Digital Training Technology and Employee Coordination - Based on the Perspective of Social Exchange Theory

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Abstract: Studies have shown that digital technology is not fully coordinated with employees in the field of training. How to promote digital training technology and employee coordination has created new challenges for organizations. This article believes that the reason for the problem is that managers are over-pursuing technical performance and ignoring the diverse needs of employees, so that employees have no sense of fair and reciprocal exchange in training activities, which leads to the dilemma of coordination between employees and digital training technology. Promoting the coordination of digital technology and employees requires more attention to the needs of employees on the basis of grasping that employees are the core resources of the organization. Therefore, this article first discusses the current application status of digital training technology; secondly, analyzes the dilemma of digital training technology and employee coordination based on the perspective of social exchange theory; finally, proposes ideas and measures to promote coordination between digital training technology and employees. This research is conducive to analyzing the impact of new technologies on employees, and it can also provide enlightenment on how to design digital training practices that balance the needs of the organization and employees in the future.

Keyword: *Digital technology; Training; Social Exchange Theory; Diversified Needs Of Employees*

I. INTRODUCTION

With the development of digital technologies such as big data and artificial intelligence, the great value of the digital economy will trigger huge changes and innovations in the field of management, which will have a profound impact on business management and employees' working lifestyles. Due to the agile characteristics of digital technology, it has increased the ability of enterprises to respond quickly and make decisions, which in turn requires the improvement of the accuracy of human resources in acquisition, retention and use, so that advanced digital technologies such as artificial intelligence and big data are quickly applied to enterprise human resources management (Wei et al., 2021). In terms of human resources training, scholars believe that digital technology can develop personalized training programs based on employee characteristics, tailor training content for employees, and improve their performance and training efficiency (Mao and Hu, 2020; Zhao et al., 2019).According to theoretical research, digital technologies such as big data and algorithm analysis will help human resource training management to reach new heights.

However, the effect of digital training does not seem to be ideal. Practical research has not widely confirmed that digital technology has a positive effect on training management, and even has a negative impact on employees(Arnaud and Chandon,2013;Carlson et al.，2017; Piccoli et al.，2001).The results of practical research show that digital training technology and employees are not fully coordinated. Previous studies have discussed the negative impact of technology on employees' perception of fairness, internal motivation and satisfaction from the aspects of digital work environment, digital technology function, digital monitoring mode and digital communication, but there is a lack of discussion on the internal factors of technology application leading to employees' exclusion of technology. Since the coordination dilemma between digital training technology and employees is the result of multiple factors, discussing from a single technical factor also has a certain degree of one-sidedness.Based on the social exchange theory, this paper not only discusses the internal factors that cause employees to reject digital technology, but also interprets the coordination dilemma between digital training technology and employees from the perspective of the essence of training activities, which makes up for the shortcomings of previous studies with one sidedness and lack of discussion of internal factors, and provides a new theoretical perspective to solve the dilemma of digital training practice.

II. APPLICATION OF DIGITAL TECHNOLOGY IN TRAINING

The digital economy takes digital knowledge and information as the key production factors, and digital technology as the core driving force. Digital technology in a narrow sense refers to technologies such as encoding, processing, and storing numbers. Digital technology in a broad sense includes technologies such as big data, Internet of Things, cloud computing, and artificial intelligence(Yu and Li, 2021). In terms of human resources training, the application logic of digital technology can be roughly summarized as real-time collection of employees' personal attributes, work information, social interaction information and other data, automatic analysis based on deep data mining and algorithm management, and then provide personnel training suggestions to managers in a visual way to help managers make objective decisions(Leonardi and Contractor, 2018).Talent profiles is a common digital training technology. Managers rely on this technology to make human resource training decisions through visualized simplified data on employee characteristics. (Xie et al., 2021).

Talent profilescan enable managers to identify the learning and training needs of employees. Take AsiaInfo as an example. Through a complete set of digital management system, it comprehensively collects employee information and forms a visualized personal evaluation report. The report can show the individual's core characteristics, strengths and weaknesses, so as to realize online and real-time analysis of employee data, and provide suggestions for employee training activities.

