Research on Enhancing Digital Literacy of Finance and Accounting Vocational Education Normal Students

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Abstract: Cultivating the digital literacy of vocational education normal students is a fundamental link in promoting the digital teaching reform of vocational education. Taking the vocational education normal students majoring in finance and accounting of Lingnan Normal University as the research object, this paper investigates and analyzes the current situation of the digital literacy level of normal students. The results show that the digital literacy of finance and accounting normal students is generally at a medium to high level, and their digital social responsibility literacy is good. The higher the grade of normal students, the higher their digital literacy level. This indicates that the implementation of the school's "New Normal Education + Education Informatization 2.0" and "Three Transformations and Four Modernizations" peak construction project has achieved certain results. The "Digital Technology knowledge and skills", "digital application" and "professional development" qualities of finance and accounting vocational education normal students can basically support their learning activities as college students, but are not sufficient to support their teaching activities as teachers. However, finance and accounting vocational education normal students have a good attitude and confidence in learning new digital technologies. In this regard, it is urgent to build a complete knowledge system of digital technology, integrate digital literacy education with professional education, and create diversified digital literacy education scenarios to improve the digital literacy level of normal students in finance and accounting vocational education.

Keywords: Digital Empowerment, Accounting Vocational Education Normal Students, Digital Literacy, Teaching Reform, Improvement Strategies

1. Introduction

With the rapid development of digital technology, the global economy and society are gradually transforming towards digitalization and intelligence. Digital empowerment has become an important driving force for promoting industrial upgrading, optimizing the economic structure, and enhancing national competitiveness. How to enhance the digital literacy of the entire population in the context of a digital society has become an issue that governments and scholars around the world constantly explore and study. In 2006, the European Union formulated a digital literacy framework for five literacy domains. In 2018, UNESCO released the Global Framework for Digital Literacy. In 2021, the Cyberspace Administration of China and others drafted the "Outline for Enhancing the Digital Literacy of All Citizens and the Action Plan". In 2022, the Ministry of Education of China issued the "Digital Literacy for Teachers" standard, defining digital literacy for teachers as the awareness, ability and responsibility that teachers possess to appropriately utilize digital technologies to acquire, process, use, manage and evaluate digital information and resources, discover, analyze and solve educational and teaching problems, and optimize, innovate and transform educational and teaching activities. The cultivation of digital literacy has become an important part of pre-service teacher training and post-service teacher training.

The concept of digital literacy was first proposed by the Israeli scholar Alkale [1]. Research on digital literacy abroad started relatively early and covers a wide range. The main studies include the research on the connotation and framework of digital literacy [2], the practical research on digital literacy education [3-5], the investigation research on digital literacy of different groups [6-9], and the application research of digital literacy in libraries [10]. Since 2006 in China, scholars

have been conducting research related to digital literacy one after another, including studies on the connotation of digital literacy [11-13], studies on digital literacy of different groups [14-15], studies on the connotation and current situation of digital literacy of college students [16-17], and studies on the improvement paths of digital literacy of college students [18-19].

A review of the research literature on digital literacy both at home and abroad reveals that the academic community has conducted relatively rich studies on "digital literacy". However, in terms of the research subjects, there are currently few studies focusing on the digital literacy of pre-service teachers, that is, normal school students, and there are almost no research results on the digital literacy of vocational education normal school students. Professional training of vocational education teachers is an important core for improving the quality and excellence of vocational education. Vocational education normal students are future teachers at the stage of study and are in the early stage of professional development as teachers. Cultivating the digital literacy of vocational education normal students is a fundamental link in promoting the digital teaching reform of vocational education.

