of strong infrastructure and the development of a team to foster technology skills. In the current context, not only the infrastructure makes the reputation and brand of the school, but there must be a strong team and enough in quantity, strong in quality, need to invest in building, developing information technology infrastructure to serve the digital transformation process quickly, conveniently.

The factor of values in the humanities field has a significant influence on the implementation of DT, in which: The content that emphasizes the responsibility of officers, civil servants, and learners towards the school and society (average score = 4.26) has a very important influence on the implementation of DT, showing that the spirit of DT for any choice of resources and information from the environment to organize and deploy training activities, scientific research, and community service, needs to be deployed, to be appropriate, accurate, objective. To enhance the sense of responsibility, it requires officers and civil servants to have confidence, self-consciousness, and proactivity in the process of performing tasks, understand their responsibilities, complete work with high quality and efficiency, know how to nurture a sense of responsibility in a disciplined, democratic, friendly environment. In addition, the spirit of responsibility always lies in the relationship with the capacity and authority of each individual and it also depends on the spirit of responsibility of the highest management leaders; The content that emphasizes the spirit of solidarity, mutual affection in the unit, between units, individuals, and society (average score = 4.03) although this content has a lower average score than other components in the factor of developing a humanistic environment but has a significant influence. But for the goal of improving quality and sustainable development, the school needs to focus on building a centralized organizational culture that emphasizes the spirit of solidarity to create consensus

when performing work, resolutely fight against the phenomenon of factionalism, door rights, officialdom. It is necessary to deploy the implementation of measures to monitor and evaluate the effectiveness of this activity in a more detailed and regular way.

The factor of values in the cultural field has a significant influence on the implementation of DT of the university, in which: The content of establishing rules of behavior, cooperation, support, respect, and civilized, cultural lifestyle (average score = 4.10) has a significant influence in the process of DT, showing that the school has established a system of standards, cultural values, beliefs, psychology, expectations, good behavior rules in the school and with the community... those are intangible values. Organizational culture is a deep factor of the school brand. The vitality of the school or any organization is also equipped with the depth of culture of the school, that organization. Each individual in the school is aware of their responsibility in building a healthy, positive school cultural environment - an environment right where they are working and studying contributes to improving the quality of the school's autonomous activities; The content focuses on cultural activities in the school; cultural exchange, cooperation, integration with the community at home and abroad has (average score = 4.02) a significant influence when implementing DT of the university. Each school will have its own characteristics, cultural exchange activities have contributed to enhancing awareness of the importance of educational activities. Therefore, QC will definitely have to be different, characterized by the value system that the school is aiming for.

The factor of values in the field of infrastructure and learning resources has a significant influence on the implementation of DT, in which: The content ensures adequate quantity and quality of infrastructure, equipment, lecture halls, classrooms for teaching, learning, and research (average score = 4.16) shows that the school needs to focus on investing in modern infrastructure, equipment; lecture halls, classrooms are fully equipped to serve well for teaching, learning, scientific research activities. Applying information technology in university teaching is an urgent requirement of educational innovation in the process of DT. Many training institutions in our country have applied software in training management, evaluation, building question banks, teaching by projector... but to really exploit a huge amount of data, access to updated new knowledge, effectively apply teaching and learning support software, universities need to have a wide internet network, students and lecturers need to have connection equipment, power supply system, synchronized classrooms, environment and facilities to practice... student campus learns numbers, must connect students with each other, connect between teachers and students or students with the school automatically. In addition, the workplace must be digitized. The school needs to move towards completely abolishing manual work. Like the documents, printed papers then require lecturers, students to sign. Instead, it must be implemented online from human resource management software, KPI competition Nguyen (2021) based on the application of artificial intelligence. These are big challenges for many universities because of financial

constraints. The content of open learning materials with a system of lectures, exercises, documents with high interactivity, pre-compiled, although it has a lower average score than other contents (average score = 3.95) but has a significant influence on the implementation of DT contributes to ensuring and improving the quality of school activities. In general, the evaluation results show that the QC factors have a significant to very important influence on the implementation of DT, this will promote the school in improving the quality of human resource training to be able to survive and develop in the condition of implementing DT. This shows that QC is an important factor in the work of implementing DT of the school at present.

2.2.3. *Exploratory Factor Analysis (EFA) in implementing digital transformation*

Exploratory Factor Analysis (EFA) is a quantitative analysis method used to reduce a set of many interdependent measurement variables into a smaller set (called factors) to make them more meaningful but still contain most of the information content of the original variable set. The basis for this reduction is based on the linear relationship of the factors with the observed variables. The number of basic factors depends on the research model, in which they constrain each other by rotating orthogonal vectors to each other to avoid the phenomenon of correlation. In this study, the EFA method is used to identify the factors that evaluate the level of contribution to the implementation of DT.

