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Reflection on the Construction of Practical Teaching Courses for Human Resources Big Data Analysis

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Abstract: In the era of big data, various industries are undergoing digital transformation, using data to assist decision-making and drive operations. Universities place greater emphasis on cultivating students' data analysis abilities. For the human resources major, this article explores the necessity and situation of offering the Human Resources Big Data Analysis course, and proposes the construction ideas of the Human Resources Big Data Analysis practical course, providing reference for the construction of the Human Resources Major Big Data Analysis course in applied undergraduate universities.

1. Introduction

With the popularization of the Internet and the rapid development of information technology, the era of big data has quietly arrived. The Action Plan for Promoting the Development of Big Data issued by the State Council comprehensively and systematically deploys the action work for the development of big data, marking a new historical stage for the action of big data development. How to make good use of big data information to cultivate high-quality professional and skilled talents for society, timely discover students' various ideological tendencies in the process of professional teaching, and highly integrate course teaching with ideological education is a new task faced by universities.

In the Internet era, big data technology has had a significant impact on enterprise human resource management. The traditional human resource management based on subjective evaluation no longer meets the requirements of the big data era. Human resource management pays more attention to improving efficiency through data mining and analysis [1]. Therefore, human resource management professionals not only need to master the professional knowledge of human resource management, but also need to have the ability of big data analysis, strong digital literacy, and be able to effectively apply big data to make more scientific, objective, reasonable, and effective human resource management decisions. The human resource management major in universities needs to actively adapt to the new talent requirements of the times, accelerate talent training reforms, and cultivate talents that match the needs of enterprises. In the era of big data, human resource management is facing a series of new challenges that are different from the past. The rapid development of big data has provided new ways and approaches for enterprise human resource management and talent competition. Domestic scholars have analyzed the content of human resource management work in

the era of big data [2-5], the problems existing in current enterprise human resource management work, and based on this, have also explored specific strategies for enterprises to effectively carry out human resource reform in the era of big data. Overall, there is still little in-depth research on the construction of human resources big data analysis courses, and the related teaching and practical aspects have not received sufficient attention. The limited research also lacks systematicity and depth.

2. The necessity of offering a practical course on big data analysis for human resources majors

2.1 Professional background

The concept of "big data" was first proposed by the globally renowned American consulting firm McKinsey in 2009, which profoundly marked the rise of an emerging and transformative "factor of production" in the context of the data age. In the field of enterprise management, human resources have always been regarded as the cornerstone and key to building a company's competitive advantage and core competitiveness. As a bridge connecting internal resources and external environment, human resource management directly affects the quality of strategic decision-making in enterprises, and has been widely incorporated into the strategic management system of enterprises, becoming an indispensable part of enterprise strategic planning.

With the comprehensive arrival of the big data era, its profound influence has spread to multiple fields and industries in society, prompting many industries to undergo an unprecedented transformation and upgrading. In this era, the field of human resource management has also undergone profound changes, and traditional management models are gradually being replaced by new management models driven by big data. Faced with this trend, how to accurately grasp the essence of big data analysis and how to scientifically and effectively use big data technology to promote innovation and change in human resource management has become an important issue in current education reform and enterprise development research [6-7]. This transformation is not only a transcendence of traditional human resource management models, but also an inevitable choice to follow the trend of the times and seize future competitive opportunities.

2.2 Course Background

The curriculum application first reflects the progressiveness and contemporary nature of the talent training goal positioning: the transformation and innovation of talent training mode positioned in the context of digital transformation to meet the needs of digital transformation of enterprise human resources. Focusing on the analysis and application of big data in human resources scenarios, this study demonstrates the implementation of digitally-driven business strategies in the field of human resources. Unlike other engineering big data courses, this practical teaching course examines enterprise issues from the perspective of a professional digital human resource manager. Secondly, teachers authentically recreate HR scenarios by covering enterprise data analysis processes, designing scientific tasks, providing feedback, and simulating real talent website interfaces to train students in data collection tools for external data. The human resources data obtained from real enterprises after desensitization ensures the objective reality of the data and effectively protects privacy. Again, the design of learning tasks conforms to the teaching philosophy based on learning output, fully reflecting the scientific nature of data analysis ability acquisition: fully considering students' foundation and level, flexibly pushing learning tasks, training through progressive reinforcement methods, forming human resources big data analysis thinking and awareness, and enhancing logical analysis ability; Special emphasis is placed on training the ideas and methods of data-driven innovation to solve human resource problems; The group has both division of labor and collaboration, and the assessment fully reflects the characteristics of the big data learning process. Finally, the integration of teaching

