International Journal of Knowledge Processing Studies
(KPS)
Homepage: http://kps.artahub.ir/

ORIGINAL RESEARCH ARTICLE

Fitness of Agile Strategy in Education Departments with a Knowledge Transformation Approach

Mohammad Reza Gharbi Jahromi[1], Moslem Salehi[2*], Mozhgan Amirianzadeh[3], Ebad Allah Ahmadi[4]

[1] *Ph.D. Student of Educational Administration, Marvdasht branch, Islamic Azad University, Marvdasht, Iran*
[2] *Assistant Professor Department of Educational Administration, Marvdasht branch, Islamic Azad University, Marvdasht, Iran.*
[3] *Assistant Professor Department of Educational Administration, Marvdasht branch, Islamic Azad University, Marvdasht, Iran.*
[4] *Professor Department of Educational Administration, Marvdasht branch, Islamic Azad University, Marvdasht, Iran*

ARTICLE INFO

Article History:
Received: 2022/07/28
Revised: 2022/08/06
Accepted: 2022/08/24
Published Online: 2022/09/01

Keywords:
Agility Strategy
Educational Organization
Knowledge Era
Knowledge Transformation

Number of Reference: 24
Number of Figures: 3
Number of Tables: 5

DOI: 10.22034/kps.2022.353791.1038

Publisher:
Ayande Amoozan -e- ATA (AAA)

ABSTRACT

This research aims to fit the agile strategy in education departments with the knowledge transformation approach using the partial least squares method. The fitness of agile strategy in Fars education departments was adapted to the knowledge transformation approach with the partial least squares technique. A questionnaire was used as the research tool. The partial least squares structural equation technique in SMART PLS software was used in this research. The validity and reliability of the questionnaire were confirmed. The population included all managers in education and organizational decision-making in education and training. From a total of 173 people, based on the Morgan table, 119 people were selected as the study sample through a simple random method. Agility is divided into 5 main topics: maturity, visionary leadership, structural flexibility, knowledge-oriented and social orientation. Based on the results obtained from the structural equation model, the path coefficient in all hypotheses was higher than 0.3. The significance level in all hypotheses was less than 0.05 (0.00). With confidence of 0.95, it can be said that all the hypotheses were confirmed. De-complexity, community-oriented, and knowledge-oriented are also considered other pillars of agility Education, as a knowledge-creating organization, works in a coordinated and coordinated manner by creating an agile environment, and in this way, it provides the platform needed to increase the flow of information in order to create new knowledge and increase added value in its economic fields. **©authors**

►**Citation (APA):** Gharbi Jahromi, M., Salehi, M., Amirianzadeh, M. & Ahmadi, E. (2022). Fitness of Agile Strategy in Education Departments with a Knowledge Transformation Approach. *International Journal of Knowledge Processing Studies(IJKPS)*, 2 (4), 54-65. DOI: 10.22034/kps.2022.353791.1038

***Corresponding Author: Moslem Salehi**
Email: msalehi@yahoo.com
ORCID ID:

1. Introduction

Knowledge sharing behavior is a vital element of knowledge management systems that plays an important role in the dynamism and agility of the organization (Ton et al, 2022). In today's world, all organizations and their environment are facing a continuous increase in instability, chaos and continuous changes (Chan & Muthuveloo, 2020). In order to reduce the effects of these changes and to use the available opportunities as well as to reduce response time and improve flexibility, a completely new form of organizations should be created (Menon & Suresh, 2020). In all these organizations, there is competition in different dimensions (Elali, 2021). These dimensions include: the speed of providing services to customers, increasing the quality of providing services, providing services with products at the best possible time (Franco et al, 2021). Therefore, in order to achieve these goals, organizations and their employees should move towards increasing flexibility, preparing for changes and welcoming them, acquiring more competence, increasing the production and exchange of information, preparing to face unforeseen events they should become more agile (Javidi et al, 2013). Formal and public education is considered one of the most key components for survival in the age of knowledge and digital developments and an opportunity for the development of digital education. It is also considered the most important institution for training human resources and generating social capital of the society, which covers the range of kindergartens and preschools to universities as It involves sovereignty. The Ministry of Education and other related and interested institutions together realize this national and social issue (Abolqasmi et al, 2018).

