Artificial intelligence and human resource development

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Abstract: The impact of artificial intelligence on enterprise transformation are changing the way of human resource management and development, and AI has an impact on the current practitioners. This paper discusses the application of artificial intelligence in human resource development activities of enterprises, and the influence of this technology on human resource development activities with the application and popularization of artificial intelligence technology. Finally, author puts forward corresponding suggestions.

1. Introduction

With the rapid development of science and technology, artificial intelligence has set off a strong wind in the world. In order to catch up with this wave of scientific and technological change, countries around the world have introduced various industrial development plans, such as "made in China: 2025", Germany's "industry 4.0", etc. The research and development of artificial intelligence began in the 1950s. It is a technology that endows computers and other machines with intelligence.

Artificial intelligence (AI) is a new technology which researches and develops the theory, method, and technology and application system, applied to simulate, extend and expand human intelligence. One of the main goals of artificial intelligence research is to make the machine competent for some complex tasks which usually need human intelligence. The application of artificial intelligence has two foundations: one is intelligent technology and automation technology; the other is big data as raw material support [1].

In recent years, many scholars or job seekers are discussing whether artificial intelligence technology will bring large-scale unemployment. For the study of this problem, scholars such as goos and Marten think that when the work task can be completed by the computer through a series of program code control, it will lead to the decline of labor employment. However, for the work distributed at both ends of skill level, due to the non-procedural work, which requires the ability of adapting to the environment, solving problems or innovation, the employment proportion of high skilled and low skilled manual workers will increase instead. Autor et al. (2013) found that in the past 25 years, the actual income and employment rate of workers in most low skilled occupations and their industries have stagnated or declined. Looking at the research on the employment and wage change of workers under the artificial intelligence technology, it can be found that because of the wide application of artificial intelligence technology, the polarization of employment rate and wage rate exists. Therefore, in today's society where artificial intelligence technology is more and more widely used, it is very important for enterprises to carry out human resource development activities [2] [3].

On the one hand, in order to assist other business departments to carry out relevant AI training for employees, the human resource department must be familiar with the basic knowledge of artificial intelligence technology. On the other hand, the human resource management department should learn to use artificial intelligence technology to provide personalized services for employees, improve the efficiency of human resource management, then accurately train the skills of relevant employees.

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2. Literature review

"Human resource development" first appeared in the 1950s. Different scholars have different views on the concept of human resource development. Roswell (1985) thinks that human resource development refers to any planned education, training and development activities carried out by the organization. He combines the realization of the strategic objectives of the organization and the satisfaction of the individual needs in the organization with the professional ideal. Richard Swanson (1995) thinks that human resource development is a process of training and releasing workers' professional skills through organizational development, employee training and development, aiming at improving performance. Chen Yuandun and Chen Quanming (1995) think human resource development mainly refers to the formal education, intellectual development, vocational training and social enlightenment services provided by the state or enterprises to all personnel involved, including the whole process of education, deployment, training et al. Zhu Bixiang (2007) believed that human resource development should be understood from the perspective of human capital theory. Human resource development is an investment activity, which is, "investing in people" and "people investing in themselves". It can take the form of formal school education, on-the-job training, and learning by doing, medical care, and employment migration and information search. Xiao Mingzheng (2015) believes that human resource development is an activity that developers utilize, transform, and shape the established human resources through learning, education, training and other effective ways, in order to achieve certain organizational goals and development strategies .Although scholars have different definitions of human resource development, they all think that human resource development can be achieved through learning, education, training and other ways. [4].

"Artificial intelligence" was first proposed by John McCarthy at the Dartmouth conference in 1956.McCarthy believes that artificial intelligence is the science and engineering of developing intelligent machines, especially intelligent computer programs. It is similar to using computers to understand human intelligence, but artificial intelligence does not limit itself to biological methods. Artificial intelligence is a science and technology based on computer science, biology, psychology, neuroscience, mathematics and philosophy. Yang Weiguo, Qiu Zitong, etc. believe that artificial intelligence is a technology created to achieve a specific task goal that can show a similar level to human ability (cognition, thinking or action). Since alphago defeated Li Shishi in 2016, the wave of artificial intelligence has swept the world. At present, the application of artificial intelligence technology in China is still in the early stage of exploration. The number of AI enterprises in China has increased significantly in recent years, and the commercialization of weak artificial intelligence has begun. In today's world, the application of new artificial intelligence technology and artificial intelligence centered on machine learning in the field of deep learning are the focus of scientific research and development. [5].

