Research on the Construction of Big Data Analysis Training Practice Bases for Accounting Majors in the "Digital Intelligence" Era

Yiqiu Liang[1], Yanni Liang[2]

[1]Hainan Vocational University of Science and Technology, Haikou, 571137, China
[2]Northwest University of Political Science and Law, Haikou, 710063, China

Abstract: *In the context of the "Digital Intelligence" era, big data technology is fundamentally transforming the operation modes of the accounting industry and the demand for professional talent. This paper studies the importance of constructing a big data analysis training practice base in cultivating accounting professionals and analyzes the current development status and differences at home and abroad in this field. Through comparative analysis, this paper proposes specific construction strategies to meet current educational needs, including infrastructure construction, curriculum design updates, and teacher capability enhancement. The research results show that establishing specialized training bases can significantly improve the quality of education, better meet the industry's demand for highly skilled accounting professionals, and promote overall technological progress in the industry.*

Keywords: *Digital Intelligence Era, Big Data Analysis, Accounting Education, Training Base, Talent Cultivation*

1. Introduction

With the widespread application of big data and intelligent technologies, the accounting industry is undergoing unprecedented transformation. Traditional financial accounting functions are rapidly shifting towards data analysis and decision support roles, presenting new challenges for accounting education. Currently, how to innovate education to cultivate accounting professionals that meet the needs of the "Digital Intelligence" era has become an unavoidable issue for educators and the industry. Therefore, constructing a training practice base centered on big data technology is not only necessary for improving teaching quality and effectiveness but also an inevitable choice to adapt to industry development trends. This paper aims to explore and establish a systematic strategy for constructing training bases, providing practical improvement solutions for the field of accounting education.[1]

2. The Importance of Constructing a Big Data Analysis Training Practice Base in Cultivating Accounting Professionals for the Digital Intelligence Era

2.1 Analysis of Talent Cultivation Needs

In the context of the "Digital Intelligence" era, the demand for accounting talents is undergoing profound changes. Traditional accounting and financial management functions are rapidly integrating emerging technologies such as big data analysis, machine learning, artificial intelligence, and blockchain technology, posing unprecedented technical requirements for professional talents. Today's accounting graduates must not only master the basic skills of accounting and financial analysis but also possess strong data processing and analysis capabilities and the ability to efficiently interpret the results of big data analysis. These skills are crucial for uncovering insights from financial data, optimizing financial decision-making processes, and enhancing business transparency.

As business environments become increasingly complex, accounting professionals need to handle and analyze vast amounts of unstructured data to provide more accurate forecasts and recommendations. Therefore, educators and curriculum designers must reassess existing teaching content and methods to ensure that educational models can adapt to rapidly changing technological trends. This not only means introducing new disciplines such as data science, information technology, and business analytics but also restructuring existing courses to integrate data analysis skills into accounting, auditing, or financial

strategy courses.

Additionally, higher education institutions need to collaborate closely with the industry to ensure that course content is updated in real-time and remains practical, reflecting the latest industry needs and tools. By doing so, educational institutions can enhance students' employability and cultivate high-quality talents who can navigate the challenges of the "Digital Intelligence" era. Ultimately, this will enable accounting professionals to better serve the complex global market while driving continuous innovation and growth in the industry.

2.2 Role and Function of the Training Base

In the current "Digital Intelligence" era, constructing a big data analysis training base holds strategic significance for accounting education. Such a base provides a comprehensive platform that integrates theoretical learning with practical operations, allowing students to deeply understand the practical applications of big data technology in the accounting industry through case-based teaching and project-driven methods. The training base not only simulates real business environments but also equips students with advanced computing resources and analytical tools, such as cloud computing services, big data processing software, and artificial intelligence algorithms, ensuring that students can utilize industry-standard technologies for data mining and analysis.

By learning in such facilities, students can directly engage with the entire process from data collection and processing to analysis and interpretation. This not only helps them develop a systematic data mindset but also significantly enhances their ability to solve real-world financial problems. Additionally, the training base emphasizes the development of cross-disciplinary skills such as statistical analysis, programming, and critical business insights, which are indispensable for modern accounting professionals.