According to the application status of digital training technology, digital training technology has the characteristics of high efficiency, objectivity, predictability, quantification and accurate control, which largely makes up for the defects of low efficiency, subjective training content and unpredictable training effect in previous training activities. However, technology is only an auxiliary means to improve the effectiveness of training activities. Effective training activities also depend on whether they contribute to the increase of organizational human capital, which depends on the use of technology and employees' acceptance of technology, that is, whether digital training technology is fully coordinated with employees.

III. COORDINATION DILEMMA BETWEEN EMPLOYEES AND DIGITAL TRAINING TECHNOLOGY

A. The negative impact of digital training technology on employee management

Existing research shows that organizations have not applied digital technology in training practice in full accordance with the recommendations of the current human nature hypothesis theory. Firstly, all employee information is divided into several dimensions in a simple and quantitative way, which makes managers more inclined to mine information from big data and give up direct observation and analysis of employees in the organization, resulting in the technical analysis results divorced from the actual situation of employees. Secondly, the increasingly data-based workplace and the opacity of algorithm logic make it easier for managers to change and guide employees' behaviors and ideas, which leads to the trend of organizational homogenization(Gal et al., 2020).

The efficiency of the organization's excessive pursuit of activities is the cause of the unreasonable application of digital technology. On the one hand, in the whole process of talent analysis, automation technology meets the purpose of the organization's pursuit of efficiency; On the other hand, relying on data to speak and objective and evidence-based analysis results seems to be more reliable and convincing than human analysis, so as to meet the purpose of the organization for employees to act according to the thinking mode expected by the organization.The application of digital training technology coincides with Taylorism. The concept of "tyranny of the clock" has been replaced by the "tyranny of algorithms" in the practice of digital training(Duggan et al., 2020). In the era of individual value awakening, digital training practices with high-intensity management methods are bound to cause strong rejection of employees.

B. Negative feedback from employees on digital training technology

The acceptance of digital training technology by employees mainly depends on whether the way the technology is used and the analysis results of the technology meet the needs of employees in training. The training needs of employees mainly include two aspects. On the one hand, whether the training process shows respect for employees, and on the other hand, whether the results of the training help employees' career development and self-worth realization. The above two aspects depend on employees' subjective feelings, but the current use of digital training technology obviously violates employees' psychological expectations. As the training needs of employees have not been met, the coordination between digital training technology and employees will also be affected.

Existing research shows that digital training activities can induce employees' emotional perception, active adaptation, passive adaptation, and resistance behaviors(Xie et al., 2021).In terms of emotion perception, existing studies based on self-determination theory and questionnaire survey methods show that digital surveillance reduces employees' perception of autonomous support, thereby impairing their motivation for work(Stanton and Julian, 2002).And different modes of digital monitoring have a negative impact on job satisfaction, organizational commitment and self-efficacy(Jeske and Santuzzi, 2015).Scholars also discussed the negative impact of digital monitoring on employee satisfaction based on the job demands-resources model, which in turn led to the tendency of employees to leave their jobs(Colbert et al., 2016). In terms of adaptive behavior and resistance behavior, the digital distance generated by digital technology makes it easier for employees to manage impressions(Stone et al., 2015). Powerful intelligent algorithm technology can recommend the behavior choices expected by the organization to employees, which will cause employees to rely on the results of algorithm technology recommendations, and reduce the opportunities for employees to use their own professional knowledge to make judgments and decisions(Kellogg et al., 2020; Raisch and Krakowski, 2020). In addition to adapting to technology, employees will also show resistance behaviors such as information game with the organization during the information collection and analysis stage(Boudreau and Robey, 2005).

From the status quo of digital technology application, it can be found that the negative feedback of employees is due to the organization's excessive pursuit of activity efficiency when conducting digital training activities, while neglecting to meet the needs of employees. This phenomenon is essentially that employees as a party to the exchange relationship did not get the expected results. This kind of activity that is not based on fair and reciprocal exchange can be interpreted by social exchange theory.