Despite the efforts of the authorities and the honorable ministers of education in recent decades, the speed and direction of the implementation of the fundamental reform has not been able to meet the expectations of the Supreme Leader and the people. The lack of noticeable change in the output and even the drop of some of them is a proof of this claim. The Covid 19 conditions have also underpinned some of these challenges to become more prominent and even caused new challenges to arise (Nowrozali, 2021).

Due to the centralized, bureaucratic and inefficient structure of the Ministry of Education, the unbalanced distribution of human resources in terms of quantity, quality and gender, the significant lack of human resources needed in the coming years, the shortcomings of the evaluation system and the quality assurance of educational services, and the lack of a formal and general education evaluation system at the national level and in many other cases, organizational agility is felt more than ever in education and training (Heidari & Zanganeh, 2021).

Unfortunately, today, due to different reasons, the country's education is unable to respond to the needs of the society based on its high goals and has faced many problems in providing services and training efficient human resources (Norozali, 2021). Getting rid of existing shortcomings and inefficiencies and achieving dynamic and successful education and training requires a deep transformation in this institution so that by reproducing all the factors affecting the success of this system, it is possible to facilitate the realization of the goals by optimally using the resources and opportunities ahead (Chan et al., 2020).

In the age of information and electronic communication, every organization is facing rapid changes. The institution of education is one of these organizations that plays a major role in the use of digital technologies in education. The requirement of an effective educational design is the use of technology. Educational design is the prediction and regulation of educational events based on the goals, content and available places according to the characteristics and structure of students. The purpose of this article is to investigate the role of digital technology in educational design and learning transfer. With these descriptions, education should be

agile so that it is sensitive to environmental changes and has the necessary speed to adapt to them, one of the new ways to respond to the factors of educational change and transformation is agility (Ananthram et al, 2019). In fact, agility is considered a new paradigm for the engineering of educational organizations and departments, and the educational organization, like other organizations, must be able to design itself in an agile manner in order to respond to a set of internal and external forces, in this case, it can easily survive with the occurrence of sudden events and changes. It becomes more compatible and powerful and responds quickly to sudden changes and the needs of applicants. In order to create such an organization, various strategies are proposed to implement the agile model in education (Harraf, 2013). Schools are considered to be the most complex social organizations in today's era, and several factors must be aligned to guide them (Cascavilla et al, 2022).

Since the organizational structure of the education department is one of the dimensions that plays a very important role in the adaptation of the school to the external environment, educational management theories and researches have challenged the idea of educational organization as a bureaucratic structure (Harraf, et al, 2017). Departments of education and training are considered as the highest coordination centers of thought-training and science production in the society, and with the presence and activity of students, they play an essential role in the direction of scientific improvement and guiding the intellectual, religious, cultural and political activities of the society (Doz et al. et al., 2018). Employee agility is one of the most important concerns of organizations. Therefore, identifying the factors affecting organizational agility seems essential. Research attention has been directed to the investigation of the relationship between technical and technical components with agility, including the human aspect of agility, and it is argued that human capital has an impact on organizational agility (Ravichandran, 2018). Considering the issue of globalization, organizations are facing many challenges in their work environment and they are facing many problems to deal with these challenges (Sherehiy, 2018). In this field, agility aims to help organizations to advance their goals and reach the point of growth (Olson, 2021). Organizational agility is actually a response to environmental needs. Today's organizations seek to improve their capabilities to provide services in the shortest time with the lowest cost, improve quality and create innovation in their services. Generally, today's environment demands more flexibility from organizations, which can be solved by organizational agility (Rafi et al, 2021). Agility to the performance of employees and the organization requires constant preparation to face radical and superficial changes in digital education, and in a word, the agile organization is always ready to learn anything new that increases profitability to take advantage of new opportunities. Therefore, one of the important pillars of organizations in moving towards organizational agility is human resources and capital (Menon et al, 2020). Educational researchers believe that the traditional structures of the organization are unable to manage the complexities of the school and its connections with the digital era, and it is not possible to coordinate and control the processes and systems of education in the 21st century with traditional structures. (Andriyani et al, 2017). In order to improve decision-making systems and mechanisms and coordination with the external environment, they all emphasize the need to change the structure of the organization and make the structure as flexible as possible. Therefore, this research seeks an answer this question: what is an appropriate agility strategy in education departments using a knowledge transformation approach?

