Cultivating Data Literacy for News Editors in the Big Data Era: A Postprint

Authors: Yin Congcong

Date: 2023-10-08T00:00:00+00:00

Abstract

The development and application of big data technology, along with its deep integration with related technologies, continuously drives innovation and development across various industries from a holistic perspective, propelling human society from the information age towards the big data era. Against the backdrop of the all-media era, news editing work has become inextricably linked with big data applications, traditional news editing operational models have undergone profound transformations, and the new media editing conceptual system continues to evolve and innovate, placing higher demands on the cultivation of data literacy among news editors. Based on an analysis of relevant concepts and the fundamental components of data literacy for news editors, this paper explores the influencing factors behind data literacy deficiencies and proposes corresponding cultivation pathways in light of practical realities, aiming to provide references for relevant practitioners and contribute to the sustainable development of China' s news editing industry.

Full Text

Exploring the Cultivation of Data Literacy for News Editors in the Context of Big Data

Yin Congcong
Feixian Converged Media Center (Feixian Radio and Television Station), Linyi, Shandong 276000

Abstract: The development and application of big data technology, along with its deep integration with related technologies, continuously drives innovation across various industries and propels human society from the information age toward the big data era. In the context of the all-media era, news editing work has become inseparable from big data applications, leading to profound transformations in traditional news editing operation models. Meanwhile, the new

media editing conceptual system continues to evolve, imposing higher demands on the cultivation of data literacy among news editors. This paper analyzes relevant concepts and the basic components of news editors' data literacy, explores the influencing factors behind data literacy deficiencies, and proposes corresponding cultivation paths based on practical considerations, aiming to provide references for practitioners and contribute to the sustainable development of China' s news editing industry.

Keywords: News Editors; Data Literacy; Big Data; All-Media
CLC Number: G633
Document Code: A
Article ID: 1671-0134(2022)05-086-03
DOI: 10.19483/j.cnki.11-4653/n.2022.05.025

In the context of the big data era, the transformation and persistence of news editing have become practical issues that practitioners must face. However, regardless of the direction of development, both rely on the basic application of data and the cultivation of fundamental data literacy. Good data literacy can enable news reporting to have visualization and deep-level characteristics, better enhance audience attention and stickiness, effectively improve the core competitiveness of news media, and play a positive role in promoting media innovation and development.

The characteristics of data literacy are mainly manifested in four aspects. First, it possesses timeliness, as its concept and basic requirements have emerged alongside the continuous development of big data technology, representing an inevitable demand driven by the times. Second, it is foundational, serving as the important basis for implementing big data technology applications and fully demonstrating core competitiveness. Third, it is dynamic, capable of continuous improvement through targeted training while actively promoting career development. Fourth, it is systematic, referring not to a single capability but to a structural system embodied by individuals and teams as a whole.

1. Conceptual Analysis

1.1 Big Data Technology and Its Impact on News Media

From a media perspective, big data technology can be understood as a component of the technological cluster required in the development of digital and analog media. Conversely, however, the application of big data technology has fundamentally transformed traditional media operation models, necessitating innovative responses from news media to adapt to the new situation. First, in terms of news creation and presentation forms, greater emphasis is placed on the application of massive data rather than random cases. News reporting focuses more on objective value levels and adopts interactive modes to display news content, providing readers with diverse news while enabling them to become contributors to news editing through data sharing. Second, the application of big data technology makes news editing content processing focus more on the

correlation between elements rather than causal relationships, and enables the mining of new news content through readers' reading feature data. Third, news editing forms emphasize the application of visual charts and videos rather than simple text descriptions, driving news editing forms toward diversification [1]. Finally, the enhancement of core competitiveness for news editors focuses more on the application of data technology rather than solely on writing skills, making the improvement of data literacy an essential quality that practitioners must optimize.

