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Research Article

Innovation Model of Journalism Education Based on Information Technology under the Background of New Media

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In recent years, as a new way of information dissemination, new media has brought a huge impact on traditional media. New media is the most important and popular communication medium in the new century, and the communication mode promotes the transformation of the whole society. With the continuous updating of mobile devices and the continuous increase of various news dissemination channels, which accelerates the speed of information dissemination, it also puts forward a test for the quality and effectiveness of news broadcasting. With the continuous development of information technology, the reform of education informatization continues to advance. At present, journalism education research has become a hot topic in journalism research, and journalism professional education faces many challenges in the context of educational informatization. It needs to take corresponding measures to innovate teaching concepts and teaching methods, so as to meet the requirements of education reform for journalism. This paper studies the development trend of new media. It is based on the effective application of information technology means to teaching and scientific research and aims to promote the progress and development of journalism education. This paper studies the impact of different audio sample durations on retrieval accuracy and retrieval speed and finds that the corresponding recall rate when the query sample audio length is 5 seconds is 82.5%. When the time length is 10 seconds, the recall rate is relatively improved by 13.2%. This paper discusses the innovation of journalism education under the background of informatization. In this paper, through the investigation of journalism college students' analysis of the problems existing in the current education and the synthesis of their suggestions, it is more prominent that 90% of them believe that improving teaching methods is the most important. Senior students have more prominent opinions on the issue of practical teaching. Practical teaching has become an important part of higher education with Chinese characteristics. It is an important way to guide students to integrate theory with practice and cultivate students' comprehensive quality and innovative consciousness.

1. Introduction

Due to the popularization of electronic devices and the dissemination of digital information, the status of traditional media is not as good as before. Especially in today's rapid expansion of information, the audience is more concerned about the timeliness of news information rather than the authenticity of news information. In the past two years, with the rapid development of modern information technology, new media has become a hot topic. According to research, the main body of "new media" is "post-90s" college students. Compared with the efficiency and convenience of new media, the disadvantages of traditional media are particularly prominent. Whether it is a newspaper or a TV, it uses its own professional human resources to identify and verify online news and track and mine hot topics. It tells the truth of the facts to the audience, which is also difficult for the new media to do alone. The education of journalism majors in China has been going on for a century so far. In this long process, the importance of journalism education has gradually become prominent, and its importance has also been gradually increased in practice. Many foreign journalism scholars have put forward theories such as "journalism has no learning," because they believe that even if they do not receive orthodox journalism education, they can be competent for

complicated journalism work. Among the media that produce data news in China, media that both adhere to news professionalism and have the characteristics of new media are needed. With the development of journalism and the passage of time, the importance of journalism education to the industry has been widely valued by people, and the research on journalism education has gradually attracted people's attention. Among them, the curriculum is the core and soul of education, and the purpose and training goals of education enter the teaching process through the setting of the curriculum.