2. Literature Review

Agility and the ability to quickly respond to the external environment have become a necessity, and in the 21st century, agility is no longer a matter of choice for business organizations (Misheh, 2017). It distinguishes successful organizations from those that fail. This is combined with market pressure forces where successful business practices are imitated globally. These constant changes require quick response and adaptation. However, the inherent need to grow and become a competitor in the respective industries hinders the ability of organizations to be flexible and respond quickly to market changes. The market often hinders the ability to detect and respond quickly to changes that could otherwise improve competition (Nasiri & Navidi, 2019). There is no basic formula for developing an agile company. A company can become incrementally agile, but never distinctly agile (Alzoubi et al., 2015).

Agility is an ongoing process, much like continuous improvement. Organizational agility, rather than becoming a subject (Alzoubi, et al., 2015; Doz & Kosonen, 2018; Holsapple and Li, 2018; Williams et al., 2014), is considered a core competency. Strategic thinking is an innovative way of thinking, taking advantage of changes and the relentless need to adapt and be proactive. Therefore, instead of a choice, agility becomes a necessity for survival of digital transformations in digital education. At a basic level, agility can be divided into two distinct parts: flexibility and adaptability (Falance, 2016; Holsapple and Li, 2018).

With these descriptions, education should be agile so that it becomes sensitive to environmental changes and has the necessary speed to adapt to them. One of the new ways to respond to the factors of educational change and transformation is agility. In fact, agility is considered a new paradigm for the engineering of educational organizations and departments, and the educational organization, like other organizations, must be able to design itself in an agile manner in order to respond to a set of internal and external forces, in this case, with the occurrence of sudden events and changes it does not fail and becomes more consistent and powerful and responds quickly to sudden changes and the needs of applicants. In order to create such an organization, various strategies are proposed in order to implement the agile model in education (Ghiashi Nadosh, 2018).

It responds quickly to the needs of applicants. In order to create such an organization, various strategies are proposed in order to implement the agile model in education (Ghiashi Nadosh, 2018). The results of the research by Abolqasmi et al. (2017) in the field of providing a model for education and training agility showed that the model presented in the field of organizational agility has a good comprehensiveness. Several factors affecting the organizational agility process are known, and these factors also affect and influence the organizational agility process as input. However, the output of the model, which are effective factors, is introduced and placed in the model in the form of job satisfaction, competitive advantage, and productivity. These factors are affected by the agile process and are in fact its consequences. In the following, internal and external research related to organizational agility have been discussed:

Menon and Suresh (2020) in their research entitled "Effective Factors in Organizational Agility in Higher Education" state that the purpose of this article in the first stage is to discover the factors that can facilitate agility in higher education and then analyze the interrelationships between the factors. According to the literature review and the use of experts' opinions, eight factors that can promote agility in higher education were identified, which included the ability to understand the environment, organizational structure, information technology, organizational learning, human resource strategies, leadership, preparation for change, and collaboration. Based on the presented

model, leadership was shown as the most important factor, followed by human resource strategies and organizational structure. This model identified and prioritized all important drivers of agility that can help universities and colleges design, adopt, and implement policies and practices that facilitate agility.

Busse and Weidner (2020) in their research entitled "Increasing agility to strengthen organizational performance: considering critical factors" found that by developing and strengthening a set of dynamic core capabilities, organizations are more likely to survive and thrive in today's unpredictable business environment. A special emphasis on organizational agility in the business process and balanced agile project management can better position it to meet customer needs as they evolve.

Chan and Muthuveloo (2020) in their research entitled "Critical Organizational Capabilities for Organizational Agility: An Empirical Study" state that the purpose of their study was to investigate the organizational capabilities required for agility among private higher education institutions in Malaysia in a turbulent environment. The study discovered that all three organizational structures enable organizational agility and significantly affected the organizational performance in higher education institutions. Also, the results showed that private higher education centers need organizational learning to strengthen their organizational agility so that they can optimize organizational performance. The more flexible an organization's structure, the more agile that organization will be and it can change with innovative technologies and speed and win over competitors (Hajikamangar, 2015).

In this regard, we can refer to mechanical and organic structures. Mechanical structures are the result of a closed environment and the authority and control of most things are done in a centralized and standardized manner. In such structures, intra-organizational communication is defined based on the hierarchy and positions of an organization. It is managed mechanically, but on the contrary to organic structures, the structure is not absolute, the hierarchy is less and the complexity and variety of positions are less, therefore, most of the employees and stakeholders are partners in the decisions (Veisi, 2021).

