

Knowledge Pedigree Construction of Journalism and Communication Education in the Context of Internet of Things

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Abstract: The knowledge ecology regards knowledge management as a system that dynamically interacts with the environment. With the advent of the era of Internet of Things, knowledge shows a tendency of loose coupling and distributed collaboration, and learners in the information wave also have the need of cognitive closure and structured learning. The reconstruction of knowledge pedigree is conducive to improve the nomadic knowledge production of journalism and communication education. It is necessary to make the reconstruction of its knowledge pedigree from imagination to reality through strengthening consolidation, collaboration and circulation.

1. Introduction

Ecosystem interacts between various organisms and between biological communities and the environment through energy flow and material circulation. It is a dynamic, open and interdependent complex adaptive system. [1] Pan-media integration embedded in the interconnected thinking of all things has greatly increased the scale and magnitude of information flow. Although there are constant worries about “information inflation”, “information explosion” and “transmission fission”, it has become an inevitable trend for human knowledge to change from “atomic typing” to “bit transmission”. The network of knowledge form and dissemination, visualization of knowledge presentation and representation, knowledge acquisition and internalization all mean that human cognitive ecology is changing in all directions. In this context, the reconstruction of knowledge pedigree is urgent. This paper attempts to answer the following questions from the perspective of knowledge ecology: What impact does the era context of Internet of Things have on knowledge pedigree? What is the nature and process of knowledge pedigree reconstruction? How to use the reconstruction of knowledge pedigree to optimize journalism and communication education to adapt to the rapid and irregular changes in the interconnected environment of all things?

2. Internet of Things and Knowledge Management: Nomadic Knowledge Production Logic Needs to be Changed Urgently

2.1 Loose Coupling and Distributed Collaboration: Knowledge Development Trend in the Age of Internet of Things

Internet of Things (IoT) refers to extending Internet connections beyond standard devices (such as desktop computers, notebook computers, smartphones and Tablet computers), that is, to any physical devices and everyday objects that do not support the Internet in the traditional sense. These devices can communicate and interact with each other through the Internet with embedded technology and can connect, collect and exchange data, and can be monitored remotely. Due to the continuous integration of various emerging technologies such as real-time analysis, radio frequency identification, machine learning, wireless sensors, and embedded systems, the definition of Internet of Things is still developing.

The Internet of Things greatly benefits knowledge management, but it also brings new difficulties. Scholar Karl E. Weick put forward the concept of “loose coupling” to nomadic education.[2] He

believed that the knowledge level of discipline construction is difficult to cope with gradual changes, academic production efficiency is sacrificed, thin educational resources are consumed, and discipline culture is also facing dispersion. Due to the limitation of the information recording and processing capacity, in the former era of network communication, people could only connect isolated “knowledge points” simply and roughly to form a tree-like “knowledge system”.

2.2 Cognitive Closure Needs and Structured Learning: Human Learning Cognitive Trend in the Information Wave

Individual’s sense of information uncertainty continues to increase in the pan-media era. The need for cognitive closure, as an element of cognitive motivation that dynamic situations play a role in fuzzy decision-making, helps us to understand an individual’s learning psychology and behavior. Psychologist Arie W. Kruglanski believes that cognitive closure needs to be the expectation motive that individuals show when dealing with fuzziness, and it is the individual’s “expectation to find a clear answer to the question, no matter what the answer is, because any clear answer is better than chaos and ambiguity”[3]. Psychologist Stanley Budner believes that “due to the lack of sufficient clues, individuals cannot classify or structure a vague situation”[4], in other words, individuals can grasp the main features in a clear situation and give answers or explanations.

Learning and education are processes that generate meaning interconnection in the category of knowledge. Book knowledge is stored in a structured form and has a strong logical connection. Teaching activities in a gradual and orderly way are often carried out from these structured starting points. In the Internet of Things era, fragmented knowledge storage is relatively discrete, with platforms, databases and mobile terminals everywhere, resulting in open point knowledge that needs to be bridged and embedded into the system. Individuals with high demand for cognitive closure prefer certainty to fuzziness. People need clear answers to help them construct a structured, orderly, clear and predicTable social existence, which requires more attention to the reconstruction of knowledge pedigree and changes of nomadic knowledge production logic.

3 Reconstruction of Knowledge Pedigree: Promoting Progressive Value Added of Journalism and Communication Knowledge

3.1 The Essence and Process of Knowledge Pedigree Construction: Creative Reorganization and Grafting of Knowledge

Knowledge pedigree is a system that takes the knowledge domain as an object and displays the context of knowledge development and its structural relationship. It takes attribute-value pairs within the knowledge and the connection and boundary between knowledge as an examination to form a netlike knowledge base linked by relationships. Knowledge genealogy constructs a knowledge system according to the kinship within the knowledge margin and the knowledge interaction across the margin, thus making knowledge units of different levels embedded in the vertical, horizontal, cross and even network relationships, forming various knowledge maps with mutual reduction stability and changeable choices.