The Finance and Accounting Education major of Lingnan Normal University has a long history of running and is a provincial-level demonstration major for cultivating applied undergraduate talents. It aims to cultivate finance and accounting teachers for vocational colleges in response to the strategic demands of vocational education reform and development and industrial transformation and upgrading in Guangdong Province. In December 2021, the Ministry of Finance issued the "Accounting Informatization Development Plan (2021-2025)", which also emphasized the importance of digital literacy for accounting talents. Therefore, vocational education normal students majoring in financial account education (hereinafter referred to as "financial accounting vocational education normal students") need to possess both digital literacy as teachers and professional digital literacy in accounting. The digital literacy of finance and accounting vocational education normal students can be summarized as five dimensions of literacy that they should possess in educational and teaching, scientific research and management activities under the background of digital empowerment, including digital awareness, digital technology knowledge and skills, digital application, digital social responsibility and professional development, when applying digital technology. Improving the digital literacy of finance and accounting vocational education normal students is an important part of achieving the improvement of the educational

This research, based on the background of digital empowerment, through a questionnaire survey of finance and accounting vocational education normal students at Lingnan Normal University, reveals the current status of digital literacy of finance and accounting vocational education normal students in our university, highlights problems and proposes improvement strategies, aiming to provide useful references for the development of the finance and accounting education major in colleges and universities and help cultivate finance and accounting vocational education normal students who can adapt to the digital age.

2. Investigation Tools and Subjects

2.1 Investigation Tools

This research adopts the method of self-compiled questionnaires for investigation. The design of the questionnaire is mainly divided into two parts. The first part is the basic information of individuals, including four aspects: gender, grade, family location, and whether they have participated in teaching-related practical activities. The aim is to understand the basic situation of the respondents and ensure the reliability of the questionnaire test. The second part is an investigation on the digital literacy level of normal students majoring in finance and accounting vocational education. Based on the framework content of the "Digital Literacy for Teachers" education industry standard released by the Ministry of Education in 2022, and in combination with the professional characteristics of finance and accounting vocational education normal students, the questionnaire has set up 5 first-level indicators and 12 second-level indicators. The first-level indicators are digital awareness, digital technology knowledge and skills, digital

application, digital social responsibility, and professional development. The questionnaire adopts the form of scale questions, allowing respondents to select the appropriate options based on their own actual situations. (The Liker five-point scale questions are used, and each statement has five responses: "very consistent", "relatively consistent", "consistent", "relatively inconsistent", and "very inconsistent", which are respectively marked as 5, 4, 3, 2, and 1.) the total score obtained by the respondents can illustrate the strength and level of their attitudes.

The second part of this questionnaire, the investigation on the digital literacy level of finance and accounting vocational education normal students, adopts the form of scale questions. It is necessary to conduct reliability and validity tests on it. The Cronbach's Alpha reliability coefficient was used to examine the credibility of the research variables in the questionnaire. The reliability of the scales of the five dimensions of digital literacy was tested using SPSS25.0. The overall alpha coefficient of the questionnaire was 0.973, and the alpha coefficients of each first and second-level indicator were also greater than 0.97, indicating that the variables had good internal consistency reliability, and each scale had good reliability. Exploratory factor analysis was conducted using SPSS25.0 to perform KMO and Bartlett's sphericity test on the scale. The KMO of the questionnaire was 0.947, which was greater than 0.7, indicating that the questionnaire data conformed to the factor analysis. The Sig value of Bartlett's sphericity test was 0.00, meeting the requirements of the significance level. Therefore, the scale has good validity.

2.2 Survey Subjects

This research takes the vocational education normal students of the fourth grade majoring in Financial Accounting Education at Lingnan Normal University as the investigation subjects. The survey questionnaire was distributed in electronic form through the Wenjuanxing platform. Finally, 168 valid questionnaires were retrieved, and the effective recovery rate of the questionnaires was 100%. The basic information of the final research subjects is shown in the Table 1.

Table 1. Basic Information of the Survey Subjects

Variable	type	Sample size	percentage(%)
Gender	Male	24	14.29%
	Female	144	85.71%
Place of origin	urban areas	92	54.76%
	Rural area	76	45.24%
Grade	Freshman Year	37	22.02%
	Sophomore year	49	29.17%
	Junior year	40	23.81%
	Senior year	42	25%
Teaching practice activities	The "Three Goes to the Countryside" social practice teaching activity	76	45.24%
	College Students' Teaching Ability Competition	19	11.31%
	Part-time tutoring practice activity	101	60.12%
	Other	25	14.88%

As shown in Table 1, the proportions of males and females among the survey subjects were 14.29% and 85.71% respectively. College students from urban areas and rural areas accounted for 54.76% and 45.24% respectively. The proportion of finance and accounting vocational education normal students in each grade is roughly the same, among which the proportion of sophomore students is 29.17%. Among the surveyed subjects, 60.12% of the students have participated in part-time tutoring practice activities, and 45.24% of the students have participated in the social practice teaching activities of "Three Goes to the Countryside" for college students.