To analyze the EFA factor, the results are considered important and practically meaningful, only retaining the observed variables with a factor weight value >0.3, however, the best is >0.5, (Cisco, 2020) (see Table 3).

Table 3. *Exploratory Factor Analysis in implementing DT*

Observed variable	Fact				
	1	2	3	4	5
C1.1	.754				
C1.2	.762				
C1.3	.629				
C1.4	.667				
C2.1		.647			
C2.2		.684			
C2.3		.721			
C2.4		.780			
C3.1			.684		
C3.2			.725		
C3.3			.646		
C3.4			.627		
C4.1				.651	
C4.2				.651	
C4.3				.706	
C4.4				.725	
C5.1					.789
C5.2					.643
C5.3					.740
C5.4					.739

To ensure the data of the 5 new factors/elements analyzed is valuable and reliable, Cronbach's Alpha validation is conducted for the observed variables in the factors ranging from 0.629 to 0.789.

The results show that all observed/constituent variables have a relatively high correlation coefficient with the total variable. This means that the observed variables in each factor/element are homogeneous and all contribute to the reliability of those factors. Therefore, the coefficients meet the scale requirements, have the convergent value of the factors with the contribution level of implementing the university's quality assurance system.

2.2.4. Regression results (Table 4)

Table 4. Regression results

Factors	Coefficient not yet		Standardize	t	Sig.	Collinearity statistics	
	B	Standard error	Beta			B	
(Constant)	.038	.084		.458	.647		
1 Academic values	.256	.030	.280	8.565	.000	.310	3.213
1 Social values	.151	.033	.160	4.535	.000	.282	3.525
Humanities values	.191	.034	.197	5.552	.000	.284	3.503
Cultural values	.203	.035	.289	5.809	.000	.277	3.644
2 Infrastructure	.171	.031	.181	5.547	.000	.335	2.977

Based on the normalized Beta coefficient, the regression equation is established as follows: Evaluation result = 0.289 * Cultural values + 0.280 * Academic values + 0.197 * Humanities values + 0.181 * Infrastructure values + 0.160 * Social values.

The results show that the cultural values (highest beta coefficient 0.289) is responsible for professionalism, behavior, and attitude that promote dedication and passion for work with high efficiency, creating favorable conditions for building a loyal generation of the university staff. If the cultural environment is negatively traditional, conservative, outdated, and not suitable for the current context and situation, it will create obstacles to the development of a civilized and modern cultural environment.

Academic values influenced the implementation (second highest beta coefficient 0.280), reflecting that the participants recognized the importance of the values in the current situation at Tra Vinh University. These values can be seen as a part of academic freedom. This is one of the important factors in teaching, learning, researching, and disseminating knowledge. This mechanism ensures that the university staff is dedicated as well as autonomous in their teaching and research.

In addition, values in physical facilities and learning resources, library systems, documents, and equipment were highly evaluated by lecturers. Students are flexible in choosing courses and subjects, lecturers also need to create a safe, healthy network space, and digital technology for learning and research is essential. Digital transformation at

universities is not simply online teaching. It is the digitization of the entire teaching and learning process, the automation of processes and management, and the teaching scope. Therefore, emphasizing infrastructure values in implementation will create motivation for innovation and creativity to achieve higher efficiency in all university activities while creating conditions to diversify activities and increase competition in quality among higher education institutions.

3. Conclusion

Measurement results show that quality cultural factors have an important influence on the implementation of digital transformation at Tra Vinh University: Values in the academic field, Values in the field Social values, Values in the field of humanities, Values in the field of culture, Values in the field of facilities have differences in the influence of factors in the digital transformation process, in which the factors The most important influences are Values in the cultural field, Values in the academic field, Values in the humanities field, Values in the social field, Values in the field of facilities and learning resources data in implementing digital transformation of schools. This initial study has clarified the influence of Tra Vinh University's quality culture factors in implementing digital transformation. Thereby, the results serve as a basis for new research to propose a number of directions showing the importance of quality cultural factors in implementing digital transformation proactively, correctly, fully and effectively. more effective in the Vietnamese university system.

❖ **Conflict of Interest:** Author have no conflict of interest to declare.