In the context of the robotization and automation of journalism, journalists need to develop professional competencies that enable them to perform the tasks of complex individual and collective creative activity, namely, writing and editing. The modern journalist is primarily a writer, a creator of meaning and value, and then a transmitter of information. Modern universities are looking for innovative models for training journalists. Avdonina N S discussed the results of using the general education system approach to develop professional identity in the subjects "Introduction to World Journalism" and "History of Foreign Journalism" for students in the 42.03.02 "Journalism" stream at the university. The goal of this paper is to introduce general education techniques, namely, the joint work of analytical writing, deep, slow reading, and media projects. This helps shape the professional identity of future journalists. It is ready to work in the new conditions of the digital society [1]. Dadakhonov outlined the current state of journalist training in Uzbekistan and the experience gained in this regard. It will involve the concept of media convergence. This article attempts to explain the increasing importance of this phenomenon in journalism practice and education through scientific and theoretical perspectives. The development of Internet news has also shaped new activities in the information field. It includes blogging, citizen journalism, freelance journalism, and the emergence of online journalism. It is a demand for journalists and publicists who will work in these industries. In this regard, the article emphasizes the importance of further improving the national education system. He provides examples of international experiences and models of a cadre of qualified journalists that meet the requirements of the information age. He advises on the application of information technology in modern journalism education and the formation of students' professional skills in digital media and Internet journalism. His methods and tools for introducing ICT and Internet technologies into educational models and curriculum processes should be directly linked to modern requirements. The importance of journalism education around the world is changing rapidly [2]. Training in critical thinking is critical to the career development of journalism students. To achieve this, Huang has developed a gamification platform and a blended learning course. During the 18-week experimental teaching period, he carried out a series of teaching activities. These included online discussions as well as classroom lectures and discussions to improve the critical thinking skills and skills of 32 journalism students. Through repeated-measures analysis of variance on test scores and analysis of open-ended questions, it was found that the experimental teaching in the gamification platform and the blended learning environment significantly improved the participants' critical thinking ability and coping ability. The findings suggest that providing clear goals, challenges and tasks, feedback, competition and cooperation, actual scoring and visible status, and avoiding excessive justification contribute to a "meaningful gamification" experience. This may further lead to autonomous learning of critical thinking. But it has not been widely used [3]. Gastel suggested ways to build capacity in health journalism, especially in developing countries. After identifying prerequisites for high-quality health journalism and common barriers to implementation, the article describes five current or recent initiatives that can serve as resources or partial models. Next, the report identifies ways that can be implemented more broadly to improve the capacity of health journalism. These include an online repository of resources, e-mail discussion lists, collaboration with professional associations in journalism and other fields, internships and mentoring, workshops that bring journalists, health professionals and others together, development of localized resources, and graduate education for potential leaders in the field. It combines mutually reinforcing approaches and digital and face-to-face approaches. It seems to be the best option. It should pay careful attention to monitoring, evaluating, and sharing experiences of initiatives to improve health journalism [4]. There are not a few studies on the educational model of journalism, but there are not many studies on model innovation combined with modern information technology.

With the development of information technology (ITs) and the Internet, government transparency and information disclosure have attracted more and more attention from academia and practitioners. In addition, the popularity of social media applications presents new opportunities and challenges for governments, especially in China and other developing countries, related to the shift of administrative management to open innovation. The Weibo Official Document Exchange (ODEM) of the Haining Municipal Bureau of Justice is a practical case of government openness and innovation in the context of social media. Based on the ODEM case, Zhang N used the Technology-Organization-Environment (TOE) framework to explore the factors driving open innovation in China. Research has found that the support of top managers, the access and competence of IT personnel, and the regional economic and social environment are key determinants of the emergence of open innovation in the public sector [5]. Tuciak A explored the possibilities created by modern technology to prevent bullying and antisocial behavior. Modern life is inseparable from mass media and advanced information and communication technology. In this context, the antisocial and prosocial behavior of young people is displayed and defined. He then examines how new technologies can be used for (cyber)bullying prevention and intervention strategies. Technology-based solutions are divided into two groups: (1) preventive solutions, so they apply before bullying occurs; and (2) reactive solutions, designed to help victims, bystanders, and others deal with bullying. Some of the activities

presented are extensions of what is already known in the field of peer violence prevention, from in-person settings to online settings. Based on the information presented, it was concluded that new technologies can be used to raise awareness of the phenomenon of bullying, to develop socioemotional skills and some bullying prevention measures [6]. Advances in information, communication, and computing technologies have enabled digital volunteer networks of relevant publics across the globe to contribute to effective disaster and crisis response. Digital volunteer networks are event-centric, emerging networks. Currently, the literature in the fields of communications, computer science, emergency management, and geography is growing dramatically. Park CH assessed the current state of the literature and proposes a comprehensive conceptual framework for digital volunteer networks responding to disasters and crises. This framework is based on the traditional input-process-output model. It includes three aspects: disaster and crisis context, volunteer response process outputs, and outcomes. They also discussed the challenges of digital volunteer networks for crisis response. This article is expected to contribute to the development of related theories and hypotheses as well as practical strategies for managing digital volunteer networks [7]. These studies provide a detailed analysis of journalism professional education and information technology. It is undeniable that these studies have greatly promoted the development of the corresponding fields. We can learn a lot from methodology and data analysis. However, the research on the innovation of journalism education model by using information technology is relatively few and not thorough enough, and it is necessary to fully apply these technologies to the research in this field.