3. Investigation Results and Analysis

3.1 The Overall Situation of Digital Literacy of Vocational Education Students Majoring in Finance and Accounting

The average scores of the overall digital literacy of vocational education normal students in finance and accounting, as well as

the five dimensions of digital awareness, digital technology knowledge and skills, digital application, digital social responsibility, and professional development were obtained. According to the classification, an average score of 1 is "extremely poor", an average score of (1-2] is "poor", and an average score of (2-3] is "average". An average score of (3-4] is considered "good", and an average score of (4-5] is considered "excellent". The statistics are conducted at five levels to initially understand the overall digital literacy of finance and accounting vocational education normal students, as shown in Table 2 below.

Table 2. Overall Status of Digital Literacy of Finance and Accounting Vocational education Normal Students

Items	Mean value	Extremely Poor	Poor	Average	Good	Excellent
Score	3.56	0	1	43	82	42
		(0%)	(0.59%)	(25.59%)	(48.81%)	(25%)
Digital awareness	3.52	1	3	62	71	31
		(0.59%)	(1.79%)	(36.9%)	(42.26%)	(18.45%)
Digital technology knowledge and skills	3.32	1	10	72	63	22
		(0.59%)	(5.95%)	(42.86%)	(37.5%)	(13.09%)
Digital application,	3.25	1	7	79	60	21
		(0.59%)	(4.17%)	(47.02%)	(35.71%)	(12.5%)
digital social responsibility	4.03	1	1	39	49	78
		(0.59%)	(0.59%)	(23.21%)	(29.17%)	(46.43%)
Professional development	3.59	1	4	54	72	37
		(0.59%)	(2.28%)	(32.14%)	(42.86%)	(22.02%)

It can be obtained from Table 2 that the overall score of digital literacy of finance and accounting vocational education normal students is 3.56, and 73.81% of the normal students self-rated their digital literacy level as "good" and "excellent". The digital literacy of the finance and accounting vocational education normal students in our school is generally at a medium to high level, reflecting that a series of policies and measures to promote educational informatization introduced by our country have achieved certain results. It also empirically tests the achievements of the implementation of our school's "New Normal Education + Educational Informatization 2.0" and the "Three Transformations and Four Modernizations" peak construction project. Lingnan Normal University has always been committed to significantly enhancing the teacher information literacy of pre-service normal students, actively and effectively carrying out educational and teaching activities, and promoting pre-service teachers to proactively adapt to new technological changes such as informatization and artificial intelligence.

From the perspective of the scores of each first-level indicator, finance and accounting vocational education normal students performed outstandingly in "Digital Social Responsibility", with an average score of 4.03, and the highest proportion was "good". "Digital social responsibility" refers to the responsibility of teachers in terms of moral cultivation and behavioral norms in digital activities. This indicates that in the process of digital information exchange and application, vocational education students majoring in finance and accounting can abide by the laws and moral ethics of information use, respect others' digital information achievements and privacy, and maintain personal data security, etc.

The performance of "Digital Technology knowledge and skills" and "Digital Application" abilities of finance and accounting vocational education normal students is just passable, with the highest proportion being "average". "Digital Technology knowledge and skills" refer to the digital technology knowledge and skills that teachers should understand and master in their daily educational and teaching activities. "Digital application" refers to the ability of teachers to carry out educational and teaching activities by applying digital technology resources. Finance and accounting vocational education normal students are a generation that has grown up under the development of the Internet. They have been exposed to and used various digital technologies and tools for a