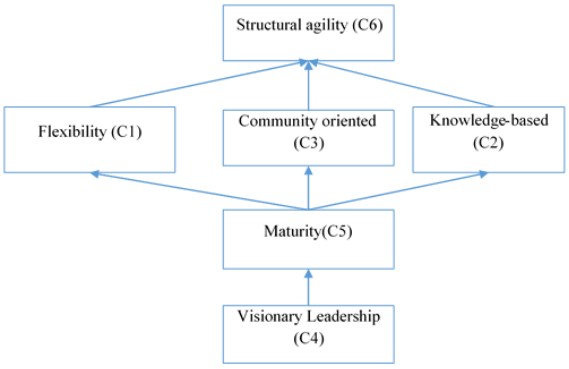

Figure 1. Adaptation of agile strategy in education departments with knowledge transformation approach

Innovations in higher education, due to its computerization, and more impressive mixing of information and communication technologies, are becoming more and more common.

Based on the proposed model, the topic of virtual education in the education organization is one of the important topics that our educational system today. It is obvious that digital education has put pressure on the body of education and has caused problems for teachers, parents and the educational structure of the country. Therefore, it is necessary to create an agile strategy to move forward in the digital age, so that the negative aspects can be reduced and the positive aspects can be enhanced.

3. Methods

From the point of view of the purpose of this study, it is an applied research that has been carried out with the aim of validating the organizational agility of the Education Department. Data were collected using a survey questionnaire. The partial least squares structural equation technique was used for the analysis. Validity and reliability

of the used questionnaire were confirmed. In order to investigate the relationship between the organizational agility factors and the educational performance of the education and training organization, the relevant questionnaire was distributed among all managers related to education and organizational decision-making in education and training. The number of these people at the time of this research was estimated to be 173 people, based on the Morgan table, the statistical sample of the study was 119A simple random method was used for sampling. In order to fit the identified pattern, partial least squares method was used in SMARTPLS software. "Structural equation modeling" is a consistent statistical method that deals with the relationships between observed variables and latent variables. With the expansion of the complexities of the research process and the emergence of various social issues in the field of social and behavioral sciences, the interests of researchers for statistical analysis and evaluation and the use of advanced statistical methods have encouraged them to use advanced statistical techniques such as the SEM method. This type of modeling, which simultaneously examines a set of correlation relationships, is useful when a dependent variable becomes an independent variable in subsequent correlation relationships.

4. Findings

In order to describe the main variables of the research, indicators such as average, standard deviation, and others were used. These indicators are presented in Table 1.

Table 1. Descriptive statistics of research variables

Main factor	Average	standard deviation	Variance	Skewness	Kurtosis
Flexibility	4.45	0.713	0.509	-1.368	1.992
Knowledge oriented	4.15	0.636	0.404	-1.153	1.553
Socialism	4.06	0.668	0.447	-0.632	1.159
Insightful leadership	3.86	0.744	0.553	0.961	1.933
Maturity	3.84	0.791	0.626	-0.651	0.296
Structural agility	3.77	0.871	0.759	-0.649	0.138

Descriptive statistics including mean, standard deviation, variance, skewness, and kurtosis were used to check the status of research variables. According to the average values obtained, it is clear that the average flexibility of the option (high) was higher among the answers. The highest mean of the variable is higher than the others. Also, based on the values of skewness and kurtosis, the obtained values are in the interval (2, -2), and the data have symmetry and a normal distribution.

In the current research, structural equation modeling methods, namely the partial least squares (PLS) method, was used to test the measurement model and research hypotheses. PLS software is less dependent on sample size, does not require normality of data, and focuses on variance maximization.

