Influencing Factors of Teachers' Sharing Behaviors of Digital Teaching Resources in Online Teaching Activities

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Liwen Wen
Medical College, Huanghuai University, Zhumadian, China
wenliwen@huanghuai.edu.cn

Abstract—A scale for the influencing factors of teachers' sharing behaviors of digital teaching resources in online teaching activities based on IMBP (Integrative Model of Behavioral Prediction) theoretical model and behavioral motivation theory was designed in this study. Then, the major influencing factors were explored. Results demonstrate that the Cronbach α and KMO values are 0.935 and 0.831, indicating good reliability and validity of the designed questionnaire. Sharing motivation and sense of self-efficacy significantly and positively affect the teachers' sharing behaviors in online teaching activities. In contrast to work stress with no significantly negative effects, awareness of knowledge protection has significantly negative effects on teachers' sharing behaviors. Sharing atmosphere provides complete and partial mediating effects on the negative effects of work stress and awareness of knowledge protection. The effects of school location (urban or rural), school type, and teaching age on teachers' sharing behaviors are all significant on the 0.05 level. The obtained conclusions provide important references to the strengthening of technological and teaching supports to teachers, create a generous sharing atmosphere of digital resources, and contribute to the deep and wide propagation of digital resource sharing.

Keywords—online teaching, teachers, digital resources, sharing behaviors, influencing factors

1 Introduction

The rapid development of computer technology and Internet has brought forth the large-scale construction of networks and significant growth of network-based mass data transmission capacity. As offline teaching activities are limited by region, teacher resources and education hardware resources seldom sufficiently achieve a good education effect. Online education can realize the digital remote sharing of education resources and allow users to choose education resources according to needs. Online education resource sharing can also help to diversify education resources and enrich education modes. The good interaction between online education and the Internet has significantly improved the learning efficiency of different learners. However, the traditional resource sharing system no longer can meet the current demands due to the

rapid development of networks and the enrichment of education resources. The process of online education development is indeed a process of sharing high-quality digital resources. In particular, new technologies, such as mobile Internet, artificial intelligence, and big data, are gradually being introduced into the education field. Therefore, building good digital online teaching resources through the cooperation of teachers and enterprises has become a new way of cooperation between schools and enterprises, enabling the expansion of high-quality digital resources to a much wider scope. Online teaching is based on a good Internet environment, and it can overcome spatial and temporal differences. However, online teaching poses much higher requirements on the teaching quality of teachers, and it needs further support in terms of high-quality digital resources. In the era of the knowledge economy, teachers—as the owners of knowledge—can participate in the development of online teaching resources with an open attitude and provide students with accurate online teaching education services. Given a good online education platform, teachers can effectively integrate the digital teaching resources, monitor the students' performance in classes, and offer more scientific teaching feedback and assessments.

China has a large population in the aspects of learning and education. Given an imbalanced economic development, high-quality digital resources are distributed unevenly. Existing online digital resources fail to provide education to deserving groups. However, online education can meet the individual and intelligent education needs of different groups by means of richer online digital resources and provide more effective high-quality education resources to regions with varying economic development levels. Teachers specifically play an important role in online teaching. They supply online resources and develop and share teaching resources according to the learning conditions and varying learning levels of different student groups. The teachers' sharing behaviors of digital resources includes not only the simple live lectures in online education but also the sharing and spreading of education knowledge via electronic resources. The teachers' sharing behaviors of online digital resources is a way for schools to encourage teachers to participate in online knowledge construction. In other words, schools as education institutions can encourage their teachers to update their students beyond simply sharing one's own experience. Thus, the teachers' sharing behaviors of online digital resources not only promote growth in professional skills but also form a good atmosphere for online digital resource sharing. However, large-scale online education in China is currently facing great challenges. Examples of prominent problems include the low-sharing degree of high-quality digital resources developed by high-quality teachers, the insufficient capability of teachers in developing and applying digital resources, and the low utilization of digital resources by teachers and students in online teaching. Schools at all levels need to further improve the development capability of teachers in online teaching, strengthen their sharing behavior of teaching resources, encourage more teachers and students to send feedback about teaching quality by means of the sharing behaviors of teaching resources, and promote improvements in the quality of digital teaching resources of teachers in a more benign manner.