tools and analysis cloud platforms with data mining platforms achieves full technological connectivity for big data analysis projects: perfectly integrating the learning process, teaching management, and teaching tools (data collection tools, data cleaning tools, visualization tools, data mining tools) into one, achieving full technological connectivity for big data analysis projects, ensuring the coherence and effectiveness of the learning process, and reflecting the guidance and autonomy of model tools. Cloud-based analytics tools empower multidimensional exploration and analysis of problems and root causes, offering user-friendly operation, dynamic adjustments, and real-time updates. The data mining teaching tool has simple parameter settings and easy to understand result explanations. The course aims to comprehensively and systematically demonstrate the theory and technology of human resources big data analysis to students.

Through the teaching of this course, the basic concept of human resources big data is constructed, enabling students to possess certain abilities in human resources big data analysis, proficiently master the process, tools, and methods of sea human resources big data analysis, train and develop thinking, and lay a theoretical and practical foundation for cultivating data thinking and awareness of human resources management personnel, and using digital tools to assist business decision-making.

3. Construction ideas for the practical course of human resources big data analysis

3.1 Accurately positioning course objectives

This course focuses on cultivating students' ability to analyze and apply human resources big data in the context of digital transformation. By analyzing the characteristics, content, and trends of human resources big data, a logical framework system for HR digital analysis and application is constructed. Project task driven practical training is adopted to cultivate students' digital awareness and thinking, master interdisciplinary professional comprehensive knowledge and methods and mining techniques for collecting, cleaning, organizing, and analyzing human resources big data. Students are proficient in completing quantitative analysis of various dimensions of human capital, analyzing, mining, and visualizing human resources data in typical business scenarios, and are able to propose innovative optimization or management decision-making suggestions. Specifically, it includes the following aspects:

Firstly, one should be able to grasp the basic characteristics, processes, tools, and methods of human resources big data analysis, master the relevant technologies of human resources analysis, gain insight into human resources business needs, and analyze the basic situation of human resources. To enhance business decision-making, organizations should cultivate data-driven thinking and leverage digital tools.

Secondly, one should be able to grasp the basic theories and design processes of human resources big data analysis, master the strategies and methods of analysis, and use advanced data mining techniques to conduct data analysis in areas such as talent profiling, training evaluation, performance analysis, personnel planning, effectiveness analysis, and salary evaluation. The framework demonstrates how big data analytics enables data-informed decision making, transforming HR management practices from traditional experience-based models to contemporary quantitative-driven systems.

Thirdly, one should be able to master the methods of human resources data analysis and mining, and design specific solutions for the application of human resources big data analysis. The curriculum design expands disciplinary boundaries by synthesizing HRM principles with hands-on training in big data techniques and tool applications. Through case-based learning, students investigate technological innovations in HR practices and evaluate how data-driven approaches enhance organizational decision-making.

3.2 Follow the course competency requirements

The construction of practical teaching courses for big data analysis in the field of human resource management relies on advanced practical education concepts, the latest application practices, open practical teaching platforms, and a powerful education service system. It integrates industrial resources, builds a digital human resources and intelligence talent system, and cultivates compound innovative talents. To address evolving industrial, social, and technological demands, universities can innovate talent training mechanisms by exploring models that align with these dynamics. By focusing on cultivating high-quality talents, institutions may refine practical curricula and training programs, ultimately delivering robust talent pipelines to support industrial and social development. Furthermore, committing to integrating contemporary HR methodologies with digital technologies enables the development of cutting-edge courses and resources. This approach trains professionals for contemporary HR roles, enhances practical teaching resources, and elevates the efficacy of hands-on education.