long time at an early stage, and are also deeply influenced by digital technologies in their daily studies and lives. Through the study and practice of digital technology resource courses in the school system, coupled with the digital practices such as "online teaching", "online competitions", and "cloud-based volunteer teaching" that have lasted for more than three years during the COVID-19 pandemic. The digital knowledge and technical skills of vocational education students majoring in finance and accounting, as well as their application level in digital technology education activities, have improved. However, with the rapid development of artificial intelligence technology, such as the latest AIGC, DEEPSEEK, ChatGPT, Baidu Wenxin Yiyan and other artificial intelligence technologies, they are constantly evolving and updating. Vocational education normal students have insufficient understanding of the value of new digital technologies in the development of the economy, society and vocational education, as well as limited application, which leads to their low evaluation of their own "digital technology knowledge, skills and applications". From another perspective, it may also indicate that finance vocational education normal students hold a positive attitude of actively learning new digital technologies.

Finance and accounting vocational education normal students need to further enhance their "digital awareness" and "professional development" qualities, with the highest proportion being "better". "Digital awareness" refers to the active reflection of objectively existing digital-related activities in the minds of teachers. "Digital professional development" refers to the ability of teachers to utilize digital technology resources to promote their own and the community's professional development. This also indicates that our school's "New Normal Education + Education Informatization 2.0" and "Three Transformations and Four Modernizations" peak construction project, through explicit and implicit education, shape the correct digital awareness of pre-service normal students and guide their digital professional development.

3.2 Digital Awareness Status of Finance and Accounting Vocational Education Normal Students

Digital consciousness includes digital understanding, digital willingness and digital will. Digital understanding refers to teachers' comprehension of the value of digital technology in economic, social and educational development, as well as their recognition of the new problems that may arise in teaching and education. Digitalization willingness refers to teachers' attitudes towards digital technology resources and their application in education and teaching. Digital will refers to the belief that teachers have in actively overcoming difficulties and solving problems when facing the issue of educational digitalization.

Table 3. Status of Digital Awareness Dimensions of Finance and Accounting Vocational education Normal Students

Secondary indicators	Mean value	Gender		Place of origin		Grade			
		Male	Female	urban areas	Rural area	Freshman Year	Sophomore year	Junior year	Senior year
Digital cognition	3.47	3.43	3.48	3.52	3.41	3.08	3.52	3.63	3.58
		(t=-0.35, P=0.36)		(t=0.91, P=0.17)		(F=4.52, P=0.004)			
Digital willingness	3.58	3.53	3.59	3.64	3.51	3.20	3.64	3.70	3.73
		(t=-0.41, P=0.33)		(t=1.05, P=0.14)		(F=4.02,P=0.008)			
Digital will	3.51	3.42	3.54	3.57	3.42	3.16	3.51	3.73	3.60
		(t=-1.31, P=0.09)		(t=1.16, P=0.12)		(F=3.08,P=0.028)			

From the average values of the three dimensions of digital awareness in Table 3, on the whole, finance and accounting vocational education normal students have a relatively good attitude of actively learning and using digital technology resources, as well as a relatively good confidence and determination to overcome the difficulties in the practice of educational digitalization. However, at present, normal students have not yet been able to better understand the value of digital technology in the economic society and educational development. And understand the opportunities and challenges brought by the

development of digital technology to education and teaching.

Through the independence t-test, it was found that there was no significant difference in digital awareness among finance and accounting vocational education normal students of different genders and from different places of origin. Under the background of digital education and the guidance of digital education in schools, finance and accounting vocational education normal students generally established a strong attitude towards learning and using digital technology resources and the belief in overcoming difficulties and solving problems. Through univariate analysis, it was found that the differences among vocational education normal students of different grades in the three dimensions of digital cognition, digital willingness and digital will all passed the significance test. From the perspective of the average score trend, as the grade level increases, normal students' understanding of the value of digital technology in economic and social development as well as educational progress deepens continuously. Moreover, the digitalization willingness and will of senior vocational normal students are also significantly higher than those of junior vocational normal students.

