

Accounting Professional Education in the Digital Era: Practice and Reflection based on the Cultivation of Digital Business Competence in Colleges and Universities

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Abstract: Under the background of the era of rapid development of artificial intelligence, great changes have occurred in the field of accounting, and the education of accounting majors in colleges and universities is facing new challenges and opportunities. This paper analyzes the situation of colleges and universities in cultivating accounting students' ability to count business, including the use of case study and literature combination, and discusses the changes in the industry demand, the current situation of education reform in colleges and universities, and the corresponding strategy suggestions. The study finds that although colleges and universities have taken a variety of reform measures, there is still the problem of mismatch with the speed of change in the industry. Colleges and universities should make efforts in updating education concepts, optimizing curriculum, strengthening faculty development and innovating teaching methods in order to cultivate accounting professionals who meet the needs of the times and promote economic and social development.

Keywords: Digital Era, Financial Education in Higher Education, Digital Business Competence Development, Educational Reform, Challenges and Opportunities.

1. Introduction

1.1. Background

Against the backdrop of the rapid development of Artificial Intelligence (AI), job requirements in various industries worldwide are undergoing significant changes. According to the Research Report on the Development of Intelligent Accounting Education in Chinese Colleges and Universities (2022), the application of AI technology has promoted the transformation of traditional positions to intelligence and automation, especially in the field of accounting, where the application of financial robots and intelligent financial systems are gradually replacing traditional accounting work. This trend requires professional education in colleges and universities to keep pace with the times and cultivate accounting talents with digital business capabilities. The ability to understand, analyze and apply financial data in a digital environment. The cultivation of digital quotient competency not only includes cultivating the education target's sensitivity to data and analyzing ability, but also involves his or her ability to use AI technology to make financial decisions, which is a key skill necessary for current and future accounting professionals. Although universities are encouraged at the policy level to keep pace with the development of digitalization and AI, and reform the professional training system to adapt to the changing needs of the industry, there is still a gap between theory and practical application in many universities at the practical level. Especially in the innovation of curriculum content and teaching methods, the reform speed of many colleges and universities lags far behind the speed of industry change.

1.2. Purpose and Significance of the Study

Based on the foregoing, the focus of this study is to explore and analyze the methods and effects of relevant universities

in cultivating the numerical and business skills of students in accounting and related allied professions. The study will explore the achievements of individual universities in their professional education reforms, analyze the challenges they encountered and the successes they achieved in the implementation process, and then provide more specific and practical suggestions for such professional education reforms.

1.3. Research Methodology

This study mainly adopts the research method of combining case study and literature, aiming to have an in-depth discussion on the cultivation of Digital Quotient (DQ) ability in college accounting education in the digital era. In addition, this paper collects a lot of information about the recruitment demand of the employing market for accounting positions, which supports the research viewpoints in the paper from the side, in order to enrich the argumentation basis of this study.

2. Review of Domestic and International Literature

In terms of international research, scholars from various countries mainly focus on the improvement of technical skills, the development of data analysis skills, the establishment of a lifelong learning system, and the close integration with the practice of the accounting industry. In terms of the impact of digital transformation on the accounting industry, according to Gonçalves et al. (2022), digital transformation (DT) is redefining the structure of the accounting industry, introducing new technologies and business models. The accounting services industry is facing a shift from traditional to digital accounting. This shift involves not only the use of technology, such as OCR, AI, robotics, and cloud ERP, but also the repositioning of the role of accounting professionals, who need to move from routine bookkeeping to more

strategic and analytical tasks. In terms of modernization of accounting information systems, Kucherenko et al. (2021) state that the structure and component interdependencies of accounting information systems (AIS) under the digital transformation are crucial for integrating the internal accounting systems of individual economic entities with the overall accounting system. The modernization of AIS not only improves the efficiency of accounting and reporting, but also facilitates the formation of a new accounting information environment, such as cloud accounting and blockchain. This suggests that accounting education needs to adapt to these changes by developing students' skills in data analysis, information technology, and decision support. From the perspective of challenges and opportunities in accounting education, Abd Razak et al. (2021) discuss the changing role of accounting professionals in the digital economy, emphasizing the importance of accounting education in developing students' digital skills and digital literacy. Accounting education needs to be closely aligned with industry practice, with case studies and real-world projects to enable students to understand and adapt to the use of digital technologies in accounting practice.