2 Theoretical bases and hypotheses development

2.1 Theoretical bases

IMBP is a theoretical model based on several cognitive theories in health communication. Its three major prediction factors of intention of action are as follows: attitudes towards a target behavior, normative beliefs, and sense of self-efficiency. IMBP has been widely applied in preventive studies. Furthermore, IMBP can be referred to in teachers' sharing behaviors of online resources.

According to the theory of motivation, individuals have both external and internal motivations when performing specific actions. External motivation is a type of motivation based on external rewards or punishment, and it can be further divided into external adjustment, injective adjustment, identified regulation, and integrated regulation. The motivation that leads to interesting and pleasant behaviors is called internal motivation. It is produced by three basic psychological needs: sense of autonomy, sense of competence, and sense of relevance. In this study, motivation is viewed as an important factor influencing the teachers' attitude towards digital resource sharing.

2.2 Hypotheses

Many studies found that motivation is the primary impetus of personal behavior. In situations wherein teachers are unwilling to share their knowledge, experiences, and thoughts, motivation may play a crucial role. Although different types of motivations affect knowledge sharing behaviors, they may also influence the particular knowledge sharing behavior of individuals in different ways. An individual who gains a stronger sense of self-value from knowledge sharing has a more positive attitude towards knowledge sharing [1][2]. Järvelä, S et al. [3] argued that students who learn in a face-to-face environment have significantly more learning goals and performance goals in collaborative learning tasks. Barnett, K et al. [4] emphasized that leaders of schools establish their leadership and encourage teachers to apply their professional knowledge, ability, and efforts to a common goal, eventually influencing teachers to strengthen their teaching behaviors. Vauras M et al. [5] found that partnering is important in online learning processes, with teachers and students establishing a cooperative relation in studying, thus improving the teaching quality of teachers. Appova A et al. [6] found that teachers' dissatisfaction with teaching counterintuitively urges them to devote themselves to more professional teaching activities. However, teachers often cannot develop teaching resources beyond a contract term due to limitations of allowances and resources, thus lowering their enthusiasm for resource sharing. Chen S et al. [7] found that the limited online teaching resources for Wushu Course and the integrated information service based on 5G and FPGA can effectively realize system integration, with sports students appearing to be more willing to accept an online learning of sports. In this study, sharing motivation is an important factor influencing the teachers' sharing behaviors of online resources. On this basis, H1 is proposed.

H1: Sharing motivation has a significantly positive effect on teachers' sharing behaviors of online digital teaching resources.

Sense of self-efficacy influences teachers' sharing behaviors. The good sense of self-efficiency of teachers reflects their strong resistance to possible barriers against knowledge sharing. An individual with a stronger sense of knowledge sharing efficiency is more likely to show an intention of information communication and knowledge sharing and has a stronger motivation to share knowledge with others, suggesting a higher sense of self-efficacy. Van Acker, F et al. [8] investigated teachers' sharing behaviors of open education resources (OERs) in the Netherlands and found that self-efficacy of knowledge sharing can explain their differences in sharing behaviors and intentions, although the variables of the study only interpreted certain differences. Runhaar, P et al. [9] found that knowledge sharing is a kind of learning activity. Teachers not only have to make the activities professional, but they also have to contribute to the professional development of their colleagues. Results demonstrated that human resource management can strengthen the relationship between the sense of professional self-efficacy and knowledge sharing. Ergün, E et al. [10] investigated the prediction accuracies of university students' knowledge sharing behaviors by using sense of knowledge sharing self-efficacy, motivation, and community consciousness in online learning environments as the main variables. Findings showed that the sense of knowledge sharing self-efficacy represents the best prediction accuracy in knowledge giving and acceptance behaviors, with positive effects. Rahman M S et al. [11] analyzed 150 effective questionnaires from academicians from universities and colleges in Bangladesh and found that the sense of self-efficacy plays an important role in tacit knowledge sharing behavior. Chen, I. Y et al. [12] conducted an empirical study and verified that the sense of network self-efficacy and social network are good predictive factors of knowledge sharing intention. Knowledge sharing intention is significantly related to knowledge sharing behaviors. Hence, H2 is proposed.