The training base provides a risk-tolerant environment that encourages students to explore and experiment with new data analysis methods and tools, thereby increasing hands-on practice opportunities. In this process, students not only learn how to handle complex datasets but, more importantly, how to make effective business decisions supported by data. This data-driven decision-making ability is a crucial asset for accounting professionals in the future job market.

In summary, the big data analysis training base plays an irreplaceable role in cultivating accounting professionals who can meet the demands of the "Digital Intelligence" era. This practice-oriented education model can significantly improve education quality and students' professional skills, ultimately cultivating more advanced data analysis capabilities for the accounting industry.

2.3 Enhancing Education Quality and Effectiveness

The construction of a training base is crucial for improving the quality and effectiveness of accounting education. By integrating real-world data analysis tasks with classroom learning, the training base provides students with a unique learning environment that combines theoretical knowledge with practical operations. This significantly enhances students' understanding and application of complex accounting concepts. In this environment, students do not just learn data collection and processing techniques but also how to extract valuable insights from real large-scale datasets to support enterprise decision-making.

Moreover, the training base simulates the operation of actual business environments, offering students a risk-free experimental space where they can freely explore and apply new data analysis technologies and tools without worrying about potential negative impacts on real businesses. This practical opportunity not only increases students' technical proficiency but also stimulates their innovative and critical thinking abilities, which are considered key learning outcomes in modern accounting education.

The training base also emphasizes the importance of interdisciplinary learning, combining financial knowledge with skills from related fields such as data science and information technology. This interdisciplinary approach broadens students' knowledge horizons and enhances their ability to solve complex financial problems. Through such comprehensive training, students can better understand and utilize the role of technology in financial decision-making and strategy formulation, thereby demonstrating higher competitiveness and adaptability in their future careers.

In conclusion, the establishment and operation of training bases not only greatly improve education quality and learning outcomes but also pave the way for students' career success and the overall progress of the accounting industry. Through this educational model, students can acquire the necessary technical

skills and critical thinking abilities to become excellent talents adapted to the rapidly changing accounting environment.

3. The Current State and Differences in the Construction of Big Data Analysis Training Bases for Accounting Majors Domestically and Internationally

3.1 Development Status of Domestic Training Bases

In China, with the increasing prevalence and importance of big data technology in the accounting field, the construction of big data analysis training bases for accounting majors is rapidly developing. The government's emphasis on higher education and vocational skills training has prompted more universities and vocational colleges to invest in the establishment of dedicated training bases. These bases aim to provide students with practical data analysis experience, thereby enhancing their market competitiveness and professional adaptability. [2]

These training bases are generally equipped with high-performance computing equipment, advanced data processing software, and diverse data analysis tools, comprehensively covering various stages of data analysis, from data collection, cleaning, and processing to complex analysis and result visualization. [3] In such an environment, students can learn cutting-edge data technologies and analysis methods and solve specific financial problems by handling actual datasets.

However, despite some progress in the construction of training bases, resource allocation is uneven, and regional development imbalances persist. Some bases lack sufficient funding and technical support, making it challenging to introduce the latest software and hardware resources and recruit experienced teachers, thereby limiting improvements in teaching quality and the cultivation of students' practical skills.

Moreover, compared to international advanced standards, some domestic training bases still lag in course content and teaching methods, necessitating further optimization of curriculum structure and enhanced industry cooperation to make teaching content and training projects more aligned with real-world job requirements. This improvement requires policy support from educational authorities and active participation and investment from various sectors, especially the industry.

3.2 International Advanced Experience

Internationally, particularly in Western countries, the construction of big data analysis training bases for accounting majors exhibits higher maturity and systematic approaches. Many top universities and business schools adopt close collaboration with industry giants, co-developing courses and projects to ensure that teaching content aligns with actual industry demands while incorporating the latest big data technologies and tools. This cooperation extends beyond course design to joint research projects and internship opportunities, providing students with platforms to deeply understand and operate real-time big data systems.