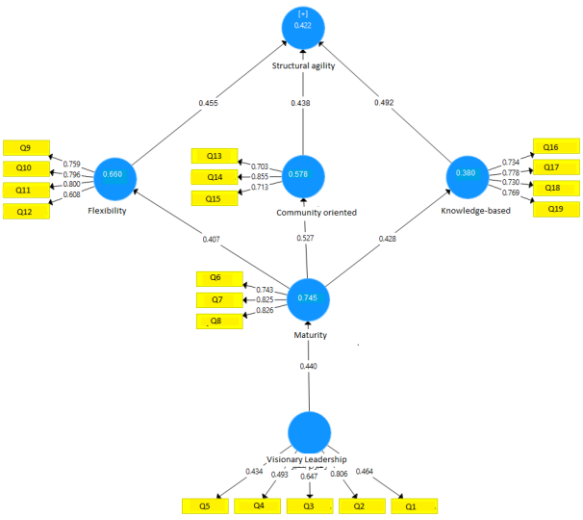

Figure 2. Factor loading of the research model (external model)

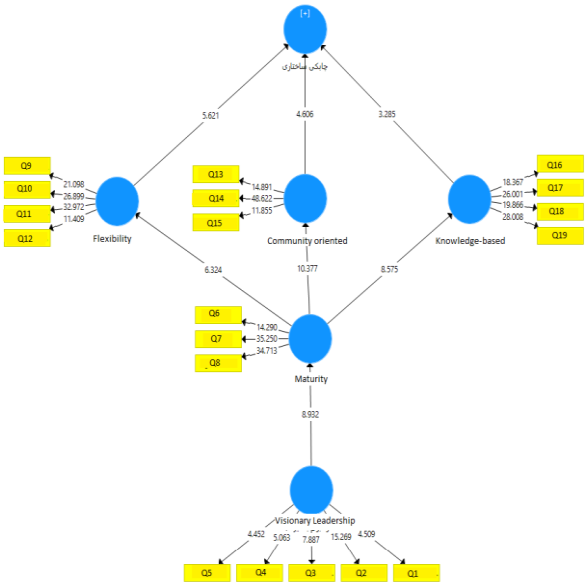

Figure 3. Bootstrapping t statistic of the research model (external research model)

Cronbach's alpha, composite reliability (CR), Rho index, convergent validity (AVE) and divergent validity (Fornell-Larker) are calculated and presented to check the external validity of the measurement models in partial least squares structural equations. The following relations are supposed to be:

CR>0.7

CR>AVE

AVE>0.5

Table 2. Convergent validity and reliability of research variables

Variable	Cronbach's alpha	AVE	CR	Rho
Flexibility	0.726	0.563	0.816	0.730
Knowledge oriented	0.722	0.519	0.853	0.761
Socialism	0.738	0.534	0.740	0.793
Insightful leadership	0.764	0.538	0.755	0.754
Maturity	0.865	0.530	0.801	0.765
Structural agility	0.790	0.566	0.852	0.814

According to the results of the above table, Cronbach's alpha of all variables is greater than 0.7, so all variables are confirmed in terms of reliability. The value of average variance extracted (AVE) is always greater than 0.5, so convergent validity is also confirmed. The value of composite reliability (CR) is also greater than AVE and 0.7, and each of the constructs of the model has good validity and reliability. Also, the homogeneous reliability coefficient (Rho) was obtained above 0.7. The main characteristic of the Fornell and Larcker matrix is that the principal diameter is one. Then we replace the values on the main diameter of the matrix with the square root of the variance values described in AVE, and finally Table 3 is presented.

Table 3. Fornell and Larcker method

	Flexibility	Knowledge oriented	Socialism	Insightful leadership	Maturity	Structural agility
Flexibility	0.853					
Knowledge oriented	0.834	0.895				
Socialism	0.825	0.860	0.867			
Insightful leadership	0.792	0.845	0.872	0.889		
Maturity	0.753	0.840	0.865	0.870	0.891	

Structural agility	0.736	0.793	0.804	0.860	0.853	0.890

As shown in Table 3, the values on the main diameter of the matrix are greater than all the values in its corresponding column, and it indicates that the presented model has good divergent validity. Recent research by (Hesler et al, 2015) shows that the Fornell-Larker criterion does not work well when the factor loadings of the constructs differ slightly. Therefore, Hensler et al. have proposed the HTMT criterion as an alternative. If the values of all the numbers listed in the columns in this method are less than 0.9, the model will have appropriate divergence validity.

According to Table 4, the value of the numbers obtained is less than 0.9, so the validity of HTMT divergence is acceptable.

In the general model of the research, which is presented in the figures below, the measurement model (the relationship between each of the observable variables and the hidden variable) and the path model (the relationship between the hidden variables) have been calculated. In Figure 2, the factor load of the research variables is presented. In this model, which is the output of SmartPLS software, a summary of the results related to the standard factor load of the relationships of the research variables is presented. To measure the significance of relationships, the t-statistic was calculated using the bootstrapping technique, which is shown in Figure 3.