Putnam, a.o., C. R. Bell et al. (1987) believed that as the new technology of artificial intelligence matures, human resources department must take the lead in showing enterprises how to use it. [6] The application of artificial intelligence technology mainly relies on statistics and other methods to collect big data, and then uses technical means to endow products with analysis ability, finally constantly optimizing their own functions and behaviors. Tom stachura, vice president of talent solutions and personnel analysis at IBM, commented on the application of AI in human resources: AI can be called an accelerator to help us collect various data and provide information for decision makers, employees or business leaders. With the help of artificial intelligence, we can quickly provide appropriate intelligence and realize large-scale individuation.

3. Application of AI in human resource development

Professor Li Chaoping, Professor Xu Shiyong, etc (2019). Presided over a discussion on which functions of human resource management adopt artificial intelligence technology in the survey, we found that in today's human resources management department, there are 15 functions that have applied AI technology, as shown in table 1. It can be seen from the survey results that the application

of artificial intelligence technology in human resource development activities is not very popular.

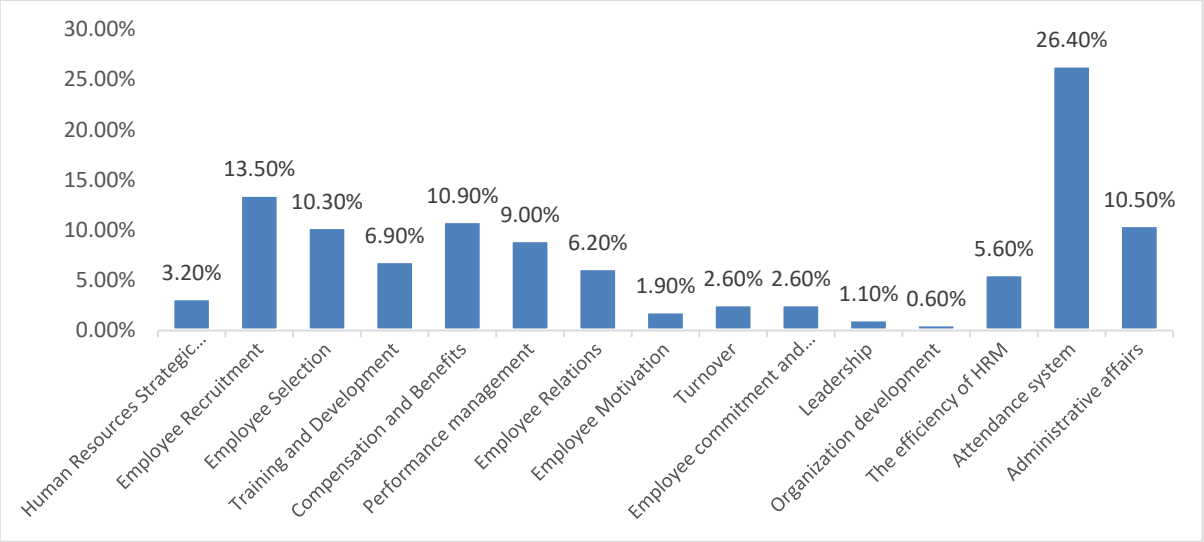

Figure 1. Which functions of human resource management adopt artificial intelligence technology

4. Impact of AI on human resource development activities

4.1 Impact of AI technology on the requirement analysis of human resource development

When there is a gap between the organizational development goals and the quality level of personnel in the process of achieving these goals, between the existing quality level of employees and the quality level required by the organizational development, and between the existing quality level of employees and the personal ideal level of employees, the demand for human resource development of enterprises arises. The indicators of demand analysis include attendance rate, working attitude, behavior performance, product quality, equipment utilization rate, etc.