REFERENCES

- Ahmed, S. M. (2010). *Quality Cultrure*. College of Engineering & computing Florida Internationnal University.
- Clark, E. (2018). "Digital Transformation: What Is It?". <https://er.educause.edu/articles/2018/5/digital-transformation-what-is-it>
- Capgemini. (2017). The Digital Culture Challenge: Closing the Employee-Leadership Gap. https://www.capgemini.com/wp-content/uploads/2017/12/dti_digitalculture_report.pdf
- Cisco. (2020). Asia Pacific SMB Digital Maturity Study. https://www.cisco.com/c/en_vn/solutions/small-business/resource-center.html
- Edgar, H. S. (2010). *Organizational Culture and Leadership*. Publish by Jossey-Bass.
- Prime Minister of the Government. (2020). *Quyết định số 749/QĐ-TTg, ngày 03/06/2020 phê duyệt "Chương trình Chuyển đổi số quốc gia đến năm 2025, tầm nhìn đến năm 2030"* [Decision No. 749/QĐ-TTg dated June 3, 2020, approving the "National Digital Transformation Program to 2025, vision towards 2030"]. Hanoi.

- Nguyen, V. A. (2021). Cách mạng công nghiệp 4.0 và ảnh hưởng của nó đến giáo dục đại học [The Industrial Revolution 4.0 and its impact on higher education]. *Journal of Information and Communication*, issue of March 2021. <https://ictvietnam.vn/cach-mang-cong-nghiep-4-0-va-anh-huong-cua-no-den-giao-duc-dai-hoc-28150.html>
- Pham, L. C. (2014). Xây dựng văn hóa chất lượng trong các trường đại học sư phạm và khoa sư phạm của các trường đại học [Building quality culture in pedagogical universities and pedagogical faculties of universities]. *Journal of Educational Sciences, Vietnam Institute of Educational Sciences*, (109), 48-50.
- Phan, Y. L. (2022). Tác động của văn hóa doanh nghiệp tới chuyển đổi số của các doanh nghiệp nhỏ và vừa tại Hà Nội [The Impact of Corporate Culture on the Digital Transformation of Small and Medium Enterprises in Hanoi]. *Journal of Industry and Trade*, September 2022, 131-134.
- Nguyen, T. T. V. (2021). Chuyển đổi số trong các cơ sở giáo dục đại học [Digital transformation in higher education institutions]. <https://www.quanlynhanuoc.vn/2021/11/02/chuyen-doi-so-trong-cac-co-so-giao-duc-dai-hoc/>
- Nguyen, T. N. X., & Le, D. N. (2020). Đề xuất tiêu chuẩn khung đánh giá văn hóa chất lượng trường đại học [Proposing framework standards for assessing university quality culture]. *Education Magazine*, special issue April, 107-110.

ẢNH HƯỞNG YẾU TỐ VĂN HÓA CHẤT LƯỢNG ĐẾN QUÁ TRÌNH CHUYỂN ĐỔI SỐ: NGHIÊN CỨU TRƯỜNG HỢP TRƯỜNG ĐẠI HỌC TRÀ VINH

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TÓM TẮT

Chuyển đổi số đã có sự tác động tích cực đến nhiều lĩnh vực trong cuộc sống, trong đó có giáo dục. Trong quá trình thực hiện chuyển đổi số, yếu tố văn hóa chất lượng có ảnh hưởng không nhỏ đến chuyển đổi số. Bài viết phân tích các yếu tố văn hóa chất lượng ảnh hưởng đến quá trình chuyển đổi số ở Trường Đại học Trà Vinh. Dữ liệu được thu thập bằng phương pháp chọn mẫu thuận tiện, khảo sát 287 cán bộ quản lý và giảng viên đang làm việc tại Trường Đại học Trà Vinh. Các yếu tố ảnh hưởng đến quá trình chuyển đổi số trong nhà trường được đo lường và xác định thông qua kiểm định độ tin cậy Cronbach's alpha, phân tích nhân tố khám phá và hồi quy tuyến tính. Kết quả nghiên cứu cho thấy có 5 yếu tố ảnh hưởng đến ảnh hưởng đến quá trình chuyển đổi số theo mức độ khác nhau, đó là: 1) Giá trị thuộc lĩnh vực học thuật; (2) Giá trị thuộc lĩnh vực xã hội; (3) Giá trị thuộc lĩnh vực nhân văn; (4) Giá trị thuộc lĩnh vực văn hóa; (5) Giá trị thuộc lĩnh vực cơ sở vật chất và nguồn học liệu.

Từ khóa: văn hóa chất lượng; chuyển đổi số; Trường Đại học Trà Vinh