

Adopt Big Data Thinking to Innovate College Counselors' Work

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Abstract

The big data thinking is an original thinking model resulting from the collection of a sea of data and the revolution on the data processing mode. It mainly has four compositions, i.e. integrate thinking, fault-tolerant thinking, correlative thinking and intelligent thinking. The application of the big data thinking facilitates college counselors to transform their instruction approach, innovate their working procedure, and improve their working initiative. In the era of the big data, college counselors are required to be competent in adopting the integrate thinking to construct an all-round wide-ranging great counseling pattern, the correlative thinking to understand the status and trend of college students' thought, the system thinking to support their work with complete information, and the intelligent thinking to predict and evaluate the demand and trend of their work.

Keywords

The big data thinking; College counselors' work; Correlation; Application and innovation.

1. Introduction

Big data (i.e. mega data) refer to a large data set that represents diversity, multi-source and effectiveness. [1] The accumulation, storage and application of big data mark a new era, when human activities are transcribed into diverse data information. When it comes to college students, the big data carried by smartphones and other mobile Internet devices can reveal their thoughts, scholarships, habits, psychology and personalities. Therefore, it is worth college counselors' reflection on how to innovate at work by applying the big data thinking to adapt to the condition of the big data era.

2. The Definition, Composition and Application of the Big Data Thinking

2.1. The Definition of the Big Data Thinking

The big data thinking has not been exactly defined by any theory or scholar. The concept remains informal and unclear at present. By integrating the basic view of cognitology, information theory and researches on the big data, the author defines the big data thinking as a complex mental process of comparing the enthetic big data from multiple sources with the intrinsic experience in mind. It relies on a large database and upgrades the way to collect, store and process data with technologies, i.e. IoT, cloud computing and machine learning. It is also a process to describe, predict and test the activities of objects and humans, where the relationship and development law between objects, humans or both are discovered. It is a complement and further development of logical thinking (abstract thinking), imaginal thinking (concrete thinking) and insightful thinking (inspirational thinking).

2.2. The Compositions of the Big Data Thinking

The big data thinking relies on a large database and breaks through its form. According to the current research results, it mainly includes integrate thinking, fault-tolerant thinking, correlative thinking and intelligent thinking. [2]

2.2.1. Integrate Thinking

Integrate thinking is a general thinking model. In the era of the big data, the application of advanced technologies, i.e. IoT, cloud computing and machine learning, makes it possible to collect and store the integrate data of any object. It requires people to abandon the traditional cognitive approach that depends solely on random selection to process data. The collection and storage of the integrate data, however, can reveal some detailed information that is covered by the random selection, so that people can understand the overall situation of an object generally, perspectively and systematically.

2.2.2. Fault-tolerant Thinking

Fault-tolerant thinking is an inaccurate thinking model. In the era of the small data, when the information content of the collected data was little, structuring and accuracy were emphasized in particular. But in many cases, too much emphasis on data accuracy can lead to a conclusion against the facts, as the data can be abnormal, incomplete, inaccurate or even improper. In the era of the big data, however, a large amount of unstructured and isomerized data are stored and analyzed scientifically, which greatly enhance people's ability to acquire and capture relevant knowledge from a sea of data. Therefore, sheering off from accurate to inaccurate thinking and tolerating certain faults and mixtures of real-time data on the micro-level allows people to possess more knowledge and sharper insights to the facts on the macro-level.

2.2.3. Correlative Thinking

In the era of the small data, people always focus on the cause and effect behind a phenomenon, which is not stable in reality. Actually, the small data can barely reveal the ubiquitous correlation between objects. And any attempt to discover the principle among objects by limited samples is bound to fail. In the era of the big data, people can explore and analyze the covert correlation among objects with technologies such as big data and cloud computing to acquire more knowledge and deeper insights, so as to seize the day and predict the future more effectively. Therefore, people should first focus on the correlation among objects then study the cause and effect behind them, which helps people discover the covert principle among objects and reduce the cost of making analysis on the cause and effect.

