

On the Transformation of the Management of Normal University Students on the Basis of Big Data

Theory

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Abstract: The merits of this transformed management of normal university students on the basis of the big data theory lie in 1) the promotion of data awareness of the managerial personnel, 2) the reform of research paradigm, and 3) the improvement of service modes of management work. This can be realized via advancing from sample-based to holistic thinking, switching from precise to mixed thinking, extending from causal to integrated thinking, and transferring from static to dynamic thinking.

1.Introduction

As an integral component of higher education in China, teacher education is the “mother tool” because the management of these teacher students is not only connected to their career development but also to the quality of education for the whole country in the future, which, therefore, plays a vital role in the strategic realization for China to change from a country with huge population to one with powerful human resources. In such a circumstance, it is of great significance for the management to overcome their inefficiency in problem solving by integrating their work with the big data theory.

2.The essence of the management transformation in the scenario of big data

2.1Management based on the big data

Under the controversial discussions about this theory going on among all walks of life who have been expressing enormous enthusiasm for the new resources, the academic world has not achieved any agreement yet about the definition. The world-famous McCarthy Research Center defines big data as “a data set that cannot be obtained, managed or analyzed with the traditional software within a certain period of time.”(Li & Gong, 2015). Cheng

Xuqi (2015) believes that “ big data is the bond that joins the physical world, information space and human society together. The physical world produces the mass data in the information space via the internet and things while the human society maps that data in information space by such means as human-computer interface, brain-computer interface, etc.” The US National Institute of Standards and Technology thinks that big data means that the capacity, the speed to obtain and the representation of data will surpass the processing and analytical capability of traditional methodology of interaction. Therefore, the horizontal extension mechanism must be used to improve information processing efficiency. Though different indefinitions, there is some agreement reached that understanding the essence of big data involves multiple dimensions.

First of all, the big data is morphologically a data set that integrates the massive capacity with petabyte as the start unit, a strong linkage heterogeneity (including huge amount of such non-structural data as journal files, videos, pictures and locations, etc.), a lower value density (in comparison with the traditional database, the valuable information is sparsely concealed in the data mass and can only be retrieved by deeply delving all the data), and a much faster processing speed.

Next, the capacity of information in the mass data is technologically so huge with much non-structural information that the conventional tools are incapable of doing the classification and analysis, which much restrains the value potential of the data and objectively demands new processing techniques. With data as the core of the system, the analysis will be more critical. On this basis, the big data can be understood as a composite system for management reference in decision making with data delving technique of the set index correlation.

Finally, the big data is historically indicating that human civilization has entered an information era in which the data has been skyrocketing and everything can be quantified. In this new era, words, locations, interpersonal relations, even the individual emotion can be all transformed into a quantified form to be analyzed, as a result, digital subsistence has become indispensably an essential form of human life.

2.2 The data of normal-university-student management in the big data era

In the big data era, data analysis will be the basic form of thinking and the way to solve problems, therefore, applying big data theory involves not only technological improvement, value excavation, morphological clarity, criterion setting, but also establishment of the thinking modes based on big data. Now that everything can be quantified, people can examine things around with a digital perspective, and break through the deeply-rooted traditional thinking modes with the correlation among numbers. By nature, thinking based on big data is

dynamic, holistic and complex.

The transformation of normal-university-student management means inserting the big data theory and the related achievements into the dynamic designing of the management forms and correspondingly into updating the ways, concepts and modes of the work. The key points may cover: 1) the data of management with the sources, types and variance of the students as the focus, 2) the analytical technique focusing on the collection, storage and analysis of the mass data, and on the construction of a scientific statistic system, and 3) the application of the data focusing on the management modes. All in all, the priority of this creative work is to match the modes of management with the features of the big data to provide reference for management according to the problems revealed in the work.

3. The value of transformed management of normal university students in the big data era

3.1 Increasing data awareness for the managerial personnel

Influenced by tradition, the managerial personnel tend to focus on the management of tangible resources: manpower, finances and materials while underestimating the data produced by normal university students in their everyday life. In brief, they have neglected the emphasis on the conscious perception of the data value. Today, data has become an important basis for management, that is, the management does not involve much face-to-face contact with students while dealing with the data. Then the mass data will be the channel through which the management can be implemented and create immense profit. Therefore, it is only by inserting data-based thinking into the everyday management that the personnel can consciously pay attention to the collection, storage and analysis of the data in their practical work.

3.2 Paradigm transformation of normal-university-student management

The application of big data theory requires the management to think in the logic of data and let the data speak for itself. The normal university students are an important component of the original inhabitants on internet, most of whom stay online via computers and smart phones, so the data produced on these devices can be an important source of the mass data about these students. But previously, what the personnel lacked is not the data for collection and analysis but the awareness of collecting and analyzing it, which can be seen in their work where emphasis was often laid on the qualitative other than quantitative study (Xu, 2012), resulting in their inefficiency of the practical work. In nature, the management should be the refined work based on facts where data is the core (Xu, 2012). Therefore, it is vital to introduce big data theory into the management, which can

help them with decision making. Once data analysis has become a basic business requirement for the personnel, they can construct a practical and creative management system in every aspect of the students' life. In summary, this transformation of thinking can help the management paradigm to break through the tradition where generalization and judgement are overemphasized while data analysis is underemphasized.

4. The approaches to the management transformation

Big data theory is an integral of techniques, data and thinking, of which the key is the thinking in the logic of data. In the past, the management did not have scientific methods to observe the students and do the related researches, instead, the management was usually based on the qualitative description, sample investigation and hypothesis verification. But using the big data theory involves multiple methods to achieve the transformation into creative thinking to improve the management.

4.1 Promoting the progress from sampled to holistic thinking

Nowadays, students have been creating vast numbers of digital chains by leaving traces of their activities in the virtual world, i. e., their daily online surfing, enquires, entertainment, socializing, shopping, distance learning and their forum statements, all these data can disclose enough about the students' physical and psychological status. Therefore, the management should collect the unabridged data of the students concerning their life habits, academic work and social interactions because the adequacy of data determines the validity of the analysis, the more abundant the data, the better to reveal the problems at micro-levels concerning all these sections of management. Therefore, with advanced analytical techniques accessible, the random sampling must be replaced with the mode of all data and transfer to the holistic thinking.

4.2 Switching from precise to mixed thinking

Today, it has become a light spot to allow what is imprecise (Zhou, trans. 2012). With the amount of data expanding and error rate increasing, the data format may not be in full accord in integrating the multi-faceted data concerning a student. But the big data system can give an all-sided description of the student and verify the inherent redundancy and conflicts to reduce distortions in analysis, in other words, the mass data can effectively reduce the influence of data errors and the chaotic data formats in analysis, which may provide extraordinary value for the management. Besides, it does not pay to strictly filter the data before processing. In this circumstance, rather than trying to avoid the possible imprecision of big data, we may find it more beneficial to allow errors mixed in the data. In metaphor, accepting these imperfect data is enjoying the impressionistic

painting style, every paint stroke seems to be in disorder at a near sight, but standing at a distance, you will find a fantastic piece of art! Therefore, without tolerance of the mixed data, we may be unable to observe or understand the subject from many perspectives.

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