

# Innovative Model of Accounting Teaching in the Era of Digital Intelligence

Li Guizi<sup>1,a</sup>, Liang Zhongdi<sup>2,b</sup>

<sup>1</sup>Guangzhou College of Commerce, Guangzhou, Guangdong, China

<sup>2</sup>Guangzhou Academy of Social Sciences, Guangzhou, Guangdong, China

<sup>a</sup>gz443526500@gmail.com/liguizi123@outlook.com/443526500@qq.com, <sup>b</sup>portillo@gz.gov.cn

**Abstract:** At present, with the rapid development of social science and technology, the application of information technology in accounting teaching is becoming more and more popular. The era of Digital Intelligence (DI) refers to the new economic era characterized by big data and intelligence. The era of DI has had a huge impact on corporate management practices and accounting practices. In the era of DI, accounting practice has shown a trend of emphasizing strategic analysis and management decision-making, and ignoring accounting. The innovation of corporate business models and changes in accounting practices in the era of DI will bring new challenges and opportunities to the current accounting education. In view of this, this article takes interdisciplinary education as the starting point, analyzes the existing problems of the current accounting interdisciplinary education, and proposes the necessity and feasibility analysis of accounting teaching innovation in the era of DI, which provides reference for the cultivation of compound accounting talents. In practice, by setting up a comparison, the teaching effect of the experimental class and the control class was compared and analyzed. From the information of the test and the survey results, it is known that the teaching method of computer-technology accounting in the era of digital intelligence is very popular among students, and the teaching effect is outstanding. Students' innovative ability and practice have improved, their accounting knowledge structure has been significantly improved compared with before, and they have become more active when participating in teaching activities. The most important thing is that they have gradually formed a scientific way of thinking that can reasonably use the accounting theory knowledge they have learned to solve some practical problems, rather than just taking it for granted.

**Keywords:** Age of Digital Intelligence, Necessity and Feasibility Analysis, Computer Technology, Accounting Teaching, Innovative Models

## 1. Introduction

With the changes in accounting practice in the era of DI, scholars combined with the background of the Internet and artificial intelligence era to conduct a preliminary analysis of the reform of undergraduate accounting teaching. Information technology represented by "Big Smart Cloud Things" is subversively changing the supply structure of the factor market. Accounting talents as human capital are also facing unprecedented challenges. "Financial data sharing", "Internet + smart accounting", new forms of business such as "integration of business and finance" continue to emerge, the accounting profession has been given new connotations, and the society's requirements for the quantity and quality of accounting talents have undergone great changes.[1] As the cradle of social human capital supply and upgrading, colleges and universities must actively cater to the social changes in the era of DI, actively respond to the call of the country's new liberal arts construction, vigorously promote the supply of information technology deeply embedded in the elements of accounting education, and vigorously promote digital, financial and accounting teaching deeply integrate into economic business.

With the innovation of accounting teaching based on CT in the era of DI, subject knowledge systems are undergoing rapid and profound changes. The information revolution, economic globalization, and the diversity of accounting students' professions have all put forward new challenges to accounting teaching, and at the same time made the original problems of accounting teaching more prominent. At present, my accounting teaching objectives are fuzzy, the boundaries between levels are not clear, the professional curriculum system is not perfect, the construction of teaching materials is lagging behind, and the accounting teaching content is slightly outdated[2]. From the perspective of interdisciplinary integration of CT, this paper proposes some problems and necessity of accounting teaching changes based on the

analysis of the current interdisciplinary accounting education problems in the era of DI .

## **2. Necessity of Combining CT with Accounting Teaching in the Era of DI**

The changes in business management practices and accounting practices in the era of DI not only have a significant impact on the training goals of undergraduate accounting talents, but also bring new challenges and opportunities to the current implementation of the undergraduate accounting interdisciplinary education reform in my country. Therefore, it is a necessary and urgent issue to carry out the reform of undergraduate accounting interdisciplinary education in the era of DI.