This practical teaching course is guided by professional requirements and focused on professional activities for course design and development. The tasks go from simple to complex and from easy to difficult, allowing students to gradually perceive the work content of big data analysis and application in various business scenarios of human resource management, master relevant data analysis skills, discover problem-solving methods, and develop the ability to creatively carry out work, thereby cultivating students' professional data insight ability in human resource positions. We provide students with various typical real-life scenarios for human resources big data analysis and application, with intelligent management of the entire human resources lifecycle as the starting point, and the full process of enterprise human resources big data analysis and mining projects as the driving force. This promotes students to form strong digital thinking and awareness of human resources data-driven business strategies, master the technology and methods of human resources big data mining and analysis, and have the ability to use big data analysis and mining technology to conduct business insights and creatively solve human resources problems.

3.3 Choose a path for imparting course knowledge

In order to improve students' internship and practical training conditions and enhance their practical skills, schools and related industry enterprises can explore and practice diversified cooperation models to jointly build a human big data practical teaching platform. This measure aims to achieve mutual benefit and win-win results for both parties. Specifically, this collaborative model encourages students to actively participate in the data collection work of a specific enterprise or the entire industry for the past three to five years. Subsequently, these raw data are carefully cleaned and processed to eliminate errors and redundant information, and advanced data analysis tools are used to conduct in-depth analysis of enterprise operation status and predict future trends. This process not only exercises students' data processing skills, but also deepens their understanding of industry dynamics.

In order to more effectively implement the teaching of human resources big data analysis courses, modern information education platforms such as "Study Pass" can be fully utilized, and a blended teaching method that deeply integrates online and offline can be adopted. A series of progressive teaching tasks can be carefully designed. By strategically embedding thought-provoking guiding questions within the core knowledge components of the course, this approach encourages students to employ brainstorming techniques in collaborative discussions. This not only cultivates their critical thinking and innovative capacities but also ensures they can effectively translate insights from HR big data analytics into evidence-based decision-making practices.

In order to further improve teaching quality and strengthen students' teamwork ability, the course

adopts a group teaching organizational form, and is reasonably divided into study groups of 4 to 6 people according to the class size. Each group needs to work together according to established tasks to complete data collection, cleaning, application of basic analysis tools, data modeling and analysis, and ultimately create a PPT to present the results of data analysis in a visual and intuitive form. This teaching process not only fully mobilizes students' subjective initiative, but also effectively enhances their professional judgment and problem-solving abilities. The core value of group teaching mode lies in promoting the cultivation of teamwork and exploratory spirit. In the process of project execution, team co creation techniques from action learning are widely introduced, encouraging lively discussions within student groups. Through continuous thinking and inspiration collisions, novel insights and creativity are generated, effectively stimulating students' innovative potential. This series of teaching practices not only enhances students' learning motivation, but also lays a solid foundation for their teamwork and innovation abilities in their future careers.

3.4 Expand course content design

The main content of the course includes an overview of human resources big data analysis, related technologies of big data analysis, analysis of human resources business needs, human resources data collection and preprocessing, human resources data analysis and mining, and application cases of human resources big data analysis. The courses are closely related to the basic and compulsory courses of human resource management disciplines such as Principles of Management, Fundamentals of Statistics, Enterprise Management, Introduction to Human Resource Management, and Training and Human Resource Development. They are professional characteristic courses for cultivating human resource talents. Learning this course on the basis of mastering professional knowledge can provide more creative and targeted solutions to theoretical and practical problems in human resource data analysis.

Specifically, the key issues to be addressed are:

(1) Knowledge: 1) Master the concept and basic characteristics of human resources big data analysis; 2) Master the scope and sources of human resources big data; 3) Master the general process of analyzing human resources big data projects.

(2) Abilities: 1) Master the methods for collecting and preprocessing human resources data; 2) Master the visualization and data mining tools used in human resources big data analysis; 3) Master the strategy formulation methods based on the analysis of human resources big data projects; 4) Master the inventory indicators for talent inventory, such as data types, personnel structure, performance, personnel flow, key positions, talent echelons, and business analysis, as well as skills in visual analysis and data mining analysis, and be able to propose improvement suggestions and methods; 5) Master skills in talent demand profiling, job information crawling, data preprocessing, text analysis, word cloud generation, and topic analysis, and be able to provide decision-making recommendations.

(3) Qualities: 1) Cultivate students' big data thinking and awareness; 2) Enhance students' logical thinking ability; 3) Improve students' skills in using big data analysis and decision-making tools; 4) Cultivate a sense of responsibility, good professional ethics, and professional qualities such as confidentiality awareness.