The innovative research on the education mode of journalism is one of the hot issues in the journalism. The purpose of this paper is to study, in the context of new media, combined with information technology, relying on multimedia, network communications, computers, etc., to actively promote the process of education reform. In this paper, this paper considers that the length of query audio samples will affect the retrieval performance of the system and conducts research and analysis. It is found that the corresponding recall rate is 82.5% when the query sample audio length is 5 seconds, and the recall rate is relatively improved by 13.2% when the time length is 10 seconds. It shows that the retrieval system still has a high recall rate even when used for short audio input, and the increase of the length of the audio sample is beneficial to the improvement of the retrieval precision rate. And he summed up a 2020 report on the demand for news talents in China's media. The results show that it can be found that the demand for journalism professionals in many news organizations is not as strong as before, generally between 30% and 40%. In the changes in the style of news information released by the news agency in the past three years, it is found that the proportion of the agency's commentary articles has increased significantly. There were 79 review articles in June 2017 and 189 review articles in June 2020. Then he selected 600 journalism majors for a survey and research. Among them, 46% of the senior students take the "unscientific course arrangement" as a deep opinion. Because seniors practice more, 33% of seniors agree with the item "the effect of practice is not high," and 90% believe that improving the current teaching method is the most important.

2. Methods on Innovative Models of Journalism Education Based on Information Technology in Context of New Media

In order to systematically study the development trend of new media and analyze the corresponding new media issues in the future, the development process of new media is now briefly analyzed, as shown in Figure 1. From the emergence of typical representative blogs and microblogs, the public has gained more right to speak. Especially on Weibo, a publisher's point of view can be fully expressed in just a few sentences. This method is more convenient and efficient and shortens people's sense of spatial distance.

The Internet did not get the attention of the broad audience in the early stage of development, but with the development of the Internet, new media has become an indispensable aspect of public life [8]. The concepts of independence, openness, and participation advocated by new media and the practical characteristics of giving absolute power to information disseminators are not available in traditional media in the past. As an extension of newspapers, radio, and television and another medium of information dissemination, the inherent advantages of the Internet are very obvious. In the process of the development of new media, interactivity and exchange have become an important aspect that cannot be replaced by traditional media. The real-time update of news reports and the continuous technological advancement of mobile devices have all contributed to the continuous improvement of the status of new media in public life [9]. Through this series of development, the Internet is no longer a "communication means" in the traditional sense, but an important way of feedback and redissemination of news information. With the popularity of the Internet, new media occupies a major position in the news communication industry, with a wide range of market shares and audiences [10]. In the concept of mass media, both new media and traditional media have certain status. The Internet has become the most efficient information dissemination tool in recent years, and it is essentially an important dissemination method of the mass media [11]. The inclusiveness and interactivity of the Internet in mass media are beyond the reach of other forms of media, and the importance of the Internet in today's society has even far surpassed that of traditional media. It also plays an important role in personal communication, distance education, and information dissemination. However, from the perspective of journalism professionalism, free expression in cyberspace makes information dissemination channels diversified and timely, but this does not guarantee the accuracy, objectivity, and authenticity of information. It sometimes requires the intervention of traditional media [12]. Different from traditional media, the composition of