### ***2.1 Gap between Traditional Accounting Teaching and accounting teaching integrated with CT in the Age of DI***

(1) Educational goals are blurred, and the boundaries between levels are unclear.

At present, our country lacks accurate and unified definition of accounting education goals at all levels. Judging from the current training objectives of accounting undergraduate education in various universities, it can be described as "a hundred flowers bloom". Some are training "senior specialized talents", some are training "accountants", some are training "certified accountants", and some are training "managers".[3] There is a lack of serious and scientific research on what kind of accounting talents should be cultivated in accounting undergraduate education.

(2) The setting of accounting courses is unreasonable, and the teaching content is slightly outdated.

At present, my country's accounting professional curriculum system is not yet perfect. Mainly manifested in the insufficient connection between courses. On the contrary, there are more repetitions between some courses, and some courses shirk each other's content, causing content omissions.

(3) The teaching method is rigid and the assessment method is single.

At present, the accounting teaching method in our country is mostly "cracking duck" classroom teaching, "teacher speaks, students listen".[4] This kind of teaching method cannot fully mobilize students' learning enthusiasm and initiative, and it is not conducive to cultivating students' creative thinking and comprehensive ability. Although advanced teaching methods such as case teaching and discussion teaching have also begun to be applied in accounting teaching, the scope of application is still very narrow, and the level of application is still very primitive.

### ***2.2 The era of DI has affected the training goals of undergraduate accounting talents***

Business management practices and accounting practices in the era of DI have had a profound impact on the training goals of undergraduate accounting talents. First of all, the "DI era" business management practices with technological innovation, business model innovation and big data as the main features put forward new requirements for undergraduate accounting talent training goals. Second, with the emergence of new business models and new assets represented by big data and intellectual resources, accounting teaching based on the "supply, production, and sales" links of manufacturing companies can no longer meet the needs of corporate management practices.[5]

### ***2.3 The era of DI has brought new challenges and opportunities to the reform of undergraduate accounting interdisciplinary education***

The era of DI is an era of rapid innovation in technology and business management practices, which brings new challenges to undergraduate accounting interdisciplinary education, and at the same time creates new opportunities for interdisciplinary education. Under the background of the DI era, the challenges faced by undergraduate accounting interdisciplinary education are mainly reflected in two aspects: First, in terms of knowledge retention and updating, the emergence of many new things in the DI era has challenged teachers to be cutting-edge and forward-looking in their interdisciplinary knowledge. Second, in terms of the integration and application of knowledge, the DI Times emphasizes that accountants should flexibly use strategic management, operational management and other theories to evaluate the value of corporate management practices and provide recommendations for management decisions.[6] However, under the traditional interdisciplinary education model, there is a lack of internal connections between different subject knowledge, which is not conducive for accountants to use strategic thinking to evaluate the value creation mechanism and value creation effects of corporate business

models.

### **3. Feasibility of accounting teaching innovation with the integration of CT in the era of DI**

#### ***3.1 Promote cross-discipline integration to provide strong support for the training of applied accounting talents***

With the continuous development of the Internet and artificial intelligence, the Internet + cloud computing era has given accounting new development requirements. The original basic and repetitive accounting work and auditing work are gradually replaced by intelligent machines, and financial shared services have become the main area of attack for the promotion of modern finance work in enterprises. Therefore, colleges and universities should first make full use of the Internet and actively access high-quality resources such as MOOCs and micro-classes to realize the complementary and efficient combination of online and offline teaching. [7] Secondly, relying on disciplines such as computing and humanities and social sciences, it promotes the efficient integration of management, finance and accounting, providing strong support for the training of high-end applied, composite and even international accounting, finance and auditing talents.