IV. ANALYSIS ON THE CAUSES OF THE DILEMMA OF DIGITAL TRAINING TECHNOLOGY AND EMPLOYEE COORDINATION

A. Social exchange relationships in digital training activities

Social exchange theory is used to test the behavior of getting rewards from others and the relationship called "exchange"(Gouldner, 1960). The theory believes that the subject of exchange can be economic resources, social

resources, or both(Wu et al., 2020). The premise of this theory is four principled relations:

1. exchange relations lead to economic or social output;
2. Cost benefit analysis is based on the output of harvest;
3. Over time, the benefits will increase the mutual trust and commitment of the exchange relationship;
4. Exchange norms and expectations are established and developed from mutually beneficial exchange relations.

The process of exchange in social exchange theory has the characteristics of bilateral, reciprocity, and interaction. The principle of fairness and reciprocity is the most important exchange rule and is subjective. Once at least one of the two parties believes that the exchange is not reciprocal, the exchange process will be damaged(Wu et al., 2020).

The digital training process conforms to the characteristics and premises of the theory. The exchange relationship between employees and the organization is a comprehensive process in which economic exchange and social exchange coexist. Training activities are used as a platform for individuals to seek goals and means for organizations to achieve goals, so that employees and organizations mainly have social exchanges during the training activities. In terms of digital training, organizations hope to obtain employee output through human capital investment; employees hope that organizations can collect information in a respectful way and analyze information in a humane way, so that technical analysis and recommendations can help them achieve their needs. The dilemma of coordination between digital technology and employees is that employees feel that the exchange cost is higher than the expected benefits, so they show a negative response to the exchange activities.

B. Analysis of the Dilemma of Digital Training Technology and Employee Coordination Based on the Theory of Social Exchange

Digital training activities include information collection stage, information analysis and decision-making stage and employee perception stage after training. Because employees' emotional dimension and behavior dimension will play a role in each stage, considering the different main performances of employees in different stages, this paper only analyzes the main performances of each stage.

1. Information gathering stage

The characteristic of this stage is that the organization applies a variety of information collection equipment to collect all-round and multi angle information from employees. At this stage, employees' judgment on whether the exchange relationship is fair and mutually beneficial depends on whether the way of technical information collection reflects their respect for employees. The employees' sense of respect at this stage comes from two aspects: the ease and freedom of the working environment and the rationality of the information collected.

An organization's basis for talent algorithm analysis is to have real-time updated employee information. The information collected by the past monitoring system is mainly for the safety of the organization's assets, and the psychological perception of employees is not affected by it. Once the information collected by the monitoring system involves the analysis of employees' daily behavior, it will make employees pay attention to their own words and deeds, and they are often in a state of mental tension. Another basis for the organization to conduct talent analysis is to have sufficient comprehensive employee information, which has led to the scope of information collection from within the workplace to outside the workplace, and expanded from work information to employees' physical and mental health, thus greatly increasing the probability of employees' privacy being violated. The two aspects of information collection have caused unnecessary psychological burdens on employees, making employees lack the sense of respect, and employees will perform "impression management" and other behaviors because they do not perceive a fair and mutually beneficial exchange relationship.

2. Information analysis and decision-making stage

At this stage, algorithm technology analyzes the collected employee information and provides employee training suggestions to managers. Employees' judgment on whether the exchange relationship is fair and reciprocal depends on whether or not the manager takes the employees' personal ideas into consideration when adopting technical analysis suggestions. The purpose of employees' work is not only to make a living, but also to fulfill their diverse needs. The analysis logic of technology is more to solve the problems existing in the organization, so that employees can timely and accurately grasp the knowledge and skills needed for the development of organizational strategy. Managers' over-reliance on the results of technical analysis reduces the face-to-face information exchanges with employees. As a result, the data analysis process only unilaterally conveys employee behavior information to managers, and employees' true needs lack communication channels. This lack of humanized talent analysis mode makes employees lack the sense of respect in digital training activities, and thus adopt behaviors such as confrontation with the organization.