3.3 The Status of Digital Technology Knowledge and Skills of Vocational Education Students Majoring in Finance and Accounting

Digital technology knowledge and skills include both digital technology knowledge and digital technology skills. Digital technology knowledge refers to the common digital technology knowledge that teachers should understand, including the concepts and basic principles of common digital technologies. Digital technology skills refer to the application skills of digital technology resources that teachers should master, including the selection strategies and usage methods of digital technology resources.

Table 4. Status of Digital Technology Knowledge and Skills Dimensions of Finance and Accounting Vocational Education Normal Students

Secondary indicators	Mean value	Gender		Place of origin		Grade			
		Male	Female	urban areas	Rural area	Freshman Year	Sophomore year	Junior year	Senior year
Digital technology knowledge	3.36	3.42	3.41	3.46	3.35	3.09	3.35	3.56	3.61
		(t=0.06, P=0.47)		(t=0.90, P=0.18)		(F=3.78, P=0.01)			
Digital technology skills	3.28	3.17	3.40	3.48	3.22	3.05	3.22	3.60	3.57
		(t=-1.12, P=0.13)		(t=1.78, P=0.03)		(F=3.47, P=0.01)			

Based on the data analysis in Table 4, on the whole, the digital technology knowledge and skill levels of finance and accounting vocational education normal students are at an average level. The level of digital technology knowledge is slightly higher than that of digital technology skills. The ability of finance and accounting vocational education normal students to select strategies and use methods of digital technology resources is relatively weak.

Through the independence t-test, it was found that there was no significant difference in digital technology knowledge among finance and accounting vocational education normal students of different genders. However, the digital technology skill level of urban normal students was higher, which might be related to factors such as the higher level of urban education development and better educational resource conditions. Through univariate analysis, it was found that there were significant differences in digital technology knowledge and skills among vocational education normal students of different grades. Finance and accounting vocational education normal students gradually come into contact with and learn courses related to digital technology resources from their freshman year, including "Basic Computer Applications", "Frontiers of Computer Science", "Information Retrieval and Utilization", "Big Data Technology and Application", "Python Office Automation", "ERP Supply Chain", and "Development and Application of Financial Robots", etc. This reflects that our school's "New Normal Education + Education Informatization 2.0" and "Three Transformations and Four Modernizations" peak construction project have enhanced the quality of teaching and learning information

literacy courses for normal students. From the trend of average scores, it can be seen that the higher the grade of normal school students, the stronger their knowledge and skills in digital technology. However, the level of digital technology knowledge and skills of senior normal school students is still only at a relatively good level.

3.4 Digital Application Status of Finance and Accounting vocational education normal Students

Digital applications include digital instructional design, digital teaching implementation, and digital academic evaluation. Digital instructional design refers to the ability of teachers to select digital technology resources to conduct learning situation analysis, design teaching activities and create learning environments. The implementation of digital teaching refers to the ability of teachers to carry out teaching by applying digital technology resources. Digital academic evaluation is the ability of teachers to conduct academic evaluation of students by applying digital technology resources, including the selection and application of evaluation data collection tools, the application of data analysis models for academic data analysis, and the realization of academic data visualization and interpretation.

Table 5. Status of Digital Application Dimensions for Finance and Accounting Vocational Education Normal Students

Secondary indicators	Mean value	Gender		Place of origin		Grade			
		Male	Female	urban areas	Rural area	Freshman Year	Sophomore year	Junior year	Senior year
Digital Instructional Design	3.26	3.22	3.38	3.45	3.22	3.09	3.29	3.51	3.54
		(t=-1.00, P=0.15)		(t=1.70, P=0.04)		(F=3.35, P=0.02)			
Implementation of Digital Teaching	3.30	3.13	3.45	3.46	3.25	3.07	3.38	3.61	3.53
		(t=-1.89, P=0.02)		(t=0.93, P=0.17)		(F=3.36, P=0.01)			
Digital academic Evaluation	3.19	3.00	3.34	3.33	3.34	3.00	3.18	3.48	3.49
		(t=-1.95, P=0.02)		(t=0.79, P=0.21)		(F=3.77, P=0.01)			

Based on the data analysis in Table 5, on the whole, the level of digital teaching design and implementation of finance and accounting vocational education normal students is also at an average level. Digital academic evaluation is the ability of teachers to conduct academic evaluation of students by applying digital technology resources. Vocational education normal students are exposed to more courses related to teaching design and implementation, have less practical training in education, and lack teaching experience. Their ability to select and apply evaluation data collection tools and use data analysis models for academic data analysis and other digital teaching evaluation needs to be further improved.