(4) Content: 1) Course outline: Detailed planning of course time allocation, chapter structure, experimental arrangement, and exercise analysis; 2) Teacher's lesson plan: Each chapter is equipped with carefully crafted PPT courseware, aimed at assisting teachers in efficiently conveying knowledge points. Provide reference books, academic paper references, and abundant online resource links closely related to the course; 3) Typical teaching cases: Based on the course content, carefully develop two representative teaching cases; 4) Exercises: Design targeted exercises for each chapter

according to the teaching content and progress, with reference answers attached after the exercises. 5) Course experiment: Detailed description of the purpose, background, required materials, operational steps, and expected results of the experiment.

3.5 Determine the content of curriculum reform

In the current era of informatization and data-driven development, the construction of practical teaching courses for big data analysis in human resource management is particularly important. To cultivate HR professionals with theoretical rigor and evidence-based practical competencies, this course's reforms delve into content restructuring, pedagogical innovation, and industry-aligned skill development. The specific reform content is explained as follows:

(1) Guided by the core of solving problems in human resources business scenarios

The fundamental starting point of course construction is the solution of typical problems in different scenarios of the human resources field, which is different from the traditional engineering level big data courses that only focus on the technical level of teaching mode. All data analysis projects are derived from the actual needs of enterprise human resource management, aiming to solve the core and key issues in key aspects of human resource management such as "selection, education, and retention". This reform direction highlights the business orientation of the curriculum, making the teaching content more closely related to practical work scenarios.

(2) Simulate the entire process of a real enterprise human resources data analysis project

The course focuses on the key steps of human resources data analysis projects, emphasizing the importance of business understanding and data understanding, while highlighting the specificity of human resources data collection, preprocessing, and other content. By relying on commonly used analysis and mining models in human resource analysis, the course closely integrates theoretical knowledge with practical operations, running through the entire process of solving human resource management business problems, thereby enhancing students' practical abilities.

(3) Emphasize the cultivation of data analysis skills in the field of human resource management

According to the future requirements and trends for human data analysts, the data analysis ability of human resource management and related majors will become a key and core skill for rapid career growth in the future. In the construction of practical teaching courses for human resources big data analysis, emphasis is placed on cultivating awareness and thinking of data analysis and mining, as well as data analysis abilities, to promote the formation of digital thinking and innovation abilities among students majoring in human resources management.

(4) Focusing on innovative optimization or improvement of management decision-making ability, innovation is organically combined with skill training

The fundamental purpose of data analysis and mining is to apply it to decision-making. This course focuses on cultivating students' innovative optimization or management decision-making abilities. By extracting and discovering knowledge from data analysis conclusions, it is integrated into management innovation or decision-making to enhance innovation capabilities. In the design of practical training tasks, the team co creation technology of action learning was introduced. Through intense discussions and thinking collisions within the group, many viewpoints and new ideas were generated, which stimulated students' innovation ability.

(5) Make teaching design more interesting

In response to the demands of contemporary college students for a sense of achievement and self actualization, this course incorporates more interactive experiences and motivational models at the content level in its teaching design, with a focus on carefully designing scene interactions and a sense of integration. By using fun teaching methods, we aim to stimulate students' interest and enthusiasm in learning, and promote their ability improvement in a relaxed and enjoyable atmosphere. This

reform measure reflects the positive promotion effect of "students enjoying learning" on ability enhancement.

4. Issues to be noted in the future

This course focuses on integrating big data thinking into the teaching process. Firstly, the application of big data thinking in the field of human resource management is mainly reflected in the comprehensive collection, efficient storage, detailed classification, and precise processing of data generated in enterprise recruitment, training, performance management, and other related processes, providing solid data support for human resource decision-making. This application not only covers traditional employee information management and performance evaluation, but also further expands to fields such as data analysis and visualization of results, prediction of talent trends, and report generation, greatly expanding the scope of practical teaching content centered on the cultivation of basic human resource management abilities. In the context of the big data era, special attention should be paid to avoiding the disconnection between big data technology knowledge and human resource management professional knowledge when constructing training courses for human resource data analysis. The key is to ensure the reasonable construction of the knowledge system between big data knowledge and human resource data analysis theory, as well as the close connection and high fit between theoretical knowledge and specific practical training tasks. Therefore, the principles of moderation and practicality should be followed, and the proportion, breadth, and depth of big data knowledge in the curriculum should be scientifically regulated to prevent deviating from the original intention and direction of talent cultivation due to the one-sided pursuit of incremental big data knowledge. The fundamental work of big data thinking and human resource management is not mutually exclusive, but complementary, jointly promoting the development of human resource management towards a more scientific and efficient direction.