Table 4. Results of the HTMT method to check divergent validity

	flexibility	knowledge oriented	Socialism	Insightful leadership	Maturity	Structural agility
flexibility						
knowledge oriented	0.820					
Socialism	0.729	0.733				
Insightful leadership	0.738	0.649	0.645			
Maturity	0.719	0.745	0.730	0.805		
Structural agility	0.845	0.487	0.591	0.630	0.817	

To measure the significance of relationships, the t-statistic was calculated using the bootstrapping technique, which is shown in Figure 3. The test of the research hypotheses is also presented below based on the relationships of each of the variables separately. In this part, based on the results of partial least squares calculation based on factor loading and bootstrapping, research hypotheses have been examined:

Based on the results obtained from the structural equation model, the path coefficient in all hypotheses is higher than 0.3. The significance level in all hypotheses is less than 0.05 (0.00). Therefore, with a confidence of 0.95, it can be said that all the hypotheses are confirmed.

Table 5. Examining research hypotheses and model path analysis

hypothesis	Path coefficient	T	Significance level	Condition
Insightful leadership has a significant impact on maturity.	0.440	8.932	0.000	confirmation
Maturity has a significant effect on knowledge orientation.	0.428	8.575	0.000	confirmation
Maturity has a significant effect on community orientation.	0.527	10.377	0.000	confirmation
Maturity has a significant effect on flexibility.	0.407	6.324	0.000	confirmation
Knowledge-oriented has a significant effect on structural agility.	0.492	3.285	0.000	confirmation
Community orientation has a significant effect on structural agility.	0.438	4.606	0.000	confirmation
Flexibility has a significant effect on structural agility.	0.455	5.621	0.000	confirmation

5. Discussion and conclusion

Every organization strives to have a suitable organizational structure to increased productivity, o increased customer satisfaction, services, more profit for the organization, and lead to the success of that organization. In a flexible organizational structure, employees can perform their work duties effectively by being aware of customer needs and making timely decisions. Marjerison et al, (2022) showed that agility based on the knowledge of this structure creates more freedom for employees and helps them to play a more active role in the organization and not just be mere spectators.

Virtual space and virtual education is a pervasive reality that has affected all the surrounding realities to the extent that sometimes it seems that the influence of virtual space in education and some matters has gone out of control. The current research was carried out to adapt the agile strategy in the age of knowledge and digital education. The model for the organizational agility of the Education Department was fitted with the partial least squares technique. Agility is divided into 5 main themes: maturity, visionary leadership, structural flexibility, knowledge-oriented, and community orientation. Based on the results of the structural equation model, the path coefficient in all hypotheses is higher than 0.3. The significance level in all hypotheses is less than 0.05 (0.00). With confidence of 0.95, it can be said that all the hypotheses were confirmed. In justifying the network of themes of organizational agility, it can be said that one of the main stages for any change is the maturity of that organization. The resistance of managers at this stage of the work is high. Work values are low, but on the other hand, potential abilities are high. But they are not yet ready to implement the change. Dyer (2018), thinks that the readiness for change is defined by the views and positive opinions of the employees about the need for change and the positive consequences resulting from the efforts related to the change for the employees and the organization, as well as the readiness for the beliefs and attitudes, the conscious intention of the members of the organization towards The changes that are required and the organizational capacity to successfully implement these changes are defined (Totkzadeh & Sharifi, 2016). Also (Abolqasemi et al, 2018), showed that different dimensions of flexibility, culture, speed, responsibility, competence, accountability, and integration are adequate for the agility of the organization of education departments under investigation.

Visionary leaders are people who primarily have the power of visualization, foresight, and visualization of the future, and with their high intelligence, they formulate a correct, realistic, and inspiring vision for their environment. (Conboy et al, 2019), stated that visionary leadership characteristics are foresight, accountability, human resource development, motivational culture, and technology-oriented. It is important to know the role of technology, to introduce employees to new technologies, to use modern technologies, to have various hardware and software, to be equipped with modern hardware and software, and to