Through the independence t-test, it was found that there were significant differences in the implementation of digital teaching and academic evaluation among normal students of different genders. The possible reasons are that girls are more passionate about the teaching profession than boys in career choices. Girls invest more in the training of teaching implementation ability than boys, and their ability in digital academic evaluation is slightly stronger than that of boys. Through univariate analysis, it was found that there were significant differences in the digital application among vocational education normal students of different grades. With the course offerings and practical activities of relevant digital technology resources in each grade, the digital application level of normal students has significantly improved. Finance and accounting vocational education normal students gradually come into contact with courses on digital teaching design and teaching practice from their sophomore year, including "Smart Education and Smart Learning", "Production and Development of Online Educational Resources", "Teaching Design of Accounting", "VBSE Virtual Business Society Financial Informatization Training", and "Teaching Skills Training for Secondary Vocational Schools", etc. Meanwhile, vocational education normal students apply digital technology knowledge through the second classroom practice, such as participating in the "Three Goes to the Countryside" social practice teaching activities, teaching ability competitions for normal students at all levels, college students' innovation and entrepreneurship competitions,

and part-time tutoring practice activities, etc. The theoretical learning in the first classroom and the practical application in the second classroom have gradually enhanced the digital teaching design and implementation of normal school students, and have better supported the in-class and out-of-class learning activities of college students. Although the digital application level of normal school students shows a gradually improving trend as the grade increases, the improvement rate is relatively slow. The digital application level of normal school students in their senior year is still at a relatively good level and is far from supporting their teaching activities as teachers.

3.5 Digital Social Responsibility Status of Finance and Accounting Vocational Education Normal Students

Digital social responsibility encompasses legal and moral norms as well as digital security protection. Legal and moral norms refer to the laws, regulations and moral and ethical norms related to digital activities that teachers should abide by, including surfing the Internet in accordance with the law, using digital products and services reasonably, and maintaining a positive and healthy online environment. Digital security protection refers to the ability that teachers should possess in digital activities to protect data security and network security, including safeguarding personal information and privacy, maintaining the security of work data, and paying attention to network security protection.

Table 6. Status of Digital Social Responsibility Dimensions for Accounting Vocational Education Normal Students

Secondary indicators	Mean value	Gender		Place of origin		Grade			
		Male	Female	urban areas	Rural area	Freshman Year	Sophomore year	Junior year	Senior year
Legal and moral norms	4.08	3.85	4.11	4.05	4.11	3.98	4.43	3.89	3.92
		(t=-1.44, P=0.07)		(t=-0.47, P=0.31)		(F=4.40, P=0.00)			
Digital security protection	3.97	3.90	4.00	3.99	3.96	3.86	4.29	3.80	3.91
		(t=-0.54, P=0.29)		(t=-0.04, P=0.48)		(F=3.42, P=0.01)			

The digital social responsibility literacy of finance and accounting vocational education normal students is outstanding. According to the data analysis in Table 6, on the whole, finance and accounting vocational education normal students can abide by the laws, regulations and moral and ethical norms related to digital activities, surf the Internet in accordance with the law, use digital products and services reasonably, and maintain a positive and healthy online environment. Meanwhile, normal school students have a good ability to protect data security and network security, and can effectively safeguard personal information and privacy, maintaining the security of work data. Through the independence t-test, it was found that the differences in digital social responsibility among vocational education normal students of different genders and places of origin did not pass the significance test. Through univariate analysis, it was found that there were still significant differences in digital social responsibility among vocational education normal students of different grades. With the continuous improvement of digital awareness, digital knowledge and skills, and digital application levels among normal school students of all grades, their digital social responsibility literacy has significantly improved, and the overall level has reached a good quality level. However, it is still necessary to further enhance the awareness and ability of digital security protection.