H2: Sense of self-efficacy has a significantly positive effect on teachers' sharing behaviors of online digital teaching resources.

Work stress refers to work pressure that teachers encounter in online teaching activities, and it may emanate from the requirements of a working environment of teachers. When the work stress is strong, teachers may have to deal with a few other matters, and their sharing behaviors eventually become affected.

Zhen, Y et al. [13] found that pressure from colleagues does not influence the online teaching quality of teachers. Putwain, D. W et al. [14] emphasized that pressure brought about by curriculum reform is positively related to pressure perception, whereas teachers' sense of self-efficacy is negatively related to it. The advantages of having a strong sense of self-efficacy decline with the increase in pressure over curriculum reform. Tack, H et al. [15] discovered that work stress during teaching activities is significantly related to the basic psychological health satisfaction of teachers. Conner, J. C et al. [16] proved that academic anxiety and pressure from schools can easily decrease the academic performance of students. Skaalvik, E. M et al. [17] conducted a questionnaire survey of 523 teachers from high schools in Norway and found

that emotional stress significantly influences the demission motivation of teachers. On this basis, H3 is proposed.

H3: Work stress has a significantly negative effect on teachers' sharing behaviors of online digital teaching resources.

Online teaching resources are open resources. An increasing number of teachers spend plenty of time studying the open high-quality teaching resources, which are simply stored online. Being able to download at can easily infringe the intellectual properties of teachers. However, teachers greatly cherish their fruits of labor. As the teachers' consciousness of intellectual property protection is enhanced, they become unwilling to share their online teaching resources. Richter, T et al. [18] demonstrated that OERs can overcome education gaps and promote education fairness, but insufficient resource sharing may lead to the underutilization of OERs. Wahlstrom, K. L et al. [19] found that the management level of school leaders influences the resource sharing of teachers, and it encourages teachers to strengthen teaching resource construction and sharing. The existing studies indicate that teachers with stronger awareness of knowledge protection have lower sharing behaviors. Therefore, H4 is proposed.

H4: Awareness of knowledge protection has a significantly negative effect on teachers' sharing behaviors of online digital teaching resources.

Work atmosphere is an influencing factor of behavior, and it refers to a specific environmental context pertaining to the cognition of individuals. In a proper organizational atmosphere, individuals accept new ideas and learn from failures. In other words, a knowledge sharing atmosphere is important to the training of knowledge sharing atmosphere. Schools that create an atmosphere of positive knowledge sharing motivations encourage the sharing behaviors of learners in a network learning space. Yang, C et al. [20] analyzed the relationship between knowledge organization ability and knowledge sharing and found a positive correlation between these two variables. In particular, technologies, structures, and human knowledge capacity are crucial to organizational knowledge sharing. Yu, C et al. [21] proved that innovative behaviors are positively related to knowledge sharing and organizational innovation atmosphere, and the organizational innovation atmosphere cannot mediate the positive influence of knowledge sharing on innovative behaviors. Abili, K et al. [22] proved that knowledge sharing is positively related to the creative culture and supportive culture of organizations. Therefore, a good sharing atmosphere in schools may influence the sharing behaviors and promote the internal sharing motivations of teachers.

Hence, H5 to H8 are proposed.

H5: Sharing atmosphere provides a mediating effect to the significantly positive effects of sharing motivation on teachers' sharing behaviors of online digital teaching resources.

H6: Sharing atmosphere provides a mediating effect to the significantly positive effects of sense of self-efficacy on teachers' sharing behaviors of online digital teaching resources.

H7: Sharing atmosphere provides a mediating effect to the significantly negative effects of work stress on teachers' sharing behaviors of online digital teaching resources.

H8: Sharing atmosphere provides a mediating effect to the significantly negative effects of awareness of knowledge protection on teachers' sharing behaviors of online digital teaching resources.