#### ***3.2 Optimize the training system and improve the quality of teaching in the era of DI***

Firstly, change the traditional curriculum and teaching content, and adjust the ratio of theoretical teaching and practical training to the requirements of enterprises' practical operation, and focus on the combination of professional knowledge and the use of advanced technology as a whole. Secondly, promote the reform of teaching methods and approaches, through the sharing of time-sensitive typical cases and the use of advanced teaching equipment and platforms, such as the use of image scanning to achieve the electronic teaching. [8] We will promote the reform of teaching methods, through the sharing of timely and typical cases and the use of advanced teaching equipment and platforms, for example, AI (artificial intelligence) is used to Interpret accounting practice case to stimulate students' interest in learning accounting, their ability to integrate professional knowledge, their thinking skills and their digital abilities, thereby enhancing the quality of teaching and learning in accounting in the age of artificial intelligence. [9]

#### ***3.3 Use the ladder-shaped faculty to help the brand of the accounting professional group***

In the era of DI, the training of high-quality accounting professionals requires new ideas, new paradigms, and new experiences, and these new talent training methods require the support of a team of teachers with a clear echelon structure and complete knowledge and skills. [10] Therefore, increase the introduction or cultivation of outstanding professional academic leaders, and integrate the teaching staff, according to the professional development positioning and characteristics, advocate the "dual-professional" teacher training model, and enrich the urgently needed job talents in the development of professional characteristics. At the same time, it is necessary to strengthen the accounting teacher computer profession knowledge and accounting professional business are simultaneously trained, and the construction of the accounting professional group is realized by the clustered faculty team, and then the cluster brand effect is realized.

### **4. Experiment of Innovative Model of Accounting Teaching Based on CT in the Era of DI**

#### ***4.1 Research Object***

One of the accounting classes in a university in this province was randomly selected as an experimental class, and the other as a control class.

#### ***4.2 Research Methods***

This article uses the controlled variable method.

Experimental group: adopt case teaching method for teaching;

Control group: adopt traditional teaching method to teach.

The experimental class and the control class are two parallel classes. The average scores of the two classes are basically the same, and they are basically equivalent on the basis of knowledge and intelligence; the same teacher teaches, different teaching methods, and the same teaching content; the teaching time is the same, both are 1 School year; in teaching, the practice questions and unit test questions selected in the experimental class are the same as those in the control class; the same test indicators and methods are used to test the experimental class and the control class at the same time.

### 4.3 Statistics

This article uses SPSS 22.0 software to count and analyze the results of the questionnaire, and conduct a t test. The t-test formula used in this article is as follows:

$$t = \frac{\bar{X} - \mu}{\frac{\sigma X}{\sqrt{n}}} \quad (1)$$

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2} \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}} \quad (2)$$

## 5. Experimental Analysis of Innovative Model of Accounting Teaching Based on CT in the Era of DI

### 5.1 Test 1: Exam

The examination questions mainly use practical case questions to examine students, and they are mainly objective questions. The first semester mid-term exam of the third grade of vocational high school students in the experimental class and the control class was used as the pre-test, and the second semester mid-term exam was used as the post-test.

Table 1. First test results

Group		N	Minimum	Maximum	Mean	Std. Deviation
EC	X1	35	48.00	95.00	77.0571	13.47534
	X2	35	58.00	96.00	82.2000	8.14862
	Valid N	35				
CC	X1	35	50.00	95.00	76.4706	12.91754
	X2	35	50.00	96.00	77.1176	11.31040
	Valid N	35				

Note: EC is the experimental class, CC is the control class, the same below.

It can be seen from Table 1 that in the pre-test (X1), the average scores of the experimental class and the control class are not significantly different (77.0571, 76.4706), and the passing rates are 85.71% and 88.24%, respectively. In the post-test, the average academic performance of the experimental class improved by 5 (82.2-77.12) points more than that of the control class, and the teaching effect was significant. There is no significant difference in the academic performance of the two classes of students (35 in the experimental class and 35 in the control class) in the final professional examination of the second semester. In the teaching process, the same teacher teaches, the teaching content, The teaching time is the same. According to the conventional practice, there should be no big difference between the passing rate and average score of the students in the two classes. Now, the experimental class has significantly improved the results compared with the control class, which shows that the students' academic performance is different from that of the control class. Changing teaching methods and innovative teaching are closely related.