3.6 Professional Development Status of Finance and Accounting Vocational Education Normal Students

Professional development encompasses digital learning and research, as well as digital teaching research and innovation. Digital learning and training refer to the ability of teachers to utilize digital technology resources for the acquisition and sharing of educational and teaching knowledge and skills, as well as for reflection and improvement in teaching practice. This includes continuous learning through digital technology resources, supporting reflection and improvement with digital technology resources, and participating in or hosting online training. Digital teaching research and innovation refer to the ability of

teachers to conduct teaching research around issues related to digital teaching and to achieve teaching innovation by utilizing digital technology resources, including conducting digital teaching research and innovating teaching models and learning methods.

Table 7. Status of Professional Development Dimensions for Finance and Accounting Vocational Education Normal Students

Secondary indicators	Mean value	Gender		Place of origin		Grade			
		Male	Female	urban areas	Rural area	Freshman Year	Sophomore year	Junior year	Senior year
Digital learning and research	3.62	3.51	3.64	3.72	3.51	3.34	3.67	3.64	3.79
		(t=-0.73, P=0.23)		(t=1.73, P=0.04)		(F=2.40, P=0.06)			
Research and Innovation in Digital Teaching	3.56	3.53	3.57	3.63	3.45	3.28	3.64	3.56	3.67
		(t=-0.32, P=0.37)		(t=1.37, P=0.08)		(F=1.79, P=0.15)			

Based on the data analysis in Table 7, on the whole, vocational education students majoring in finance and accounting are more proactive in making continuous use of digital technology resources for learning, using digital technology resources to support reflection and improvement, as well as participating in online training. Meanwhile, normal school students can also conduct teaching research well around issues related to digital teaching and achieve teaching innovation by utilizing digital technology resources. This mainly depends on their active participation in the "Three Goes to the Countryside" social practice teaching activities and teaching ability competitions for normal school students at all levels, promoting learning and teaching through competitions. Through the independence t-test, it was found that there was no significant difference in the digital professional development between vocational education normal students of different genders, but there was a significant difference in the digital professional development among vocational education normal students of different sources. Univariate analysis revealed that there were significant differences in digital learning and training among vocational education normal students of different grades, but there were no significant differences in digital teaching research and innovation. One possible reason is that, on the one hand, digital teaching research and innovation fall under high-level digital literacy, and the current digital course teaching and practice system places more emphasis on digital learning and training. On the other hand, teaching research and innovation literacy should be based on sufficient digital learning and training. Vocational education normal students are still in the stage of studying and lack adequate digital teaching experience and knowledge.

4. Strategies for Enhancing the Digital Literacy of Finance and Accounting Vocational Education Normal Students

Through the investigation and analysis of the current level of digital literacy of finance and accounting vocational education normal students in Lingnan Normal University, it is found that the digital literacy of finance and accounting vocational education normal students is generally at an upper-middle level, and the higher the level of digital literacy of normal students in higher grades, the higher the level of digital literacy. Among them, the digital social responsibility literacy of the finance and accounting vocational education normal students is good, the digital technology knowledge and skills literacy is average, the digital application literacy is average, the digital awareness literacy is relatively good, and the digital professional development literacy is relatively good. The following prominent issues exist: an incomplete knowledge system of digital technology, relatively weak digital technology skills, insufficient ability in digital teaching design and implementation, weak digital security protection, and inadequate research and innovation in digital teaching. The "Digital Technology knowledge and skills", "digital application" and "professional development" qualities of finance and accounting vocational education normal students can basically support their learning activities as college students, but they are still far from supporting their teaching activities as teachers. However, finance and accounting vocational education normal students have a good attitude and confidence in learning new digital technologies.

4.1 Build a Complete Knowledge System of Digital Technology and Strengthen the Digital Knowledge of Vocational Education Students Majoring in Finance and Accounting

The digital knowledge reserves of vocational education students majoring in finance and accounting determine whether and how they choose to apply digital technology to empower educational and teaching reforms in their future education and teaching. To construct the digital technology knowledge system of finance and accounting vocational education normal students, it is necessary for experts and scholars in relevant fields to fully draw on domestic and foreign experiences, further clarify the connotation and extension of digital literacy of finance and accounting vocational education normal students, and combine the demands of China's vocational education reform and the continuous development of digital technology to build a sustainable digital literacy knowledge system for finance and accounting vocational education normal students. Enhance the digital knowledge of vocational education students majoring in finance and accounting.