3. Employee perception stage after training

This stage is the employee's perception of the effectiveness of the training after the training is over. The employee's judgment on whether the exchange relationship is fair and reciprocal at this stage depends on whether the training content contributes to the development of their careers. Unreasonable training content will reduce the enthusiasm of employees to participate in training, because the purpose of organizing training is inconsistent with the purpose of employees receiving training. The organization conducts training for the needs of strategic development, and employees are more concerned about their own future. Due to the continuous upgrading of technical functions, the work areas in which employees apply professional skills are constantly being replaced by technology, and the training content has also changed from a single professional knowledge and skills training to an ever-increasing number of digital tool operation training. The automated features of technical processing work seem to reduce the training pressure of employees, but it also causes employees to be

ignorant of the rules and logic behind the technical operation process. Especially for professional fields with strong practicality, employees have not mastered the in-depth professional knowledge and skills. Once the technical tools fail, it will lead to the embarrassing situation of employees not knowing how to deal with the work. Especially for the professional fields with strong practicality, employees do not master the deep-seated knowledge and skills of the profession. Once the technical tools fail, employees will not know how to deal with the embarrassing situation of work, which will have a negative impact on employees' career development, so that employees will question the content of training and reduce their enthusiasm for training activities.

Through the analysis of the information gathering stage, the training content decision-making stage, and the post-training employee practice stage in digital training activities through social exchange theory, employees' pursuit of respect, career development, and self-worth realization are not satisfied in the training activities. Therefore, the reason for the insufficient coordination between digital technology and employees is that the organization excessively pursues the efficiency of technology and ignores the diversified needs of employees, which makes employees lack the perception of fair and mutually beneficial exchange in training activities, thus showing negative feedback on digital training technology.

The analysis result based on the theory of social exchange does not mean to prevent the application of digital technology in human resource management. In many aspects, digital training activities are indeed more efficient than traditional training methods. What we need to do is to change management ideas, clarify the relationship between digital technology and people at the present stage, and on this basis, pay attention to the needs of employees while applying digital training technology, so as to better coordinate employees and technology.

V. PROMOTE COORDINATION BETWEEN DIGITAL TRAINING TECHNOLOGY AND EMPLOYEES

A. Ensure the dominance of employees in the application of technology

A clear understanding of the relationship between digital technology and humans is the basis for solving the problem of coordination between technology and employees.In the process of technology and human interaction, although any technology will affect human behavior, humans have a certain degree of decision-making power and leadership in understanding and using technology, that is, technology plays an auxiliary role in the relationship between the two parties(Taylor et al., 2001).

According to the previous description of the application status of digital training technology, talent profiles, as a representative technology in the current digital training field, is based on a large amount of data, mining hidden information in the data through algorithm technology, and then providing decision-making suggestions to managers. At present, researchers may have conceived more intelligent talent analysis technology, but the theoretical image of advanced technology proposed by

the current research does not fully represent the empirical reality of many contemporary workplaces(Leonardi, 2011). Since digital technology cannot completely replace human work, when problems need to be dealt with in ways such as emotion and advanced thinking, human initiative is more advantageous. Therefore, human resources are the core resources of the organization. When organizations apply digital technology, they should use it as a means to assist employees in their work. At the same time, they should pay attention to the needs and feedback of employees in the digital environment. Only by helping employees grow can they promote the development of the organization.

B. Managers should pay more attention to the satisfaction of employees' needs

In the research on the introduction of digital technology into organizations, scholars pay more attention to topics such as technological change, business model, and business innovation, but ignore the diverse value demands of employees in the process of digital transformation. In fact, the goal of introducing technology to improve organizational efficiency and effectiveness must ultimately be implemented in the transformation of employees' cognition and behavior, that is, whether the application of technology matches the employee's psychology and behavior. In the practice of digital training, the unmet needs of employees have caused employees to have negative feedback on the application of technology, and finally led to the organization of digital training activities that did not achieve good results. Therefore, managers should pay more attention to the value demands of employees, and mobilize employees' enthusiasm in the process of organizational digital transformation, so as to promote the full coordination of employees and digital training technology.