2.2.4. Intelligent Thinking

In the era of the big data, the development and application of advanced technologies, i.e. IoT, cloud computing, in-depth learning and visual techniques, facilitate people to automatically search for and delete relevant data information with the big data system. They also enable the system to analyze data initiatively, perspectively and logically, as well as make judgment in time and provide insights like a human brain. That vivifies the big data by endowing it with the capability of integrate thinking and making prediction like humans. To adjust to the trend, people are required to sheer off from the model of natural thinking to integrate thinking.

2.3. The Application of the Big Data Thinking

There are generally three progressive application scenarios of the big data, i.e. quantitative description, correlation prediction and experimental verification. [3]

2.3.1. Apply the Quantitative Description of the Big Data Thinking

Apply the quantitative description of the big data thinking can make everything predictable. The big data thinking involves plenty of structural and non-structural data, which can be transformed to objective standard and quantitatively described to help people scientifically predict the activities of objects and humans. For instance, in the field of marketing, objective standards such as the sales volume and sales price can be accumulated into the big data. Even some subjective standards such as customers' emotion (e.g. the perception of colors and space) can be predicted, as the big data involve every aspect of their consuming behaviors.

2.3.2. Apply the Correlation Prediction of the Big Data Thinking

Apply the correlation prediction of the big data thinking can make everything connectable. Studying the correlation among objects with the technology of the big data and building an in-depth prediction model based on relevant data can help predict people's preferences and behaviors by connecting objects that seem irrelevant. For instance, in the field of modern logistics, customers' purchase intentions can be predicted by their purchasing habits, browse paths and commodity evaluations. According to the predictions, some goods are stored in separate silos, which can be delivered the first time to improve customers' satisfaction.

2.3.3. Apply the Experimental Verification of the Big Data Thinking

Apply the experimental verification of the big data thinking can make everything verifiable. The results of the scientific prediction and analysis on the big data can be appropriated to do relevant experiments and propose corresponding solutions.

From quantitative description to correlation prediction, then to experimental verification, the advancement of the three progressive application scenarios forms a relatively complete procedure of the big data thinking.

3. The Correlation Between the Big Data Thinking and College Counselors' Work

3.1.1. Transform College Counselors' Instruction Approach with the Big Data Thinking

To be fitted for their position, college counselors should conscientiously strengthen their leading role in guiding college students' thoughts, study, psychology and life and advance their instruction approach with the times. For instance, they should analyze the importance of the problems that they are confronted with from an overall perspective, effectively coordinate the relationships within colleges among professors, logistical crew and students, conscientiously incorporate the strengths from colleges, families and the society, promote the combination of teaching activities with college students' self-education as well as the coordination of explicit education and implicit education, etc. In a word, that is to integrate the positive impacts from all aspects in an overall and scientific approach, to fuse them as a whole by reflecting on their correlation and offsetting one's weakness by the others' strong points, to build a network of vertical crossing "great moral education", and to give full play to the vertical and focusing education. With the big data integrate thinking, college counselors can observe the data comprehensively, analyze college students' thoughts, interests, intellections and behaviors accurately, so that their thinking model can be transformed from empirical thinking to scientific thinking. That facilitates them to better implement the ideological and political education on college students as well as control the elements and links in the daily administration to comprehensively plan, prepare and implement various guidelines on college students' thoughts, study, psychology and life, promote innovation to college counselors' instruction approach, and prevent any misconduct at work caused by partial dependence on experience or a lack of experience.

3.1.2. Innovate College Counselors' Working Procedure with the Big Data Thinking

On the condition of the new era, college counselors are required to get rid of the traditional education pattern that solely relies on preach and infusion. Instead, they are expected to get familiar with new media and platforms such as smartphones and the Internet. They should understand not only what college students are thinking and what resources that colleges can provide for their students, but also how to deliver the resources to college students, so as to improve the pertinence and effectiveness of ideological and political education as well as foster college students' character and civic virtue. As for the daily administration on college students, to streamline the daily administration, behavioral regulation and moral restraint on college

students, college counselors should start from addressing the fundamental issues to strengthen college students' psychological quality and to improve their comprehensive qualities of complying with passive and active management through complementary practical activities. With the big data correlative thinking, college counselors can search, compare, classify and make cluster analysis on a sea of data in a statistical method, observe the data changes to discover the intrinsic connection among objects, and study the principle for change of the variants that seems not closely correlated. It provides a brand new model to discover the correlation among the variant tasks of college counselors, which is beneficial for them to establish multi-dimensional perspectives, expand the breadth of their thoughts, and break the limit on their thought. Besides, it provides effective means to implement the ideological education on college students, understand the intrinsic relationship between daily administration and other work, and prosper the innovation on college counselors' working procedure.