The proposed research routes of this study are shown in Figure 1.

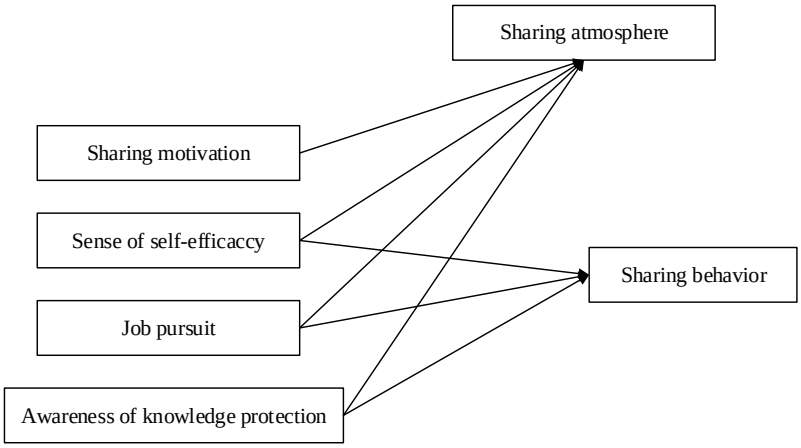

Fig. 1. Research hypotheses

3 Methodology

3.1 Research tools

In this study, relatively mature research scales in China and foreign countries were considered, and a questionnaire about the influencing factors of teachers' sharing behaviors of digital teaching resources in online teaching activities was designed. The questionnaire involved 40 questions and consisted of two parts. Part I included the basic information of respondents, including four questions about school location, sharing content, school type, and teaching age. Part II comprised the core questions, and it involved six variables, namely, sharing motivation, sense of self-efficacy, work stress, awareness of knowledge protection, sharing behavior, and sharing atmosphere, each with seven, six, six, eight, five, and four questions, respectively. The questions were presented as a five-point Likert scale questionnaire.

3.2 Samples

Jiangsu Province dominates online teaching in China. Previously, the Provincial Government of Jiangsu issued the "Guidance for Construction of Intelligent Campus in Middle and Primary Schools in Jiangsu Province (Trial)." This document requires middle schools in the whole province to comprehensively promote education modernization with education informatization. The aim is to enable children in urban and rural areas to share high-quality resources and implement intelligent education for

promoting a balanced sharing of high-quality resources through innovation. Foreigners occupy a high proportion in Jiangsu Province. With a highly recognized informatization and intelligence network learning platform, Jiangsu Province can provide classes, online Q&A services, online live discussions of distinguished teachers besides offering online learning behavioral data analysis to middle school students through their mobile phones, TVs, tablet PCs, and computers. Considering the uniqueness of the target samples and the good foundation of online education in Jiangsu Province, high school teachers were selected as the respondents. The data were collected through the sampling technique. A total of 287 questionnaires were sent, but only 246 were collected. Among them, 218 questionnaires were valid, with an effective recovery rate of 88.62%.

Table 1. Descriptive statistics from the questionnaire recovery results

Variables	Answers of questions	Quantity	Percentage
Location of schools	City	127	58.26%
	Rural	91	41.74%
Sharing contents	Courseware	33	15.14%
	Papers	26	11.93%
	Electronic teaching plan	32	14.68%
	Electronic textbook	18	8.26%
	Software	20	9.17%
	Classroom records	32	14.68%
	Microlecture	57	26.15%
Type of schools	Primary high school	44	20.18%
	Public vocational high school	52	23.85%
	Public high school	66	30.28%
	Private international high school	56	25.69%
Teaching age	>5 years	44	20.18%
	5–10 years	49	22.48%
	10–20 years	74	33.94%
	>20 years	51	23.39%

3.3 Analytical method

The data analysis was implemented in three steps. First, a statistical analysis on the sharing behaviors was conducted using SPSS 22.0, and it included the digital resources shared by the teachers and the group differences. Second, the reliability and validity of observation variables were tested using STATA 17.0. Finally, linear regression and difference significance analysis (independent T test and one-way analysis of variance) were conducted to determine the relationship among variables.