facilitate access to hardware and software (technology-oriented). It plays a very important role in coordinating and creating agility. (Kikha et al, 2020), showed that flexibility plays a fundamental role in organizations to maintain their survival in an uncertain and unpredictable environment of digital education. Flexibility in the organization is one of the basic concepts in organizational agility based on which the organization can adapt to environmental changes (Falance, 2016). One of the effects of interaction in teaching and learning is its social effect because, in the process of interaction, students influence each other in the form of a group and have common goals, so this type of interaction has many social and educational effects. On the other hand, artistic interaction, which we refer to as aesthetics or artistic dimensions in teaching, is also influenced by interaction. In the same way, the interaction between the teacher and the students has a great educational effect because many educational goals are achieved through direct and unmediated interaction, but according to these issues, virtual space has made interaction, a possibility, and context Effective education should be taken from the teacher and students. Based on this, teachers in today's world, in addition to conventional and specialized education literacy, also need digital literacy. Based on the model, it is clear that if digital literacy is not achieved in today's education process, problems will follow and teachers in other sectors will not achieve the necessary success because, in today's world, much knowledge and information are published in cyberspace before printing. For a digital literacy teacher, it includes basic computer literacy, knowledge of internet networks, computational knowledge and thinking, and multimedia content production. Naturally, teachers who have high digital literacy can obtain scientific and methodological findings sooner. On this basis, we must know what our students need in the virtual space because it is possible that situations like Covid-19 might be repeated in today's world and we may face similar factors. Therefore, it is necessary to provide solutions to the necessary skills of students and teachers based on the agility strategy.

Based on the obtained results, it is suggested that:

-In order to improve the agility of the organization, the leadership of education needs to institutionalize planning and digital infrastructure.

-Due to the flexibility feature, the education organization should provide flexible programs for the implementation of digital strategies.

- The skill of self-discipline is considered as a basic skill in today's education process, so it should be strengthened in students. Students need main rules to learn in virtual conditions, one of which is the correct understanding of learning goals, or in other words, formulating individual goals for effective learning. Management of the learning process is another important element. Therefore, students in cyberspace should know this well so that they can evaluate their performance and behavior in this space. Therefore, these skills are called self-regulation. Of course, this skill has other dimensions, but these sides and elements are important now.

- Students should be able to understand situations and move towards goals by managing change and developing a wide range of techniques for different conditions. The fourth axis is emotions and reactions, so students should be able to understand the importance of enjoying success and managing disappointment.

In the same way, it is necessary to share strategic concepts and ideas and use the views of others.

- Gamification is another interesting trend due to the widespread use of the Internet, social media and WordPress. This work encourages thinking games and playing games in non-game fields. Along with social networks implemented in e-learning environments, gamification has been implemented for student assessment. A recent study confirms that with gamification, the acquisition of skills is better, while elements of understanding and awareness play a role.

- Programming and digital literacy plan should be presented. The 5 axes of this plan include: "The impact of computers on life with topics (career paths, access, society, behaviors and ethics)", "Computational thinking with topics (modeling and simulation, data analysis and visualization) creating, summarizing and recombining, programming algorithms), "Communication networks and system design (hardware and software, communication networks and the Internet)", "Cyberspace security (dangers, protective measures, feedback)" and "Digital literacy (digital citizen, the use of digital technology).

- Digital technology should be implemented to enable active forms of learning in which learners can control their study and knowledge collection, produce input to digital repositories, and benefit from the benefits of using social media. In addition, social media facilitates the creation of personal learning environments, providing learners with the opportunity for independence and self-regulation.

Funding

This research did not receive any specific grant from funding agencies in the public, business, or not-for-profit sectors.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

Abolghasemi, M. Sharifi, A. Asghar, I. Mohammad T. (2018). Provide a comprehensive model for streamlining the country's education departments. *Research in educational systems*. Special issue. 902-934.

Ananthram S. & Nankervis A. (2019). Strategic agility and the role of HR as a strategic business partner: An Indian perspective. *Asia Pacific Journal of Human Resources* 51(4): 454-470.

Andriyani Y., Hoda R. & Amor, R. (2017). Understanding Knowledge Management in Agile Software Development Practice. *Knowledge Science, Engineering and Management*, 10412: 195-207.https://doi.org/10.1007/978-3-319-63558-3_17

Cascavilla, I., Hahn, D. & Minola, T. (2022). How You Teach Matters! An Exploratory Study on the Relationship between Teaching Models and Learning Outcomes in Entrepreneurship Education. *Adm. Sci*. 12, 12. https://doi.org/10.3390/admsci12010012

Chan, J. & Muthuveloo, R. (2020). Antecedents and influence of strategic agility on organizational performance of private higher education institutions in Malaysia. *Studies in Higher Education*, 8: 1-22.