In response to these changes, a series of countermeasures are being taken by the accounting and finance majors of domestic universities. Firstly, the updating of educational content has become a primary task, and the professional curriculum system needs to synchronize with the development of AI technology, increasing courses such as data analysis, programming, machine learning, etc., in order to cultivate students' adaptability in an intelligent environment (Lv Le et al., 2021). Secondly, the innovation of teaching methods is also put on the agenda, advocating the adoption of interactive teaching methods such as case teaching and project-driven to improve students' practical ability and innovative thinking (Lv Le et al., 2021). In addition, colleges and universities should also strengthen cooperation with enterprises, through school-enterprise cooperation and internship training, so that students can better understand the needs of the industry and adapt to the future workplace in advance (Wang Linhui et al., 2023). In terms of faculty construction, colleges and universities need to introduce teachers with AI backgrounds, and at the same time train existing teachers to improve their teaching and research capabilities in the field of AI (Lv Le et al., 2021). The course evaluation system also needs to be reformed to adapt to the new teaching content and methods, and to pay more attention to students' practical application ability and innovation ability (Wang Linhui et al., 2023).

To summarize, the domestic universities and colleges of finance and accounting are facing the challenge of educational change brought about by the development of artificial intelligence, and the universities and colleges are actively responding to this change through various measures such as updating the curriculum system, innovation of teaching methods, construction of teaching staff and reform of the evaluation system, in order to cultivate the finance and accounting professionals who are in line with the needs of the new era.

3. Challenges in the Digital Era and the Current Situation of Reforming the Education of Accounting and Finance Majors in Colleges and Universities

3.1. Challenges

With the rapid development of artificial intelligence, cloud computing and other technologies, the knowledge and skills that accounting professionals need to have have changed dramatically. According to relevant survey data, when recruiting accounting and finance personnel, Chinese enterprises have higher and higher requirements for candidates' data analysis ability and information technology skills. For example, a report released by a well-known enterprise management consulting company shows that more than 90% of enterprises indicated that data analysis ability is one of the necessary qualities when recruiting accounting personnel. This data fully demonstrates the changing needs of the times for accounting talents and reveals the urgency of reforming the education of accounting profession.

In the past, accounting professionals mainly needed to have specialized knowledge in accounting and finance. However, with the rapid development of artificial intelligence, cloud computing and other technologies, the knowledge and skills that accounting professionals need to have have changed drastically - they also need to have the ability of data analysis, information technology and other aspects. According to a report released by the International Federation of Accountants (IFAC), data analysis, information technology and other skills needed by future accounting professionals have become an urgent need for the development of the industry. This change has put forward new requirements for higher accounting education, not only to teach traditional accounting and financial knowledge, but also to strengthen the education of data analysis, information technology and other aspects. This is a clear guideline for the reform direction of higher accounting education and a clear prediction of the future demand for accounting talents.

In fact, changes in the industry's job requirements have even signaled the urgent need for change. According to relevant survey data, when recruiting accounting personnel, Chinese enterprises are increasingly demanding data analysis and information technology skills from candidates. For example, according to a report released by a well-known enterprise management consulting firm, more than 90% of enterprises indicated that data analysis ability is one of the necessary qualities when recruiting accounting staff. This data fully demonstrates the changes in the demand for financial accounting personnel positions in the industry in the digital era, and also reveals the urgency of reforming the education of the accounting profession.

In addition, the Ministry of Education of China has clearly stated in the Guiding Opinions on Deepening the Reform of Undergraduate Teaching in Higher Education that it is necessary to strengthen the cultivation of students' abilities in data analysis and information technology. Accordingly, many colleges and universities have already offered courses on accounting informatization, big data and finance to meet the needs of the times and have achieved certain positive results. All these initiatives are aimed at cultivating talents with comprehensive quality for financial accounting positions to meet the challenges of the digital era. However, the current

supporting reforms of the teaching system, teaching materials preparation, teachers' digital business teaching quality improvement and professional teaching methods in colleges and universities are far from being able to catch up with the update speed of AI, which creates a gap between the intention of educational reform and the actual effectiveness of the reform.

3.2. Status Quo

In the context of the digital era, a large number of colleges and universities have gradually shifted the training of financial accounting professionals from traditional accounting talents to intelligent, information-based talent training mode. This shift is reflected in the curriculum, practical teaching and supporting teaching conditions and teaching staff.

3.2.1. Curriculum

In terms of curriculum, most colleges and universities have incorporated computer technology, data analysis and other courses into the basic course system of the accounting and finance majors, enabling students to master the necessary digital skills while learning professional theoretical knowledge. For example, in the curriculum of a Fujian university in recent years, the proportion of computer technology-related courses has accounted for 20% of the total curriculum, and data analysis courses have also become mandatory for students. Such a curriculum not only ensures that students master accounting expertise, but also adapts to the needs of the digital era.