4 Result analysis

4.1 Reliability and validity test

Reliability analysis calculates the reliability and accuracy of answers of quantitative data. If the Cronbach α is higher than 0.8, then the reliability is high.

As shown in Table 2, the data reliability coefficient of the designed questionnaire (Cronbach α) is 0.935, which is higher than 0.9. This finding comprehensively reflects the high reliability quality of the data and their suitability for further analysis.

Table 2. Reliability test results

Variables	Name	Calibrated item total correlation (CITC)	α coefficient with item deleted	Cronbach α	Cronbach α
Sharing motivation (A)	A1	0.400	0.725	0.742	0.935
	A2	0.327	0.742		
	A3	0.520	0.698		
	A4	0.561	0.689		
	A5	0.474	0.707		
	A6	0.534	0.692		
	A7	0.404	0.723		
Sense of self-efficacy (B)	B1	0.264	0.776	0.744	
	B2	0.625	0.673		
	B3	0.547	0.691		
	B4	0.473	0.710		
	B5	0.511	0.699		
	B6	0.545	0.691		
Work stress (C)	C1	0.474	0.829	0.825	
	C2	0.633	0.790		
	C3	0.566	0.804		
	C4	0.609	0.795		
	C5	0.689	0.776		
	C6	0.626	0.791		
Awareness of knowledge protection (D)	D1	0.464	0.833	0.836	
	D2	0.621	0.809		
	D3	0.588	0.814		
	D4	0.418	0.833		
	D5	0.689	0.801		
	D6	0.579	0.816		
	D7	0.592	0.813		
	D8	0.614	0.810		
Sharing behaviors (E)	E1	0.550	0.612	0.700	
	E2	0.338	0.709		
	E3	0.473	0.650		

	E4	0.475	0.643		
	E5	0.483	0.640		
Sharing atmosphere (F)	F1	0.623	0.538	0.699	
	F2	0.468	0.645		
	F3	0.389	0.688		
	F4	0.467	0.649		

Validity studies analyze whether a studied item is reasonable and meaningful. Here, the validity analysis was accomplished via factor analysis by using a set of KMO indicators.

In this study, KMO and Bartlett test were applied for the validity verification. As shown in Table 3, the KMO is 0.831, which is higher than 0.8. This finding indicates that the research data are highly suitable for information extraction.

Table 3. Validity results

KMO		0.831
Bartlett sphericity test	Approximate chi-square	4940.434
	df	630
	p value	0

4.2 Linear regression

The following trends can be deduced from Table 4:

H1 is true. Sharing motivation has a significantly positive effect on the teachers' sharing behaviors of online digital teaching resources. Teachers may not have the motivation to share online resources at the beginning, but they eventually develop the motivation as the curriculum and career development progress. In the course of continuous development of teaching resources, the sharing aspect helps teacher groups to contribute and promote teaching experiences in a mutual and convenient manner. In particular, teachers who own high-quality teaching resources usually dominate the professional teaching performance via sharing, and they create an environment by which other teachers can voice their agreement or differing opinion. This method enables other teachers, particularly those who are open to sharing, to adopt and understand the knowledge elements in an ecological environment. Speech and listening are the dominant modes. Consequently, teachers enhance their dominant role of resource sharing in the education field.

H2 is true. Sense of self-efficacy has a significantly positive effect on the teachers' sharing behaviors of online digital teaching resources. Teachers with a stronger sense of self-efficacy participate more willingly in teaching resource sharing. The teachers' sense of self-efficacy can help them and the third-party education institutions to open online teaching resources and promote their sharing behaviors of digital resources. Moreover, teachers with a stronger sense of self-efficacy are more willing to set examples and guide novice teachers and pre-service teachers to acquire experiences in

successful digital resource sharing, as in the case in which real cases of online teaching resource construction are imparted.