The integration of computer science into the innovative teaching mode is not only monotonous learning, but also vivid practice, plot, detail, and reality. It can arouse students' inquiry psychology and form a variety of cognitive contradictions more than general knowledge of principles. Become the main body of the activity in the learning process, launch independent learning activities, exchange, discuss and contend with each other different views, learn from each other's strengths, promote each other, and play

the role of collective teaching in promoting individual students. The students in the experimental classes were removed from the traditional purely intellectual lectures, learning is easy and effortless, the students' enthusiasm for learning is very high, the classroom atmosphere is more active than the control class, the students can actively learn, rather than relying on the teacher's supervision and inspection, turning passive learning into active learning. Therefore, the average score of the experimental class is higher than that of the control class. However, it does not rule out the impact of objective reasons on students. For example, the different educational management methods of the two class head teachers will also affect the learning atmosphere of the class, affect the interaction and cooperation between students, and the learning attitude and learning style of the students. Reflected in classroom teaching, it will eventually affect students' academic performance. Therefore, the implementation of accounting case teaching can definitely improve students' accounting professional course performance, but the improvement of student performance can not be attributed to innovative teaching. Changing teaching methods is only one aspect of improving student performance.

### 5.2 Test 2: Innovative thinking ability test

Choose test questions that can stimulate students' thinking, connect with the reality of production and life, and have open answers.

In the methods proposed by the students, a total of 8 items were selected, and each item was assigned 1 point. The more the methods proposed by the students, the higher the score. The highest score of each student was the point, and then the experimental class and the control class were counted. Achievements, see Figure 1 for details.

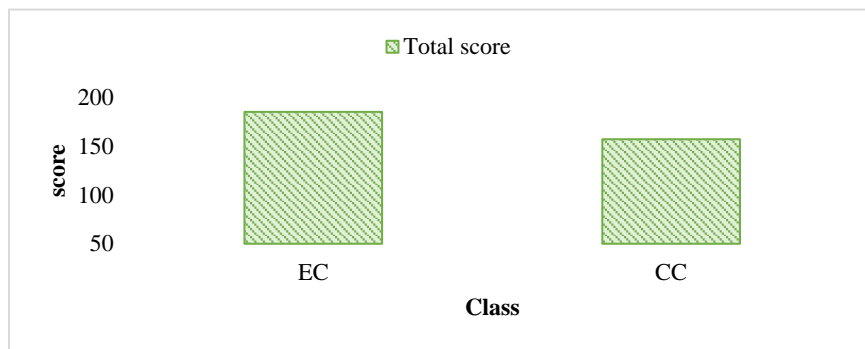


Figure 1. Comparison of total scores between experimental class and control class

It can be seen from Figure 1 that the total score of the experimental class students is 28 points higher than the control class, an increase of 18.5%. According to the statistics of each segment, it is found that the number of people in the experimental class in the low-segment area ( $\leq 4$  points) is lower than that of the control class, but the number of people in the high-segment area is significantly larger than that in the experimental class (see Figure 2).

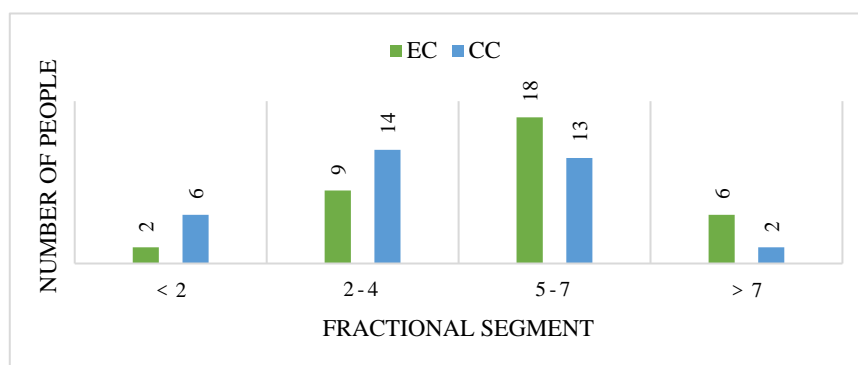


Figure 2. Frequency of occurrence in different fractional segments

In the teaching practice, it can also be seen by comparison that the students in the experimental class can fully understand and master the basic theories, basic methods and basic skills of cost accounting, and the practical ability of the students has been significantly improved, and most of the students can use the knowledge they have learned proficiently. Compilation and analysis of cost accounting statements,