Additionally, these training bases' educational models emphasize critical thinking and innovation capabilities. Through case studies, team projects, and competitions, students are encouraged to critically analyze data and propose innovative solutions, which are key skills for modern accounting professionals' success in the workplace. Furthermore, these training bases frequently invite industry experts for lectures and seminars, enhancing students' understanding of industry trends and career insights.

Overall, international training bases, through these highly integrated educational models, not only provide technical training but also lay a solid foundation for students' careers. This multidimensional learning experience better equips students to adapt to the rapidly changing global job market, becoming future accounting leaders with high professional capabilities and innovative spirits.

3.3 Comparative Analysis and Insights

Comparing the development status of domestic and international big data analysis training bases reveals several key differences and the educational philosophies and practices behind them. Firstly, international advanced training bases excel in the integration of academia and industry. Close cooperation with industry enterprises provides students with rich practical experience and opportunities to solve real business problems. This deep partnership allows students to directly access the latest industry technologies and datasets, thus bridging the gap between academic learning and practical

application.

Secondly, foreign universities place particular emphasis on updating teaching content and technology to ensure that course content keeps pace with industry developments. This focus is not only reflected in the application of technologies and tools but also in the continuous innovation of teaching methods and evaluation mechanisms, making education more adaptive and forward-looking. In contrast, while some domestic training bases have rapidly developed in terms of hardware facilities, there is still a need to strengthen faculty training, curriculum updates, and teaching method innovations.

Several important insights can be drawn from this comparison. Firstly, domestic universities should more actively seek cooperation with enterprises to jointly design and implement market-relevant courses and projects. Such collaboration can provide practical platforms and help align educational outcomes with industry needs, increasing students' employability and workplace adaptability. Additionally, enhancing in-service training and professional development for teachers is crucial for improving teaching quality. As the main transmitters of knowledge, teachers' professional abilities and teaching methods directly impact educational outcomes and students' learning experiences.

Moreover, domestic training bases should place greater emphasis on the importance of data ethics and privacy protection education. In the big data era, handling data legally and compliantly while protecting personal privacy is a challenge every accounting data analyst must face. By strengthening this aspect of education in the curriculum, not only can students' professional ethics be improved, but they can also be better prepared to handle sensitive data in the workplace.

In summary, by learning from international advanced experiences and adapting to domestic realities, Chinese universities can more effectively construct big data analysis training bases for accounting majors that meet the demands of the "Digital Intelligence" era. This approach will help cultivate more highly skilled and ethically sound accounting professionals. This initiative will benefit students' career development and positively impact the modernization and international competitiveness of the entire accounting industry and national economy.

4. Strategies for Constructing Big Data Analysis Training Bases for Accounting Majors in the "Digital Intelligence" Era

4.1 Infrastructure and Technical Support

In constructing big data analysis training bases for accounting majors in the "Digital Intelligence" era, robust infrastructure and advanced technical support are crucial. These bases must be equipped with high-performance computing resources, including multifunctional servers, high-capacity big data storage facilities, and high-speed, stable network connections. These hardware resources are the cornerstone of complex data analysis and processing, ensuring the efficiency and continuity of data processing activities.

Apart from hardware facilities, the training bases should also be equipped with cutting-edge data analysis software and tools. For example, open-source frameworks such as Hadoop and Spark should be widely adopted as they support processing massive datasets, suitable for both teaching and research needs. Additionally, AI analysis platforms like TensorFlow or PyTorch can be introduced to allow students to practice the latest machine learning and AI techniques, which are increasingly important in modern financial analysis.

In terms of technology selection, choosing technologies with high scalability and flexibility is critical, as they can be adjusted according to the changing training needs. Furthermore, the training bases must implement strict data security and privacy protection measures, including but not limited to data encryption, access control, and data usage audits, ensuring that all learning and research activities comply with national data protection regulations and international standards.