3.2.2. Practical Teaching

The universities concerned all emphasize practical teaching and provide students with opportunities for practical operation through the establishment of on- and off-campus internship bases and school-enterprise cooperation. In addition, colleges and universities organize various competitions, lectures, seminars and other activities to stimulate students' interest in learning and enhance their innovative abilities.

3.2.3. Teachers' Team Building

Again, in terms of teacher team building, universities actively introduce and train teachers with digital background to improve teaching quality and research level. At present, teachers with digital background in Fujian universities have accounted for 15% of the total number of teachers, and this proportion is constantly increasing. Teachers with digital background can better teach students digital skills and promote the transformation of accounting education.

3.2.4. Educational Technology Applications

In terms of the application of educational technology, some universities have begun to utilize information technology in order to promote innovation in teaching methods. Modern educational technologies such as virtual reality (VR) and augmented reality (AR) are widely used in teaching to provide students with a more intuitive and vivid learning experience. Through simulated accounting operations and scene reproduction, students' interest and participation in learning are enhanced, and their innovative and practical abilities are cultivated.

4. Strategies and Recommendations

In summary, financial and accounting education is facing new opportunities and challenges under the impetus of the wave of digitalization. The following are the development

strategies and suggestions for the practice and reflection on the cultivation of digital business ability in colleges and universities:

4.1. Updating Educational Concepts and Strengthening Digital Awareness

With the rapid development of digital technology, the accounting profession is undergoing an unprecedented change. As a university training future accounting talents, we have the responsibility to re-examine and update our education concepts to adapt to this change of the times.

First of all, the core of the education concept is to cultivate students' comprehensive ability, not just knowledge transfer. In the context of the digital era, accounting professional education should pay more attention to cultivating students' data analysis ability, innovative thinking and interdisciplinary integration ability. This means that more practical cases should be introduced into the teaching process and students should be encouraged to use digital tools to solve practical problems, so as to enhance their ability to do business with numbers.

Secondly, strengthening digital awareness is the key to accounting education in colleges and universities. Teachers should integrate digital thinking into daily teaching and make students deeply realize the importance of digital technology by showing the specific application of digital tools in accounting work. At the same time, students are encouraged to take the initiative to learn new technologies, such as cloud computing and big data analysis, which will directly affect their future career development.

In conclusion, as educators, we should continuously reflect on and adjust our teaching strategies to cope with the changes in the digital era. This includes updating course content, introducing more digitization-related course modules, and continuously improving our own digital literacy to set an example for our students. Updating educational concepts and strengthening digital awareness are important tasks for accounting professional education in the digital era.

4.2. Optimizing the Curriculum to Incorporate Digital Content

First, we need to revisit the goals of education for the accounting profession and put the development of numerical quotient skills at the center. Numerical quotient, or digital quotient, is an expression of an individual's ability to understand, apply and innovate in a digital environment. In terms of curriculum, we should focus on optimizing the following aspects:

1) Updating course content: incorporating the latest digital technologies, such as big data analysis, cloud computing, artificial intelligence, etc., into the accounting curriculum, so that students can apply digital tools to solve practical problems on the basis of their traditional accounting knowledge.

2) Strengthening practical teaching: by simulating the actual operation of enterprises, students can carry out accounting operations in a digital environment, so as to improve their hands-on ability and practical skills.

3) Interdisciplinary integration: Encourage cross-fertilization between the accounting profession and other disciplines, such as computer science, information technology and other fields, to broaden students' knowledge horizons and enhance their innovative abilities.

4) Cultivating data analysis skills: adding data analysis-

related content to the curriculum, teaching students how to use digital tools to conduct in-depth mining and analysis of financial data to provide strong support for decision-making.

5) Enhancement of international perspective: International accounting standards and international accounting practices in the digital environment are introduced in the curriculum to equip students with a globalized accounting perspective.

In conclusion, optimizing the curriculum and integrating digital content is an important task for accounting professional education in the digital era. Through reform and innovation, we can cultivate more accounting talents with digital business ability and contribute to China's economic and social development.

4.3. Strengthening Teacher Training and Enhancing Teachers' Digital Literacy

First of all, it is necessary to pay attention to the cultivation of digital transformation consciousness of the teaching team. Teachers, as the transmitters and guides of knowledge, should be deeply aware of the impact of the digital era on the education of the accounting profession, take the initiative to update the concept of education and establish the concept of digital teaching. Through the organization of special lectures and seminars, teachers' understanding and recognition of digital technology should be enhanced, and their enthusiasm for applying digital technology in teaching should be stimulated.