language skills have also been continuously enhanced. In addition, through one academic year of teaching practice, most students can comprehensively apply cost accounting knowledge and experience to analyze cases, grasp the key points of the case, extend and expand the case, creatively evaluate the case, express their views and opinions, and formulate solutions Ideas and solutions for the problem. It can be seen that the innovative teaching mode has a more prominent role in improving students' application ability of accounting knowledge and creative thinking ability.

## 6. Conlutions

Science and technology are the "first accounting environmental factor", and the rapid development of information technology has given birth to a new economy represented by new industries, new business formats, and new business models. The new factor market structure has brought about significant changes in the supply of accounting talents, which in turn stimulated a huge impetus for the reform of accounting education. The era of DI will have a more extensive and far-reaching impact on corporate management practices and accounting practices, and put forward new requirements for the cultivation of compound accounting talents. Therefore, the next innovative model of accounting teaching based on CT in the era of DI needs to continuously update the knowledge reserves of the teaching team, promote the "two-dimensional" integration of knowledge between different disciplines, theory and practice, so as to improve the use of accounting students The ability of high-frequency data and data processing technology to conduct strategic evaluation, operation management, human resource evaluation and financial analysis.

## References

- [1] Yang T H, Lin C C. *DEVELOPING AN INNOVATION MANAGEMENT TEACHING MODEL*[J]. *Jurnal Muara Ilmu Ekonomi dan Bisnis*, 2020, 4(2):285.
- [2] Yao Y, Wang P, Xia X, et al. *The Application of Multimedia Technology in Teaching Innovation*[J]. *Journal of Testing and Evaluation*, 2021, 49(4):20200232.
- [3] Gomez-Lucia E, Logue C H, Szyndel M S, et al. *Innovative teaching in the digital age goes viral*[J]. *Nature Microbiology*, 2019, 4(4):562-564.
- [4] Lyen F M. *Hearing the Tale of the Digital Age from Generation Z: Semiotic Analysis of Turkcell's DI Advertisement Film*[J]. *AJIT-e Online Academic Journal of Information Technology*, 2019, 10(38):175-192.
- [5] Ma Z, Guan J, Li R. *Research on Innovative Teaching Mode of Art Education in the Age of Convergence of Media*[J]. *International Journal of Emerging Technologies in Learning (iJET)*, 2021, 16(2):272.
- [6] Herrador-Alcaide T C, M Hernández-Sol í, RS Galv án. *Feelings of satisfaction in mature students of financial accounting in a virtual learning environment: an experience of measurement in higher education*[J]. *International Journal of Educational Technology in Higher Education*, 2019, 16(1):20.
- [7] Reimer L C, Denaro K, He W, et al. *Getting Students Back on Track: Persistent Effects of Flipping Accelerated Organic Chemistry on Student Achievement, Study Strategies, and Perceptions of Instruction*[J]. *Journal of Chemical Education*, 2021, 98(4):1088-1098.
- [8] Natoli R, Wei Z, Jackling B, et al. *Teaching IFRS: evidence from course experience and approaches to learning in China*[J]. *Accounting Research Journal*, 2020, 33(1):234-251.
- [9] Tondolo V, KC Nóbrega, Severo E A, et al. *Antecedents of student retention: the influence of innovation and quality of teaching in Brazilian universities*[J]. *International Journal of Innovation and Learning*, 2019, 26(3):235.
- [10] Suwarni E, Budiprayitno B. *Innovation on Teaching-Learning Technology based on Visual and Simulation to Improve the Effectiveness and Efficiency in Teaching-Learning Financial Accounting Processes*[J]. *Journal of Advanced Research in Dynamical and Control Systems*, 2019, 11(11):142-149.