2. Basic Components of News Editors' Data Literacy

2.1 Data Management and Decision-Making

In the news editors' data literacy system, data management and decision-making constitute the most fundamental components. Due to the massive nature of big data itself, news editors face diverse data that exceeds practical application requirements in their daily work, with each data level having significantly different weights in the editing process. Only under the condition of comprehensive data management can they properly preserve and apply the vast and complex media data information in specific workflows [2]. Data decision-making represents the basic literacy that news editors should possess during the news planning stage, enabling them to utilize existing data content, explore data operation patterns through correlation analysis, and identify the most important and potentially valuable topics with heightened news sensitivity and data awareness to meet the requirements of news editing work.

2.2 Data Acquisition and Interpretation

After topic selection, it is necessary to further acquire relevant data to ensure the timeliness of news editing content. In the context of highly developed online news, news content timeliness can only be maintained for 2-3 days or even shorter. Relying solely on existing data would inevitably further weaken timeliness. Utilizing big data technology to obtain the latest related information is a basic capability that news editors should possess. Data interpretation is the basic process of transforming abstract, solidified data content into valuable, dynamic news content, and is essential for realizing data value and significance. In the big data era, data processing technology levels continue to improve, and data processing forms become more diversified. Different interpretation levels have a direct impact on audience acceptance. Therefore, to ensure full embodiment of data value, news editors must interpret and report data in accessible language, enabling audiences to quickly, accurately, deeply, and comprehensively understand the information conveyed by data and interact with communication media.

In Chinese linguistic style, "suyang" (素养) refers to daily cultivation, while in professional systems, it refers to a habit, preparation, a state of readiness, or a tendency toward specific behavioral patterns. Literacy is objectively ex-

isting, not spontaneous, but gradually formed through continuous cultivation. Research on the concept of data literacy within the big data category in China' s theoretical level began around 2011. Currently, in various industries related to big data, a relatively comprehensive understanding of data literacy has been formed, and the importance of data literacy cultivation continues to increase.

2.3 Data Processing and Communication

Data processing can be considered the core component of news editors' data literacy. How to effectively extract, analyze, reconstruct, transform, and derive valuable data for target audiences from large, complex, and abstract datasets is a basic requirement for news editing work. Through high-level data processing, not only can the quality of news editing work be effectively improved, but the public opinion guidance function of news can also be fully demonstrated, realizing the social value that news content should have [3]. Data communication refers to how news editors can optimize data transmission and enhance data sharing levels in the new media era, which is a fundamental path for effectively improving news value. In the big data era, news media subject types have become more diversified, with each media outlet developing distinctive audience groups. Maintaining and expanding these audience groups is also a basic capability that news editors should possess.

2.4 Data Ethics

Although data ethics does not belong to the big data application technology system itself, it has an extremely important impact on news editors' personal qualities. In short, data ethics refers to the social moral norms and behavioral standards that should be followed when news editors utilize big data technology for news gathering and editing. While big data technology has fundamentally transformed the news editing operation system, it has also brought about issues such as privacy infringement, false data, and erroneous data. These problems not only violate the basic ethical requirements that news work should follow but may even lead to illegal events. Therefore, in the process of applying big data technology, news editors must incorporate data ethics into their personal quality system to become truly responsible journalists.

3. Influencing Factors of Data Literacy Deficiency

3.1 Lack of Public Pathways for Big Data Collection

The foundation of big data technology application is the ability to access massive public data resources and process them through effective technical means. In the nearly ten years since the comprehensive promotion and application of big data technology, governments and society have continuously increased investment in big data, with some local governments even taking big data platform construction as a basic support for local economic transformation and grassroots governance system improvement, effectively promoting the rapid development

of the big data industry [4]. However, since big data technology application itself is still in the exploratory stage of operational development, and the rights and authorities between various administrative entities cannot be balanced, the absence of legal and regulatory systems has made it impossible for news editors to fully obtain required data content through public channels, thereby negatively impacting the improvement of data acquisition and management literacy.