Second, upgrading teachers' digital skills is key. Colleges and universities should establish a perfect training system and provide personalized training programs for teachers of different age groups and different foundations. For example, mixed online and offline training can be used to enable teachers to master the application of digital tools such as cloud computing, big data analysis, artificial intelligence, etc., and integrate these technologies into daily teaching activities to improve teaching quality.

In addition, colleges and universities need to optimize the incentive mechanism of the faculty. For teachers who have achieved outstanding results in digital education, they should be given both material and spiritual incentives, such as the establishment of digital education awards, promotion opportunities, etc., so as to encourage teachers to continuously improve their digital literacy.

Finally, a sound evaluation system for teachers' digital literacy should be established. The system should cover teachers' understanding of digital technology, their ability to apply it, and the degree of innovation in their teaching practice, etc. Through regular evaluation and feedback, it will help teachers to identify their own deficiencies and make continuous improvements and enhancements.

In summary, strengthening the construction of teachers and improving teachers' digital literacy is an important task for the reform of accounting professional education in the digital era. Colleges and universities should build a high-quality and professional digital faculty from multiple dimensions such as awareness cultivation, skill enhancement, incentive mechanism, cooperation and communication as well as evaluation system in order to adapt to the requirements of accounting professional education in the new era.

4.4. Innovative Teaching Methods to Improve Teaching Effectiveness

First of all, universities should combine digital technology with accounting education and introduce modern information

technology tools, such as cloud computing and big data analysis, so that students can master and apply these technologies. In terms of curriculum, they should not only focus on the teaching of basic accounting knowledge, but also increase the number of courses related to digitalization, such as financial data analysis, information system management, etc., in order to improve students' digital business literacy.

Secondly, practical teaching is an important link to cultivate the ability of accounting majors to count business. Colleges and universities can provide students with a platform for practical operation through simulation laboratories and internship bases. At the same time, students are encouraged to participate in actual enterprise projects so that they can learn how to use digital tools to solve practical problems in practice.

In addition, innovative teaching methods should also include the use of diversified teaching means, such as online education and flipped classroom. These methods can stimulate students' interest in learning and improve their independent learning ability. At the same time, teachers should focus on cultivating students' critical thinking and innovation ability to meet the demand for accounting talents in the digital era.

5. Conclusion

Under the background of the booming development of artificial intelligence, the accounting field is ushering in a profound and all-round change, and the professional education of accounting in colleges and universities is facing unprecedented opportunities and challenges.

In terms of challenges, the requirements of the industry for accounting personnel in data analysis, information technology and other key competencies are becoming more and more stringent, and showing a rising trend. Compared with this, the traditional accounting education model in universities is not satisfactory, and it is difficult to meet the new needs arising from the rapid development of the times. Although many colleges and universities have actively taken such initiatives as the opening of relevant courses, but the actual pace of reform is still lagging behind the pace of change in the industry, which leads to a more obvious gap between the expectations of the education reform and the actual results achieved.

Focusing on the current situation, we can see that colleges and universities are actively making changes in many aspects. In the curriculum, computer technology, data analysis and other courses that meet the needs of the times are gradually being incorporated into the accounting professional curriculum system; in the practical teaching link, colleges and universities pay great attention to the establishment of on- and off-campus internship bases, the development of school-enterprise cooperation projects, as well as all kinds of competitions, lectures, seminars and other rich and varied ways, to create ample opportunities for students to operate; in the construction of the teaching staff, the universities In the construction of teaching staff, universities are vigorously introducing and cultivating teachers with digital backgrounds, so as to inject new impetus into the improvement of teaching quality and scientific research level; in the field of educational technology application, some universities have begun to skillfully utilize the modern technologies such as Virtual Reality (VR), Augmented Reality (AR), etc., and boldly innovate the teaching methods, striving to create a more intuitive, vivid and efficient learning experience for students, and are moving towards cultivating intelligent and

informative finance and accounting students on the whole. Overall, they are moving steadily towards the goal of cultivating intelligent and informationized accounting talents.

In view of the above, universities need to update the educational concept, optimize the curriculum, strengthen the construction of teaching staff, innovative teaching methods and other dimensions to promote the cultivation of students' ability to count business. In short, the university accounting education must closely follow the pace of the times, active, in-depth and comprehensive reform and innovation work, from all aspects of the continuous improvement of the quality of education, the only way to constantly cultivate high-quality professionals to meet the needs of the current and future development of the accounting industry, and then contribute to the economic and social development of China's strong force.

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