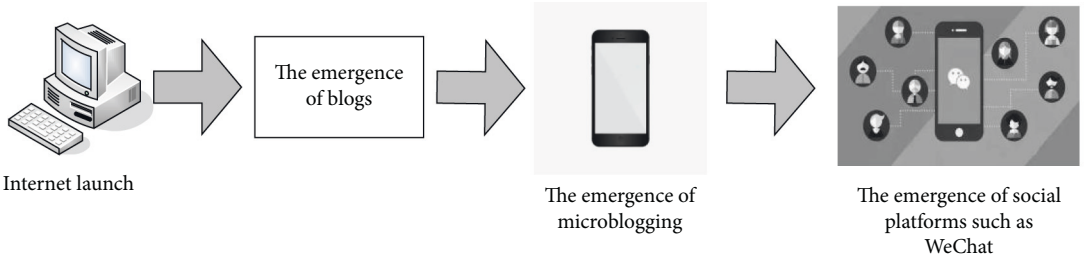

Figure 1: The development history of new media.

people who are disseminators of information through new media is relatively wider, the views of information dissemination are more novel, and the feedback on information through the Internet is also more direct. The five general development directions of new media are shown in Figure 2.

Broadly speaking, information technology refers to the ability to expand the functions of human information organs, a class of technology that enables it to perform the functions of receiving, transmitting, processing, reproducing, and using information. In the process of transforming the world, in order to survive and develop, human beings must continuously improve the means of receiving and using information, that is, to expand the function of the information organ, which eventually led to the birth and development of information technology [13]. Strictly speaking, modern information technology refers to the information technology of the electronic age. It is a composite high-tech based on computer technology, communication technology, information processing technology, and management technology. It forms the foundation and core of all information technologies. It constitutes the foundation and core of all high technologies, the most important of which are database technology, distributed network technology, and multimedia technology [14]. Information technology tools are used effectively in education and research, with an emphasis on the development and use of educational information resources. Information technology in the field of education is mainly based on multimedia, network communication, computer, and so on. With the in-depth development of information technology, the training methods of journalism teachers are becoming more and more modern [15]. Multimedia network technology teaching methods are widely used. Teachers use audiovisual equipment such as slide projectors and computers to enable students to master deeper and wider news knowledge. It makes students better editors. News editors are professionals with certain basic skills in interviewing, editing, shooting, planning, and producing radio and television programs. They love their work and are committed to its content [16], as shown in Figure 3.

The stationary duration of an audio signal is short, which means that while it is generally random, the power and energy spectrum is essentially constant over a relatively short period of time (10 to 30 milliseconds). Therefore, when an audio signal is processed, the sound is first divided into several short sound parts called frames, and this process is called framing [17]. To maintain continuity between frames, two adjacent frames overlap partially (usually 1/3 to 1/2 of the frame length). Framing is usually weighted with a fixed-length sliding window [18]. Given a sample of an audio signal and a window function, the weighted audio signal can be expressed as follows:

$$s_w(n) = s(n) * w(n). \tag{1}$$

Commonly used windowing functions include rectangular window and Hamming window. The definition of rectangular window is shown in formula (2), and the definition of Hamming window is shown in formula (3).

$$w(n)\begin{cases} 1, & 0 \le n \le N-1 \\ 0, & \text{other} \end{cases}, \tag{2}$$

$$w(n)\begin{cases} 0.53 - 0.45 \times \cos\left(\dfrac{2\pi n}{N-1}\right), & 0 \le n \le N-1, \\ 0, & \text{other.} \end{cases} \tag{3}$$

Among them, N in formulas (2) and (3) represents the frame length.

Feature extraction is a very important aspect of pattern recognition, machine learning, and speech signal processing. Likewise, acoustic feature extraction is essential in information retrieval systems [19].

The short-term energy is the sum of the energy of the sound signal over a period of time and is calculated by formula (4).

$$E_n = \sum_{p=n-N+1}^{n} [x(p) * w(n-p)]^2. \tag{4}$$

Among them: E_n is the short-term energy of the nth acoustic frame, $x(p)$ is the sound sampling point, $w(n-p)$ is the window function, and N is the number of samples per acoustic frame. The value of energy is usually large, so its logarithmic value is often used as a feature [20].