3.2 Academic Background Bias of News Editors

In traditional news editing teams, most editors have academic backgrounds in journalism, communication, and Chinese language and literature. Their computer and network knowledge is limited to basic applications, with obvious deficiencies in fundamental data-level cognition, making it impossible to achieve data mining, processing, and application. Although some media outlets operate in teams to better apply big data technology, which can meet basic data application requirements, there remains a gap with the thinking requirements of data application, with practical problems such as data insensitivity and incomplete logical thinking.

3.3 Insufficient Training Systems

Affected by the professional backgrounds of news editors, diversified approaches must be adopted to provide targeted training for news editors to continuously improve data literacy levels. However, constrained by the work characteristics of news editing positions, media platforms usually cannot provide systematic and comprehensive training for editors. In university teaching of related majors, the education system for big data technology application is still relatively incomplete and requires students to have good computer and mathematics foundations [5]. Social-level training institutions specifically targeting news editing positions are even more obviously lacking. Objective limitations force news editors to conduct fragmented autonomous learning through online channels, resulting in unsystematic learning processes and incomplete knowledge systems, making it difficult to achieve effective cultivation of data literacy.

3.4 Lack of Correct Understanding of Data Application

For news editors, data application is a key component of data literacy. However, due to the relatively short application period of big data in the news media industry and the fact that data technology itself is still in a rapid development stage, most news editors obviously lack big data thinking, simply equating big data technology application with data processing or data visualization, which limits the fundamental value of big data application. Additionally, some news editors exhibit obvious herd mentality when using big data technology for news content editing, with insufficient data questioning spirit, failing to trace secondary data sources or verify data accuracy, leading to distorted data processing and loss of rigor in news editing. The cultivation of news editors' data literacy also has long-term characteristics. Under the circumstances of tedious daily work,

most news editors are unwilling to actively learn data processing and application knowledge, which is also an important factor causing the lack of effectiveness in news literacy cultivation.

4. Paths for Cultivating News Editors' Data Literacy

4.1 Innovate News Editors' Big Data Application Concepts

Conceptual innovation is the forerunner of action. For news editors, to truly achieve comprehensive improvement in data literacy, they must start from the ideological level, construct their own big data thinking system, and innovate big data application concepts. On the one hand, they should actively learn basic theoretical knowledge related to big data to compensate for deficiencies in professional backgrounds and promote the optimization of their knowledge structure [6]. On the other hand, in daily editing work, they should strengthen emphasis on data information application, initially adopt some relatively simple processing technologies for operational practice, gradually cultivate application habits, and strengthen the cultivation of application thinking, laying a good foundation for news editors' data cultivation. In terms of thinking systems, they should specifically cultivate systematic thinking, visual thinking, and associative thinking.

4.2 Improve the Big Data Technology Application Environment

Improving the big data technology application environment is an urgent practical problem in the news editors' data literacy cultivation system and an important path for effectively improving news editors' knowledge structure. Solutions to this problem can be approached from the following levels: First, improve industry standards for big data application. Under the premise of following national laws and regulations, address the insufficient application of big data technology in the news media industry by clarifying literacy requirements, skill level requirements, and normative requirements for data application in the news gathering and editing process. Second, at the government level, guided by the concept of service-oriented government construction, improve data openness, build a complete open operation and application mechanism, eliminate the "information island" phenomenon from the technical level, and provide diversified data resources for big data technology application. Third, innovate forms of communication and sharing for big data application, enhance news editors' practical abilities in big data application, innovate news content value-added or regeneration methods, improve the effectiveness of big data technology application, and gradually cultivate news editors' big data thinking.

4.3 Construct Online-Offline Combined Training Models

Constructing online-offline combined training models is an inherent advantage of big data technology application itself. According to the work characteristics of news editing positions, optimize pre-job and in-job training work models

by adopting a training mechanism with clear requirements, optimized content, strengthened objectives, and autonomous learning. While doing well in offline training for news editors, provide more online training resources. Taking the Chinese University MOOC platform as an example, courses such as "Principles and Applications of Big Data Technology,""Python Big Data Analysis,""Big Data Thinking and Technology," "Media Big Data Mining and Case Studies," "Principles and Applications of Databases," and "Network and New Media Application Models" can be offered, imitating the campus credit management system. News editors can complete learning and assessment through the platform within required timeframes, truly promoting data literacy level improvement. In university education systems, basic big data courses should be offered for journalism, communication, and related social science majors to lay a good foundation for news editor cultivation.