H3 is false. Work stress has no significantly negative effects on the teachers' sharing behaviors of online digital teaching resources. A possible explanation is that work stress does not influence the performance of middle-school teachers involved in professional learning activities. The influences of work stress on sharing behavior are two-sided. For instance, given a certain degree of work stress, teachers may more likely share digital resources. However, once the work stress exceeds a threshold, some teachers will not have the extra time and effort to share the digital resources because they are busy with their work affairs. Therefore, work stress has no significant influence on sharing behaviors.

H4 is true. Awareness of knowledge protection has a significantly negative effect on the teachers' sharing behaviors of online digital teaching resources. As the major force of online teaching resource development, teachers develop online teaching resources by participating in various teaching competitions. Once the teachers no longer develop digital resources, they will form a stronger awareness of knowledge protection and eventually become unwilling to share those digital resources they own. Therefore, education management departments at all levels have to publish more incentive measures to improve the teachers' sharing behaviors and encourage third parties to purchase the high-quality resources developed by excellent teachers, thereby giving them the corresponding economic compensation.

Table 4. Regression results

Independent variables	Standardized coefficient	T	Significance	Collinear statistics	
				Error	*VIF*
Sharing motivation (A)	0.128	2.115	0.036	0.610	1.639
Sense of self-efficacy (B)	0.171	2.374	0.018	0.431	2.320
work stress (C)	−0.084	−1.272	0.205	0.512	1.952
Awareness of knowledge protection (D)	−0.453	−6.455	0.000	0.452	2.214

4.3 Mediating effect analysis

The following trends can be deduced from Table 5. H5 and H6 are false. These findings indicate that the sharing atmosphere has no mediating effects in terms of the influences of sharing motivation and sense of self-efficacy on the teachers' sharing behaviors in online teaching activities. A good explanation is that sharing motivation and sense of self-efficacy mainly emanate from individual teachers. Furthermore, teachers develop a relatively solidified behavioral mode after years of learning and working, and they will not generate sharing behaviors by simply following an administrative order. This scenario should encourage education management departments to

holistically create a good sharing atmosphere and especially promote the teachers' sharing behaviors by means of professional title appraisals and annual assessments. H7 and H8 are true. A sharing atmosphere provides both complete and partial mediating effects in terms of the significantly negative influences of work stress and awareness of knowledge protection on teachers' sharing behaviors in online teaching activities. If work stress is high, then teachers cannot easily share their teaching resources. The work stress of teachers can be relieved in a good sharing atmosphere, enabling them to understand the essential meaning of teaching resource sharing and improve their sharing behavioral levels. Consequently, the awareness of knowledge protection is formed gradually. Therefore, a good sharing atmosphere can help teachers to understand the effects of resource sharing and accelerate the transformation of industry–university–research cooperation with respect to teaching resources under intellectual property protection.

Table 5. Mediating effect analysis

Items	Test conclusions	c total effect	a*b mediating effect	c' direct effect	Percentage
A=>F=>E	Mediating effect is not significant.	0.143	0.011	0.131	0%
B=>F=>E	Mediating effect is not significant.	0.171	0.005	0.166	0%
C=>F=>E	Complete mediating effect	0.071	0.06	0.011	100%
D=>F=>E	Partial mediating effect	0.465	0.099	0.366	21.226%

4.4 Difference analysis

In terms of the sampling, Table 6 shows that school location (urban or rural) is significant to the teachers' sharing behaviors of online digital teaching resources at the 0.05 level (t=2.231, p=0.027). The mean of the teachers' sharing behaviors in urban areas is 4.26, which is significantly higher than that in rural areas (4.10). This trend can be attributed to the good high school teaching resources, which are mainly concentrated in urban areas in China. Furthermore, the overall teaching quality of high schools in urban areas is much higher than that in rural areas. In particular, cities possess good online digital teaching resources. As knowledge in digital resources usually comes from reliable channels, the added value of teachers may be more related to the utilized teaching method or content display. By contrast, high school teachers in rural areas lack digital resources. Hence, education management departments at all levels should develop demonstration methods, play a leading role among experienced teachers in urban areas, and help novice teachers and pre-service teachers in rural areas to acquire successful digital resources to enhance their sharing experience by means of case studies. Moreover, high schools in rural areas have to strengthen the technological and teaching support to teachers in their daily teaching research and school-based training service.