Gaussian Mixture Models (GMMs) can adapt to any form of distribution and are often used in speaker recognition to represent the spatial distribution and the distribution of speakers' speech features. A GMM is essentially a multidimensional probability density function that can be represented as a linearly weighted sum of multiple Gaussian density functions.

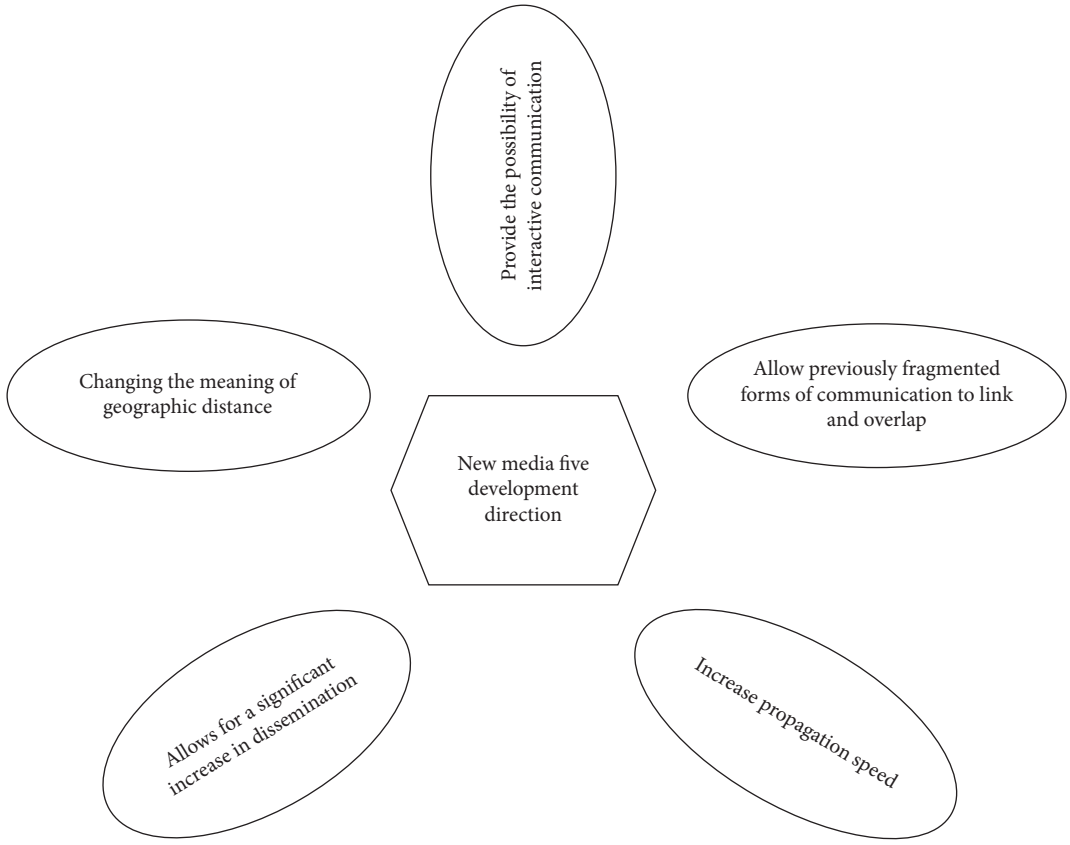

Figure 2: Five development directions of new media.