In the past, human resource department spent a lot of time to assess the attendance rate and performance of employees, which not only reduced the work efficiency of human resource department, but also increased the human and time cost of enterprises. Nowadays, the personnel department uses the punch-card machine to file and archive the fingerprint or face information of all employees through the artificial intelligence technology, and records and processes the punch-card situation of employees every day according to the setting of time assessment, so as to provide the relevant management department or the personnel department with assessment data information. The record and processing of these data information is much more convenient and accurate. With the popularity of the Internet and intelligent devices, enterprises can collect more and more personal and work information of employees through intelligent devices. The AI technology based on big data can quickly analyze the data generated by employees in daily life, peep into the current working state and working skills of employees, and make a reasonable analysis of some advantages and disadvantages of employees, so as to provide a decision basis for whether enterprises need to carry out human resource development activities.

4.2 The influence of AI technology on training

Employee training refers to the planned implementation of activities that help employees learn and work related capabilities. Training can directly affect and change the knowledge, skills, attitude and potential of employees, and then affect the motivation, behavior and efficiency of employees in the work, and finally change the organizational performance, improve the professional ability of employees, improve the work quality of the organization, enhance the competitive advantage of the organization, and meet the needs of employees to realize their self-worth.

"Who needs training", "which skills need training" and "how to train" have always been issues that managers have to spend a lot of time and energy to consider. The AI technology based on big data can answer such questions very well. After analyzing the big data generated by the massive employee

data, it can predict the needs of individual employees with high precision or recommend the skills they may need to master to employees;

In the traditional enterprise training and development mode, the selection of training teachers, the arrangement of training time and the application of training methods will be hindered by time, space, equipment and resources, making the training effect not significant. The training and development system based on artificial intelligence technology can solve these problems well, and make enterprise training more intelligent. the online teaching mode of intelligent training system can break the time and space restrictions, make trainees contact with excellent training resources at home and abroad, and improve the training effect; trainees can also upload the questions relying on artificial intelligence voice recognition and image identification and other technologies to the training system, finally, the central database of the training system will analyze these questions, and get the answers. [7].

5. Conclusion

Putnam, A.O., C. R. Bell et al. (1987) thought that with the maturity of artificial intelligence new technology, human resource department must take the lead in showing enterprises how to use it. Professor Li Chaoping, Professor Xu Shiyong, etc (2019) find that about 60% of human resource management practitioners surveyed think that human resource department is not fully prepared in the face of artificial intelligence; only 7.7% think they have Ready for AI. With the continuous development of artificial intelligence technology, the impact of artificial intelligence technology on human resource management practitioners will become more and more serious. Only by fully understanding and applying artificial intelligence technology, human resource management practitioners can better help enterprises to play the largest role in selecting, educating, employing and retaining people. [6].

5.1 Improve the processing capacity of massive data

Bernard Mar once proposed that human resource management in today’s society is data-driven human resource management (or intelligent human resource management). Data-driven human resource management refers to using data to obtain insights. These insights can not only improve the performance of internal personnel (including human resource management team), but also contribute to the overall success of the company. Eric Schmidt, executive chairman of alphabet, Google’s parent company, said: by 2020, the number of digital information created worldwide is estimated to reach 44zb.The explosive growth of data makes it easier for human resource management team to obtain recruitment data, training data, and absence data and so on. Traditional HR people often neglect the practical application of these data or do not fully realize the value of these data. Now, in the era of artificial intelligence based on big data, enterprises can predict the turnover intention and training needs of employees according to these data. Therefore, human resource management practitioners must improve their ability of processing massive data, then transform data into insights through human resource analysis, and improve organizational performance. [7].

5.2 Interdisciplinary way of thinking

Artificial intelligence technology is a science and technology based on computer science, biology, psychology, neuroscience, mathematics and philosophy. In the era of artificial intelligence, if human resource management practitioners want to better complete human resource development activities, they should not stick to the knowledge of a certain subject, but should have an interdisciplinary way of thinking.

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