Secondly, the integration of big data and human resource management knowledge, as well as its construction in practical courses, is a gradually evolving process. The application of big data technology in the field of human resource management has clearly demonstrated its important position as a future development trend, and it is also a decisive factor in promoting the transformation and upgrading of human resource management to a higher level. However, deeply integrating these two types of knowledge to form a completely new knowledge system and constructing a talent cultivation system that matches the level of higher vocational education based on it is a complex and long-term task that cannot be quickly achieved. Simple knowledge accumulation obviously cannot meet the diversified needs of talent cultivation in the context of the new era. In the specific implementation process, targeted development strategies should be formulated based on the learning status and actual professional development of human resource management students. However, the integration of big data and human resource management related knowledge in practical courses is a long-term process, and a simple aggregation model is difficult to achieve talent development goals in the new environment. In practical operation, different construction plans can be developed based on the learning situation and professional construction foundation of students in this major. For example, if there is still room for improvement in the teaching staff, it is possible to consider adding training courses on big data fundamentals to the talent development plan, in order to initially cultivate students' data thinking and tool usage abilities. Furthermore, this approach integrates applied instruction of big data concepts into one or more practical HR courses, ensuring students gain hands-on experience with data-driven HR methodologies. With a solid foundation in construction, especially with a mature teaching team, the existing practical teaching system can be directly transformed, and big data practical training content can be added to corresponding professional practical courses to achieve efficient utilization of class hours.

5. Conclusion

The practical teaching course of human resources big data analysis is guided by the educational philosophy of results orientation, with enterprise employment standards as the teaching and training objectives, and design guidance for teaching content. Taking the path of enhancing the digital capabilities of human resource management talents as the main teaching thread, driven by task processes, we provide students with a highly simulated enterprise work environment, management system, business processes, and business data. Through task driven and role-playing exercises, students can improve their ability to analyze human resource big data. In the era of digital economy, application-oriented undergraduate colleges offer courses on human resources big data analysis, which can combine big data technology with human resources theoretical knowledge, process and analyze the massive data generated by modern enterprise human resources according to the big data processing process, meet the needs of scientific decision-making in enterprise management, achieve digital transformation of enterprises, and implement the national digital economy talent strategy. The course is currently under construction and practical exploration. Curriculum reform and construction need to be continuously optimized and improved to enhance the quality of talent cultivation and meet the needs of the times.

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References

[1] Chen Jicheng, New Trends in Human Resource Management [J]. Think Tank Era, 2018 (6): 12

[2] Gene Pease, HR's Big Data Thinking: Optimizing Labor Costs with Big Data [M], People's Posts and Telecommunications Press, April 2020

[3] Zhang Minna. Research on DHR Talent Training Strategies for Human Resource Management under the Background of Big Data [J]. Modern Marketing (Business Edition), 2020 (11):10-11.

[4] Yan Xuefang. The Application of Big Data in Enterprise Human Resource Management: A Case Study of Tencent [J]. Enterprise Reform and Management, 2019 (17): 49-50

[5] Yao Kai, Gui Hongyi. Big Data Human Resource Management: Transformation and Challenges. Journal of Fudan University (Social Sciences Edition), 2018, 60 (3): 146-155

[6] Huang Dejin. Research on Innovation of Human Resource Management Mode in Universities in the Era of Big Data - Evaluation of "Research on Innovation of Human Resource Management Mode for University Teachers" [J]. Science and Technology Management Research, 2022, 42 (09): 231

[7] Zheng Changsong. Analysis of the Application of Big Data Technology in Human Resource Management: A Review of China Business Press's "Data Analysis of Human Resource Management" [J]. Price Theory and Practice, 2023 (07): 215