$$p(g \mid h) = \sum_{i=1}^{N} q_i p_i (g \mid h). \tag{5}$$

Among them: g is the multidimensional acoustic feature vector, h is the parameter set of GMM, N is the mixture degree of GMM (the number of Gaussian components contained in GMM), q_i is the weight of the ith Gaussian component, and it satisfies the expression

$$\sum_{i=1}^{N} q_i = 1, \tag{6}$$

$p_i(g|h)$ is the probability density function of the ith Gaussian component of the GMM, expressed as

$$p_i(g \mid h) = \frac{1}{(2\pi)^{b/2} \left| \sum_i A \right|^{1/2}} \exp\left\{ \frac{-(g - v_i) \sum_i^{-1} (g - v_i)}{2} \right\}. \tag{7}$$

Among them: d is the dimension of the feature parameter, v_i is the $b \times 1$ -dimensional mean vector of the ith Gaussian component, and $\sum A$ is the $b \times b$ -dimensional covariance matrix of the ith^{i}Gaussian component. Therefore, a GMM model can be represented by a set of parameters:

$$h = \left\{ M, q_i, v_i, q_i \right\}, \quad i = 1, 2, \ldots, M. \tag{8}$$

By extracting the domain feature words of a certain category, the document set of this category is used as the foreground corpus, and the document set of other categories (the sibling nodes of the category in the virtual category tree) at the same level as the category is used as the background corpus. The implementation process of the emergency subject description method based on the event frame is shown in Figure 4.

The domain feature word extraction algorithm mainly calculates the domain membership degree (DMD) of each word after word segmentation and filters out the final domain feature word set (DFs) according to the degree of membership. It flexibly adjusts the scale of DFs by setting membership thresholds. It can be measured by three indicators used to calculate the domain membership of words: Domain Relevance (DR), Domain Consensus (DC), and competition factor, which are described in detail below.

DR measures the degree of relevance between a word and a domain. The domain relevance $\mathrm{DR}_{a,k}$ between word a and domain D_k is calculated as follows:

$$\mathrm{DR}_{a,k} = \lg\left(TF_{a,k}\right) \times \lg\left(\frac{P(a \mid Cf_k)}{P(a \mid Cb_k)} \right). \tag{9}$$

Among them, $TF_{a,k}$ is the frequency of word a in domain D_k, and $P(a|Cf_k)$, $P(a|Cb_k)$ are the probability of a in foreground corpus Cf_k and background corpus Cb_k, respectively.

Figure 3: Jobs of news editors. (a) Interviews. (b) Editor. (c) Camera. (d) Broadcast.

DC measures the uniformity of the distribution of words in the domain corpus and is defined as follows:

$$\mathrm{DC}_{a,k} = \sum_{a_j \in Cf_k} \left(P_a(c_j) \lg \frac{1}{P_a(c_j)} \right). \tag{10}$$

Among them, $P_a(c_j)$ is the probability that the word a appears in the jth text of the foreground corpus. It can be seen that the definition of DC is similar to information entropy.

The competition factor γ is the ratio of the occurrence probability of a word in the domain foreground corpus to the maximum occurrence probability in other domain corpora. γ is defined as

$$\gamma_{c,k} = \frac{P(a \mid Cf_k)}{\max_{Cf \in C} P_a(a \mid C)}. \tag{11}$$

Among them

$$C = Cf_k \cup Cb_k. \tag{12}$$

Combining the above three indicators, the calculation formula of the domain membership degree (DMD) of the candidate feature words is obtained:

$$\mathrm{DMD}_{a,k} = \gamma_{a,k} \left(\theta \, DR_{a,k}^{\mathrm{norm}} + (1-\theta) DC_{a,k}^{\mathrm{norm}} \right). \tag{13}$$