Table 6. T test

Location of schools (mean±standard deviation)		**t**	**p**
1.0 (n=127)	2.0 (n=91)		
4.26±0.45	4.10±0.55	2.231	0.027*

* p<0.05, ** p<0.01

As shown in Table 7, the influence of teacher type on the teachers' sharing behaviors of digital teaching resources in online teaching activities varies significantly at p<0.05. The mean scores of the groups with significant differences are in the order of public high school > public vocational high school > private high school > private international high school. This trend proves the outstanding role of public high schools in China's educational system. The online resource sharing behaviors of teachers from public high schools and public vocational high schools are much higher than those from other school types. This finding indicates that education management departments should strengthen the curriculum resource construction by teachers from private high schools and help them improve their sharing behaviors of online digital resources in the course of developing private high schools. Teaching age influences the teachers' sharing behaviors in varying ways, and the difference is significant at the 0.01 level (F=4.106, p=0.007). Teachers with a teaching age of 5–10 years and 10–20 years produce more resource sharing behaviors than other types of teachers. A good explanation is that high school teachers with a teaching age of 5–20 years are in the golden period of their career development. They can more easily accept online teaching models, have stronger internal motivations to develop online learning resources, and are more willing to share their online teaching resources. Teachers with a teaching age of less than 5 years may have a weak capability of developing online teaching resources; they have a short history of teaching, and their cumulative resources are insufficient. Teachers with a teaching age of more than 20 years tend to slowly accept the online teaching mode, and they tend to show psychological resistance. They are unwilling to share online teaching resources that had not been excellently produced in the first place.

Table 7. Variance test

Sharing contents (mean±standard deviation)							**F**	**p**
1.0 (n=33)	2.0 (n=26)	3.0 (n=32)	4.0 (n=18)	5.0 (n=20)	6.0 (n=32)	7.0 (n=57)		
4.16±0.54	4.32±0.45	4.15±0.54	4.08±0.36	4.23±0.61	4.21±0.46	4.18±0.49	0.538	0.779
Teaching age (mean ± standard deviation)							**F**	**p**
1.0 (n=44)		2.0 (n=49)		3.0 (n=74)		4.0 (n=51)		
4.18±0.54		4.27±0.45		4.28±0.52		3.99±0.42	4.106	0.007**
Type of schools (mean ± standard deviation)							**F**	**p**
1.0 (n=44)		2.0 (n=52)		3.0 (n=66)		4.0 (n=56)		
4.18±0.54		4.27±0.47		4.31±0.51		3.99±0.41	4.966	0.002**

* p<0.05, ** p<0.01

5 Conclusions

Online teaching can realize real-time interaction, break spatial and temporal limitations, provide synchronous remote teaching services, and achieve class interaction and high-quality resource sharing. High-quality online digital teaching resources can shorten the education gap between urban and rural areas in China and promote more extensively the high-quality teaching resources to a variety of student groups. This study designed a scale for the influencing factors of teachers' sharing behaviors of digital teaching resources in online teaching activities, and the major influencing factors were explored. According to the results, the Cronbach α is 0.935 and the KMO is 0.831, indicating good reliability and validity of the questionnaire. Sharing motivation and sense of self-efficacy have significantly positive effects on the teachers' sharing behaviors in online teaching activities. Work stress has no significantly negative effects on teachers' sharing behaviors in online teaching activities, but awareness of knowledge protection does. A sharing atmosphere provides both complete and partial mediating effects in terms of the significant effects of work stress and awareness of knowledge protection on teachers' sharing behaviors in online teaching activities. The influences of school location (urban or rural), school type, and teaching age on teachers' sharing behaviors are significant at the 0.05 level. Case studies of the teachers' sharing behaviors by using the online monitoring system should be conducted to further explore the influences of online digital resource sharing behaviors on the academic performances of students.

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8 Author

Liwen Wen is a lecturer in the Medical College, Huanghuai University, Zhumadian 463000, China (email: wenliwen@huanghuai.edu.cn).

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