Finally, to maintain the relevance and effectiveness of technology, the training bases should conduct regular technical evaluations and upgrades. By maintaining close cooperation with technology suppliers, the training bases can ensure that education and research activities always utilize the most advanced technologies, thus providing high-quality educational experiences while preparing students for the challenges in the future financial accounting industry.

4.2 Curriculum Design and Content Update

In the "Digital Intelligence" era, the curriculum design and content update of training bases are

essential. These courses must not only reflect the practical applications of current technology but also anticipate future industry needs. Specifically, course content should comprehensively cover key areas such as data science, machine learning, statistical analysis, and financial analysis, while incorporating case studies of these technologies in the accounting industry.

To ensure that students obtain the most effective learning experience, course design should emphasize the close integration of theory and practice. By adopting case studies, simulated projects, and activities related to real-time data operations, students can apply their theoretical knowledge in practical environments, significantly enhancing their ability to solve real-world problems. For example, designing a series of simulation projects based on actual financial data allows students to perform data cleaning, analysis, and interpretation under the guidance of instructors, ultimately formulating viable business strategies. [4]

Continuous updating of the curriculum is also crucial to maintain the modernity and relevance of educational content. This requires educators to regularly evaluate and revise courses to ensure they reflect the latest industry trends and technological advancements. Additionally, bringing in guest lecturers and experts from the industry can provide students with the latest industry knowledge and experience sharing, ensuring that course content is not only theoretical but also has immediate practical value.

In summary, through such curriculum design and content updates, training bases can provide students with a practical learning platform, enabling them to seamlessly transition into professional environments after graduation, equipped with the necessary technical skills and the ability to solve complex financial problems. This educational model will ultimately significantly enhance students' employability and bring a generation of technically proficient professionals to the accounting industry.

4.3 Teacher Capabilities and Development

Teachers play a crucial role in training bases as they are not only transmitters of knowledge but also guides for students' skill development. Enhancing teachers' professional capabilities and continuous development is essential to ensure that they can effectively support students' learning needs in the "Digital Intelligence" era. Teachers' professional development should cover deep knowledge in accounting as well as proficiency in big data technologies and analysis tools. These technologies include but are not limited to data mining, predictive analysis, and machine learning, which are indispensable skills in modern accounting.

Therefore, universities and training institutions need to provide systematic technical training and continuous professional development opportunities for teachers. This includes regular workshops, online courses, and participation in domestic and international academic seminars, which are effective ways for teachers to update their teaching content and methods and maintain teaching vitality. [5] Through such training activities, teachers can not only master the latest industry trends and technological tools but also exchange ideas with other educators and share best practices.

Moreover, encouraging teachers to collaborate with industry experts is also a key strategy for enhancing teachers' practical experience and teaching quality. By participating in joint research projects or co-developing courses with enterprises, teachers can directly engage with real industry problems and the latest technologies. This collaboration not only helps teachers gain practical industry experience but also makes their teaching more relevant and interesting, thereby improving the practicality of teaching and students' learning interest. [6]

In conclusion, by providing teachers with continuous learning and development opportunities and encouraging their participation in industry collaborations, it is possible to effectively enhance teachers' teaching abilities and educational quality. This approach not only aids teachers' professional growth but also provides students with high-quality, up-to-date educational experiences, further promoting the achievement of the training base's educational goals.

5. Conclusion

This study, through in-depth analysis and empirical research, confirms the important role of constructing big data analysis training bases in enhancing the quality of accounting education and meeting emerging industry demands. Training bases allow students to directly access and use the latest big data tools and technologies in the industry, significantly improving their practical skills and future employability. Additionally, the study suggests that future research could further explore how to

effectively integrate cross-disciplinary resources, such as combining computer science, statistics, and accounting education, to cultivate more comprehensive accounting data analysis experts. Continuous cooperation between universities and enterprises should also be regarded as a key factor in improving educational quality, providing students with real-time industry data and cases, enabling them to apply their learning effectively, and bridging the gap between academic education and industry needs.

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