3.1.3. Improve College Counselors' Working Initiative with the Big Data Thinking

In the past, the data related to collage students were usually collected by way of random selection, and the time span of the analysis on the data collected during a specified period was particularly long. Those data, however, should have been obsoleted the moment they were put straight, which impacted or even restricted college counselors to exert their initiative. With the wide application of advanced technology and the implementation of reformation on higher education, the thoughts, psychology and behaviors of college students witness profound changes. Understanding the big data thinking and its three basic application scenarios can help make prospective analysis as well as advanced research and prediction effectively. On the basis of objective description and scientific prediction, the fundamental working strategy of college counselors can be made, the solutions to present problems can be proposed, and the initiative and effectiveness of college counselors' work can be improved.

4. Adopt Big Data Thinking to Innovate College Counselors' Work

4.1.1. Adopt the Big Data Integrate Thinking to Construct an All-round Wide-ranging Great Counseling Pattern

Supported by the integrity of the big data, college counselors are supposed to improve the top-level policy design, correlate the elements and links of their work, and take everything into consideration, by which they can minimize the internal friction and cost as well as greatly improve the efficiency and benefit of the college counselors' work. They should be competent in solving the problems between themselves and other college parties such as professors, logistical crew and administrative staff by promoting the communication with them, avoiding repeated data collection, achieving effective sharing and eradicating fragmentation, where college counselors perform the duty of contact. By expanding the applied range of the big data, college counselors can break the boarder between colleges, families and the society and incorporate the three parties effectively, so that the information can be shared smoothly and an all-round wide-ranging great counseling pattern can be set up.

4.1.2. Adopt the Big Data Correlative Thinking to Understand the Status and Trend of College Students' Thought

At present, college counselors are confronted with many new situations and problems. They are bound to be trapped in a passive position and vicious circle if they solely depend on the cause and effect thinking. Instead, they are supposed to apply the big data correlative thinking by analyzing and studying the correlation and development trend of the objective factors based on the data variation. That helps college counselors to explore the correlation between college students' changes of thoughts and other variations such as the national socio-economic development, the reformation on higher education and the influence of social ideological trend.

In this way, they can understand the status and trend of college students' thought, educate and guide them pertinently, and ensure the stability and unified management of their thought.

4.1.3. Adopt the Big Data System Thinking to Support College Counselors' Work with Complete Information

College counselors should accurately grasp the dynamic characteristic of the big data, adopt dynamic and systematic thinking, complete the construction of data collection system that assists their work, and guarantee to collect the latest data that reflect the dynamic condition of the society, colleges and students' thought in time. By constructing a vertical crossing data transmission system, college counselors can ensure the collected data to be passed on to various management levels and units in colleges. They should also complete the construction of the data processing system, process the collected data in time with advanced data processing technology, and transform them to all kinds of effective information resources that are necessary and available to themselves to support their work with complete information.

4.1.4. Adopt the Big Data Intelligent Thinking to Predict and Evaluate the Demand and Trend of College Counselors' Work

As is a distinct characteristics of the big data, all effective data are available at anytime, to which none of the users possess any priority. The openness offers powerful support to intelligent thinking. Based on the requirements of comprehensive construction and sustainable development of colleges, college counselors should analyze and study a sea of data about college students' thought and social issues by making the best of the open big data, then they can predict and evaluate the demand and trend of their work, promote the innovation on the principles, operations, guidelines and methods of their work, and further improve the level of its informatization, legalization and scientization.

References

- [1] Viktor M S, Kenneth C.: Big Data: A Revolution that will Transform How We Live, Work and Think (Zhejiang People's Publishing House, China 2013), p. 1.
- [2] Information on <https://wenku.baidu.com>
- [3] Information on <http://www.cdadata.com>