Among them, $\theta \in (0, 1)$ is flexibly adjusted according to the scale of the background corpus. $\mathrm{DR}_{a,k}^{\mathrm{norm}}$, $\mathrm{DC}_{a,k}^{\mathrm{norm}}$ are the normalized $\mathrm{DR}_{a,k}$, $\mathrm{DC}_{a,k}$, respectively, defined as

$$\begin{aligned} \mathrm{DR}_{a,k}^{\mathrm{norm}} &= \frac{\mathrm{DR}_{a,k} - \min(\mathrm{DR}_k)}{\max(\mathrm{DR}_k) - \min(\mathrm{DR}_k)}, \\ \mathrm{DC}_{a,k}^{\mathrm{norm}} &= \frac{DC_{a,k} - \min(\mathrm{DC}_k)}{\max(\mathrm{DC}_k) - \min(\mathrm{DC}_k)}. \end{aligned} \tag{14}$$

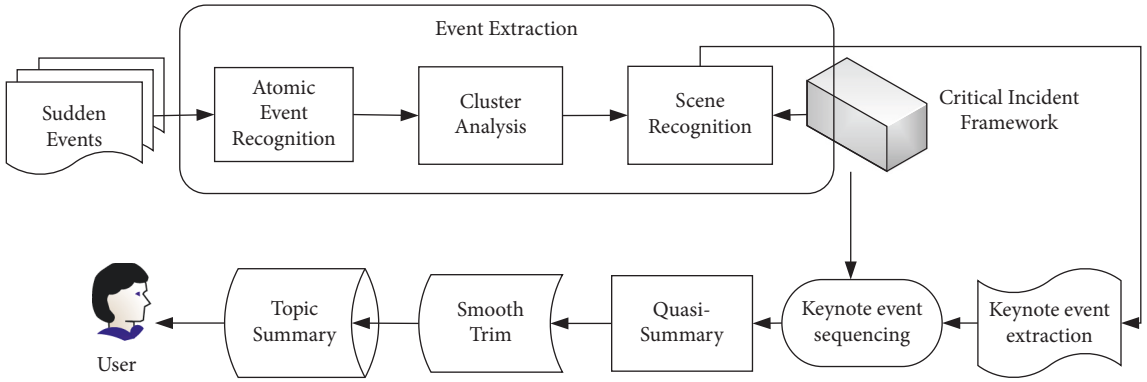

Figure 4: Flowchart of emergency topic description method based on event framework.

The automatically extracted domain feature words cannot directly represent the text as feature items, and the influence of the training set must be eliminated. Because the training data is randomly selected from the news texts of emergencies collected on the Internet, the network media may focus on several emergencies in a period of time. The time, place, and participants with high popularity in these emergencies may be extracted as domain feature words, and the event hierarchy is shown in Figure 5. In order to make the domain feature words more representative, it is necessary to remove such words from the vocabulary, and the remaining domain feature words constitute text features. In order to make full use of the domain membership in the feature weight calculation, it gives the TF × DMD weight calculation formula:

$$q_i = \frac{tf_i \times \mathrm{DMD}_k}{\sqrt{\sum_{i=1}^{n} (tf_i \times \mathrm{DMD}_k)^2}}. \tag{15}$$

Among them, q_i represents the weight of the feature item t in the text c_i. The word frequency tf_i represents the frequency of the feature item t in the text c_i, and DMD_k represents the membership degree of the feature item t in the field D_k.

In order to improve the search speed, this paper proposes a search algorithm based on inverted index. It builds a reverse index of an offline audio news database before searching, thereby realizing fast retrieval of audio samples. In the context of text data retrieval, direct indexing means that the searcher must go through every word of every document in the text database and determine whether that word matches the keywords in the query. When the number of documents in the database is large, this indexing method is inefficient and therefore not suitable for large data retrieval tasks. Inverted indexing is the most commonly used indexing technique in modern search engines because it greatly improves search speed by converting the flow of information from document to word to document. An inverted index consists of a list of index units, which can be words, characters, phonemes, etc., and a table containing records corresponding to each index unit. Each record table element stores the position of the index unit in the document, each position (a), (b) represents the ID of the document and the position of the index unit in the document, as shown in Table 1.

When searching, according to the query submitted by the user, the search system can quickly return all positions in the database where the query item appears in the index item list and the corresponding record table. For example, the query item 'New' appears in position 2 of record 1.