Grafting refers to transplanting the bud or branch of one plant onto the root or stem of another plant to make the two parts of the combined culture grow into a complete plant. The development of knowledge pedigree is also a process of “knowledge grafting”. Some scholars put forward the idea of “zero storage and integration” on the construction of knowledge genealogy, that is, to accumulate knowledge fragments continuously, integrate and adjust knowledge itself through continuous fusion and rewriting, and connect with the original knowledge system of learners, thus transforming the zero into the whole and creatively reorganizing the fragmented knowledge.[5]

3.2 Reconstruction of Knowledge Pedigree and Journalism Communication Education: From Changes in Roles and Ideas to Changes in Knowledge System

Judging from the change of roles, in the environment of media integration, the audience in the traditional sense has also begun to have more and more rights to spread. The impact of the so-called

“citizen journalism” makes it more and more difficult for the media to meet people’s information needs and understand the objective facts. Both journalists and editors are facing the change of role orientation.

Judging from the change of concept, the credibility is always the root of the media’s survival. The requirement of the interconnected context of all things for the credibility of the media is not only to be responsible for and endorse the content of the report but also to use the credibility to connect the readers, the audience and the whole society. The function of media has changed from emphasizing “social radar” to emphasizing “social contact”. The corresponding knowledge should be more compatible and inclusive.

4. Expectation for Reconstruction of Knowledge Pedigree of Journalism and Communication Education: From the Expected to the Actual

4.1 Consolidation: From Fragments to Systems, From Inorganic to Interactive

Integration from sequential development refers to the adoption of standard specifications and codes by each subsystem and knowledge node within knowledge to realize information sharing of the whole pedigree, thus realizing orderly interaction between learning and knowledge development. It is embodied in two aspects, one is integration from fragments to systems, and the other is integration from inorganic to interactive.

The first is the debris integration system. Fragmented knowledge is discrete pieces of knowledge information that lack an integral structure. They are separated as tiny knowledge points and scattered in various corners of the Internet of Things in a non-linear form without fixed logic. If there is a lack of the process of secondary reconstruction of knowledge, it is easy to make it difficult for learners to deeply analyze things and look at problems in an isolated and one-sided way.

The second is inorganic integration interaction. The opening of knowledge is embodied in the stage of merging and grouping knowledge. Interactive behavior is an important way to realize knowledge reconstruction. As a knowledge individual, the human being is the main component of the knowledge ecosystem in colleges and universities. According to their different functions, they can be divided into knowledge producers, knowledge transferors, knowledge consumers, and knowledge decomposers. Although the roles are clear, parasitism, coexistence and mutual transformation occur from time to time. Therefore, the chain of knowledge pedigree circulation is not one-way, but an interactive network.

4.2 Collaboration: Resource Coordination and Mode Combination

The knowledge pedigree inclines to regions with high added value. In the long run, the places where resources are concentrated form a cumulative advantage: the more knowledge resources are collected, the more vigorous the level of production and consumption of material and spiritual resources will be. The more demand and consumption of knowledge resources will be, the more knowledge resources will continue to be absorbed. Some journalism departments optimize their teaching content according to their own discipline characteristics.

At present, the network has become a link to social relations. Many journalism and communication departments have made fruitful attempts in terms of specialty setting, curriculum reform, faculty restructuring, and practical teaching. Here, we might as well mention the combination of educational modes of school-enterprise cooperation. From the perspective of game theory, school-enterprise cooperation embodies the cooperative relationship of “complementary competition” of knowledge. The premise of a cooperative game is to find out the “maximum common divisor” between school-enterprise production and learning operation modes and realize the integration and realization of “1+1 > 2” knowledge interests.

4.3 Circulation: Double Renewal of Context and Cognition

The fluidity of knowledge pedigree reconstruction of journalism and communication education is reflected in its dynamic process all the time. Knowledge practice always develops from shallow to

deep, from simple to complex, from low to high. Knowledge based on practice must be dynamic, and the reconstructed context and cognition are constantly updated.

The context is constantly updated. The media has undergone digital changes, and the concept of reporting, production process and even the value of news have undergone corresponding changes. The reconstruction of knowledge pedigree in this process requires humanism and ideal feelings, and should not lack an open and diversified vision and the pursuit of innovation. Specifically, on the one hand, to make the best use of the situation depends on adjusting the deviation of ideas. On the other hand, it lies in the use of new media, that is, the use of different skills and means to deal with massive information, to cope with high-intensity interaction and competition, and to get used to the asynchronous transmission process.

The cognition should be continuously updated. Today's journalism and communication is no longer the practice of nihilism and relativism, nor is it confined to a miniature version of the media landscape, nor can it be held back by some isolated disciplines. It is the result of a mixture and clash of internal and external multiple stimulus factors. With the re-development of science and technology, new learning methods of human-computer interaction, such as MOOC, edX, Khan Academy and Coursera, deepen the virtuality of communication between the transmitting and receiving parties and lead the reconstruction and sharing of knowledge pedigree.

5. Conclusion

The culture constructed by the Internet of Things is the background of the journalism and communication education reform. Its existence transcends the technology itself and extends into a renewal culture driven by demands, a creative culture by means of attempts, and an interactive culture based on feedback. This culture reflects the interconnected thinking concept and lifestyle. From the perspective of reconstruction of knowledge pedigree, we have the responsibility to go beyond our own limited circle of knowledge circulation and contact with more fields, so that a wider range of knowledge can be integrated to avoid a general understanding of things and to understand various complicated problems with cumulative and progressive thinking.

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