4.4 Improve News Editors' Career Development Systems

According to Maslow's hierarchy of needs theory, as news editors' literacy continuously improves and work capabilities strengthen, they will inevitably generate new demands at personal and social value levels. Therefore, media platforms should also follow humanized management requirements, strengthen incentives for news editors, improve career development systems, and provide good growth space for news editors. In the career development process, the goal is not to make news editors become professional talents in data mining and analysis, but to grow into news editing talents with high-level data literacy through systematic big data thinking system construction, innovate China' s media industry development models, provide higher-quality news services for audience groups, undertake media' s due social responsibilities, promote social progress, and play a positive role in promoting the construction of a news industry with Chinese characteristics.

4.5 Uphold the Professional Essence of News Editing

Upholding the professional essence of news editing, with laws, professional ethics, and ethical principles as the basic bottom line, is the fundamental prerequisite for news editors working in the big data model. In the data collection process, they must resolutely avoid infringing on public privacy rights and news work copyrights to prevent unnecessary legal disputes or impacts on some social groups' personal lives. In the data decision-making and processing stages, they should pay attention to verifying data authenticity, resolutely avoid false data and erroneous data, and promptly correct and resolve problems when they occur to avoid misleading audience groups. In the data communication stage, they should inform audience groups of data limitations, clearly indicating that data processing may have varying degrees of deviation from reality to prevent audiences from drawing wrong conclusions based on data. In daily work, they should also fully recognize their own deficiencies in big data technology application, strengthen cooperation and communication with team members, improve

work mechanisms, and comprehensively enhance practical application capabilities.

4.6 Improve Data Literacy Incentive Mechanisms

The construction of data literacy incentive mechanisms needs to start from three basic levels. The first is the most basic salary and material rewards. For news editors with high-level application capabilities, increase overall incentive levels to guide news editors to strengthen emphasis on big data technology application, promote autonomous learning and innovative application levels. The second is the position incentive model. When promoting editors or opening new channels, prioritize news editors with higher data literacy, improve corresponding team management mechanisms, stimulate the work capabilities of news editing teams, and undertake greater work responsibilities. The third is the social value incentive system. Through industry promotion and participation in professional associations, fully reflect the social value of news editors, satisfy individuals'high-level psychological needs, and thus play a more obvious driving role in personal growth.

The future innovative development of the news editing industry will inevitably rely on the support of big data technology. For relevant editors, to adapt to the requirements of the times, they must adopt diversified learning and application models to comprehensively improve their own data literacy. Only in this way can they achieve personal growth while creating more excellent news works and making greater contributions to the development of the news media industry.

References: [1] Chai Hong. Research on the Path to Improve News Editors' Data Literacy in the Big Data Era [J]. Science and Technology Communication, 2020(17): 113-114.
[2] Wang Chunxia. Analysis of Strategies for Improving Editors' Professional Competence under the Background of Big Data [J]. Media Forum, 2020(11): 80+82.
[3] Wen Haiyan. Transformation and Persistence of News Editors in the Big Data Era [J]. China Newspaper Industry, 2018(15): 82-83.
[4] Tang Feng. Discussion on the Work Transformation of News Editors in the Big Data Era [J]. Media Forum, 2018(5): 52-53.
[5] Li Hui. Reflections on the Transformation of News Editing Concepts under the Background of Big Data [J]. West China Broadcasting TV, 2018(5): 119-120.
[6] Meng Di. On the Literacy of Data News Editors [J]. China Publishing, 2018(2): 34-37.

Author Bio:
Yin Congcong (1984-), female, from Linyi, Shandong, Editor, research direction: Journalism.

(Editor in charge: Zhang Xiaojing)