C. Specific measures to promote coordination between digital training technology and employees

To promote the coordination between digital technology and employees, we need to understand the needs of employees from the aspects of working environment, employee psychology, career planning and corporate culture, improve employees' participation in the digital transformation of the organization, promote the improvement of technical functions with employees' value demands, and finally make the application of digital technology more humanized. Specifically, it includes four aspects:

1. Improve the fairness of the digital environment. As one of the digital training technologies, digital talent analysis technology makes the dense information collection equipment in the working environment show the characteristics of accurate control, and managers are not within the scope of the personnel targeted by the monitoring equipment, but also give employees the impression of a tough management style. Employees' trust in digital talent analysis technology is inseparable from the design of a fair digital environment. Therefore, the information collection equipment in the workplace should not only be used for employees, but also managers should participate in the scope of personnel involved in information collection, which can not only enhance employees' perception of the fairness of the use of digital training technology, meet

employees' needs for a high and fair working environment, but also enable managers to better understand employees' feelings about the use of technology. So as to increase employees' recognition of digital talent analysis technology.

2. Increase the participation opportunities of employees in the digital training technology design link. Employees are more advocating participatory management. Managers should involve their subordinates in the design of digital technology, so that employees and managers can discuss the application of digital technology on an equal footing. During technical design, managers should refer to the design opinions of employees, let employees understand the program logic behind digital talent analysis technology, and reverse employees' prejudice that information collection is the means of organization control, which can promote employees' effective reflection on the results of technical analysis and trust in digital training technology. As a means of motivating employees, participatory management can make employees realize the strong sense of responsibility arising from the close relationship between their own interests and the digital transformation task of the organization, give employees a sense of achievement, and is also conducive to the coordination between digital training technology and employees.

3. Improve job analysis and career management. As the basic work of human resource management, job analysis can provide a clear basis for personnel training and training. As technology can replace part of the work content of employees, the value of employees' professional skills is reduced. The organization shall conduct a new job analysis, clarify the changes in job content caused by technological development, and take it as the basis of technical analysis, so as to select more targeted training content suitable for future career development for employees and enhance employees' recognition of the effectiveness of digital training technology. At the same time, managers should also combine the impact of digital technology on job prospects to help employees optimize their career development as an auxiliary means for employees to adopt digital training technology. Career planning can provide employees with diversified development opportunities and growth platforms to meet the needs of employees in pursuing the realization of self-worth and reduce their rejection of the organization's application of digital technology.

4. Create a learning organization. The learning organization is conducive to employees' recognition of digital training technology. The learning organization has the characteristics of supporting the learning environment and intensive learning, which meets the needs of employees to realize their self-worth and hope to be respected and trusted. Digital training technology can help learning organizations have efficient knowledge creation, acquisition and sharing systems, and improve the operability of knowledge application. Through the establishment of learning organization and the application of digital training technology, employees are encouraged to rely on their own interests to learn new technologies and use new technologies to improve their ability to solve problems, so as to increase employees' sense of self-efficacy and recognition of digital training technology, so as to make diversified talents contribute unique strength to the organization.

RESEARCH CONCLUSION

Digital transformation has become the main task facing organizations at present, and digital technologies such as artificial intelligence, big data, and machine algorithms have also brought unlimited possibilities for organizations to improve efficiency and benefits. This article discusses the reasons why digital technology does not fully coordinate with employees in the field of training based on the theory of social exchange. The reason is that while the organization is pursuing the efficiency brought by technology, it ignores the satisfaction of employees' needs, so that employees do not have a fair and mutually beneficial exchange perception during the training process, which leads to the rejection of digital training technology by employees.

The application of digital technology in the field of training is a general trend. In the current relationship between people and technology, employees are still the core resources of the organization, and the objective attributes of the powerful functions of technology are meaningful only when they are used by humans. Only when managers pay more attention to the diverse needs of employees can they promote a humanized digital environment and a good organizational digital atmosphere, thereby promoting the common development of the organization and employees. When the needs of employees are met, based on the principle of reciprocity of social exchange theory, employees will choose to stay on the organizational platform that can realize their value, so that both parties can benefit from high-quality social exchange. The strong belief of reciprocity also promotes the next round of digital training practice, thus forming a virtuous circle of organizing digital training activities.

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