4.2 Integrate Digital Literacy Education with Professional Education to Enhance the Digital Application Capabilities of Finance and Accounting Vocational Education Students

At present, the digital literacy education for vocational education students majoring in finance and accounting remains at the "entry-level" general skills level and has not delved into advanced, professional-level digital literacy and skills. The lack of context resulting from the detachment from professional education has led to a lack of soil for the application, problem-solving and reflection of digital skills. There are two ways to integrate digital literacy education with the professional education of financial accounting: One is explicit integration, that is, adding relevant courses for improving the literacy of "digital technology knowledge and skills", "digital application" and "professional development" to the current talent cultivation curriculum system, and rebuilding a new professional curriculum structure or system of financial accounting education; Another approach is implicit integration, which involves infusing the relevant content of enhancing digital literacy into each course of the financial accounting education major, reconstructing the original course content, and embedding the contents related to "digital technology knowledge and skills", "digital Application", and "professional development" literacy, so as to organically combine digital literacy knowledge with professional knowledge. For instance, integrating the content of intelligent auditing into the "Auditing" professional courses, updating and improving auditing methods based on the functions of artificial intelligence and information technology, expanding the scope of auditing, optimizing auditing knowledge, and enhancing the intelligent auditing level of auditing talents. For instance, in the educational course of "Teaching Design of Accounting Discipline", the content of intelligent teaching is integrated, and the training of digital teaching skills is carried out from aspects such as the construction of digital teaching resources, the construction of teaching environment, the design of teaching activity process, and the innovation of teaching evaluation. Through the deep integration of digital literacy education and professional education, promote the digital application ability of finance and accounting vocational education normal students to solve practical problems by using digital technology in the digital learning context.

4.3 Create Diversified Digital Literacy Education Scenarios to Cultivate the Digital Innovation Capabilities of Finance and Accounting Vocational Education Normal Students

The first generation of digital teaching environment supported by information technologies such as multimedia cannot better support the all-round development of digital literacy of normal students in finance and accounting vocational education. In 2023, Lingnan Normal University released the "Lingnan Normal University Education Digitalization Action Plan (2023-2025)", which will collaborate with research institutions, social industries, and others to explore the construction of smart teaching Spaces, virtual simulation laboratories, virtual teaching and research rooms, and other

teaching environments using new-generation intelligent technologies such as artificial intelligence, cloud computing, big data, and the Internet of Things. Create a batch of intelligent educational scenarios. For instance, a digital classroom for real supply and demand matching can be created. Through online internships, communication with front-line teachers is conducted in advance to understand the real students and educational needs, etc. Then, the real classroom is presented in the form of live streaming on the digital classroom of the university. Under the guidance of university teachers, normal students study and analyze it. After class, they have in-depth exchanges with front-line teachers. Realize the mutual assistance and coordinated development of the "dual-teacher classroom" education, and cultivate the digital innovation ability of finance and accounting vocational education normal students.

5. Conclusions

This paper takes vocational education normal students majoring in finance and accounting education at Lingnan Normal University as the research object to investigate and analyze the current situation of digital literacy of vocational education normal students majoring in finance and accounting. The research results show that the digital literacy of finance and accounting vocational education normal students is generally at a medium to high level. The literacy of "digital technology knowledge and skills", "digital application" and "professional development" of finance and accounting vocational education normal students can basically support the learning activities as college students, but it is not sufficient to support the teaching activities as teachers. However, vocational education students majoring in finance and accounting have a relatively good attitude and confidence in learning new digital technologies. The paper proposes to construct a complete knowledge system of digital technology, integrate digital literacy education with professional education, and create diversified digital literacy education scenarios to improve the digital literacy level of normal students in finance and accounting vocational education.

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