Conboy, K. & Fitzgerald, B. (2019). Toward a conceptual framework of agile methods: a study of agility in different disciplines. *In Proceedings of the 2004 ACM workshop on Interdisciplinary software engineering research*: 37-44. https://doi.org/10.1145/1029997.1030005

Doz, Y. & Kosonen, M. (2018). *Fast Strategy*. Wharton School Publishing.

Dyer, L., & Shafer, R. A. (1998). From human resource strategy to organizational effectiveness: Lessons from research on organizational agility.

Elali, W. (2021). Elali, W. (2021). The importance of strategic agility to business survival during corona crisis and beyond. *International Journal of Business Ethics and Governance*, *4*(2), 1-8. https://doi.org/10.51325/ijbeg.v4i2.64

Falance, T. (2016). *Cultivating Organizational Agility*. The Columbia Group.

Franco, C. Landini, F. (2021). Organizational drivers of innovation: The role of workforce agility. *Research Policy*, 2: 1-13. https://doi.org/10.1016/j.respol.2021.104423

Harraf, A. (2013). Strategic Agility: A Required Core Competency in New Normal. *2013 Eurasia Conference*. Istanbul, Turkey.

Harraf, A., Wanasika, I., Tate, K., & Talbott, K. (2017). Organizational agility. *Journal of Applied Business Research (JABR)*, *31*(2), 675-686. https://doi.org/10.19030/jabr.v31i2.9160

Kikha, Z. Clever, M. Akbari, A. & Falah, T. (2020). Providing a model of organizational agility in education departments based on information technology approach. *Education in Law Enforcement*, 29: 101-120.

Marjerison, R. K., Andrews, M., & Kuan, G. (2022). Creating sustainable organizations through knowledge sharing and organizational agility: empirical evidence from China. *Sustainability*, *14*(8), 4531. https://doi.org/10.3390/su14084531

Menon, S. & Suresh, M. (2020). Organizational Agility Assessment for Higher Education Institution. *The Journal of Research on the Lepidoptera*, 51: 561-573. https://doi.org/10.36872/LEPI/V51I1/301050

Mische, M. A. (2017). *Operational Excellence & Organizational Agility*. University of Southern California.

Nasiri V. & Navidi P. (2016). The Relationship between Professional Ethics and Organizational Agility: The Mediating Role of Cognitive Empowerment. *Ethics in Science and Technology*: 11 (2): 68-61.

NowruzAli, A. (2021). Investigating the role of organizational learning and knowledge management on organizational agility (Case study: Shahroud Social Security Organization). *Journal of Accounting and Management Vision*, 42: 9-21.

Olson, E. (2021). Facilitating organization change. *Lessons from Complexity Science*. ISBN 10-7879-5330-X.

Rafi, N., Ahmed, A., Shafique, I. & Kalyar, M. (2021). Knowledge management capabilities and organizational agility as liaisons of business performance. *South Asian Journal of Business Studies*. https://doi.org/10.1108/SAJBS-05-2020-0145

Ravichandran, T. (2018). Exploring the relationships between IT competence, innovation capacity and organizational agility. *The Journal of Strategic Information Systems*, 1(27): 22-42. https://doi.org/10.1016/j.jsis.2017.07.002

Sherehiy B (2018). Relationships between agility strategy, work organization and workforce agility. *University of Louisville.*

Thomas, N. (2021). Towards agile knowledge management in an online organization. *Procedia Computer Science*, 192: 4406-4415. https://doi.org/10.1016/j.procs.2021.09.217

Ton, A. D., Szabó-Szentgróti, G., & Hammerl, L. (2022). Competition within Cross-Functional Teams: A Structural Equation Model on Knowledge Hiding. Social Sciences, 11(1), 30.

Torkzadeh, J. & Abdolsharifi, F. (2016). Cohesion, readiness for change, organization, bank. *Applied Sociology*, 27 (4), 61-78.

Veisi H (2021). Organizational Learning in the Higher Education Institutions (A Case Study of Agricultural and Natural Recourses Campus of University of Tehran). *International Online Journal of Educational Sciences* 2(1): 21-36.