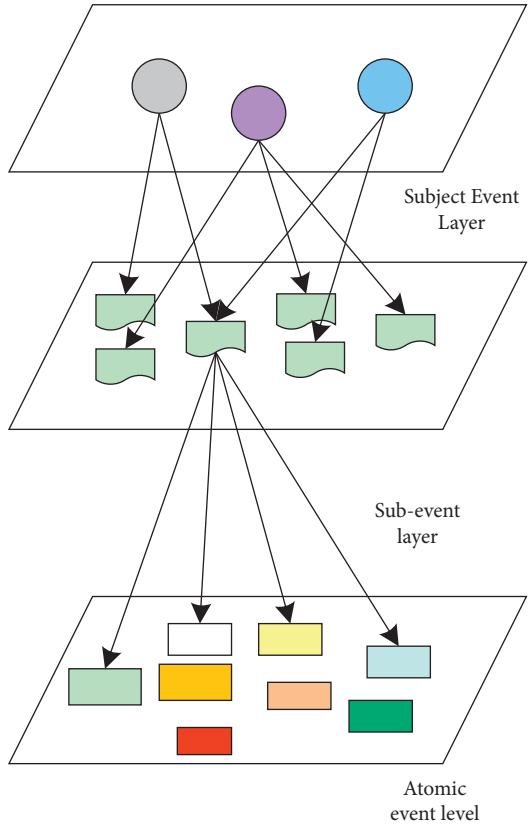

Figure 5: Event hierarchy.

Table 1: Inverted index of document 1 to document 3.

Index items	Record sheet	Index items	Record sheet
New	(1, 2)	Good	(3, 1), (2, 4), (3, 2)
Staff	(1, 3)	Job	(2, 2), (3, 3)
True	(2, 3)	Student	(1, 1), (2, 1)

Inverted index-based retrieval algorithms convert audio through a hashmap into a data structure suitable for an inverted index to allow fast searching of audio samples. The hash value is the hash value of the audio file number and the time offset of the anchor point, and the hash key is a hash-

mapped value of a pair of slightly different frequencies and time offsets between them.

The traditional Chinese journalism education mainly focuses on cultivating journalism undergraduates. After graduation, most of them enter the media, enterprises, etc., and they are engaged in the practical work of journalism. In the United States, training graduate students in journalism is considered to be the most important part of journalism education. They believe that the best way to improve the level of newspapers, radio, and television is to let graduate students in journalism also join the media team, not only undergraduate journalism students should enter the media. At present, the cultivation of journalism graduate students in China is still out of touch with reality and has an unreasonable structure. So, what we need to do is to change the existing situation. By attaching importance to the training of journalism graduate students and doctoral students, it has enabled China's journalism and media industry to develop to a deeper level.

In terms of curriculum setting, the journalism major has a lot more practical credits than other liberal arts majors. Taking a university in China as an example, as shown in Table 2, journalism professional practice credits are 25 credits, accounting for about 14% of the total credits. It can be seen that the practical teaching of journalism is more important.

Journalism and communication is an applied discipline that closely combines theory and practice. The talents cultivated by journalism and communication education should be applied talents who can be competent for news media work or journalism and communication research. It should not only strengthen the training of students' professional skills, but also attach importance to the basic teaching of journalism education. However, the current Chinese journalism education is still relatively old in terms of teaching concepts. Teaching methods and means can not keep up with the pace of the times, the teaching content still adopts the traditional classroom teaching method, teachers teach knowledge on the podium, and students take notes in their seats. However, there are also some courses that use multimedia equipment, but the use situation is not optimistic. Basically all courses are completed in the classroom, and there are few opportunities for students to participate in social practice during school. The quality of teaching staff construction is directly related to the quality of teaching. The current situation is that there are very few comprehensive talents who have both profound theoretical literacy in news communication and rich practical experience in news media. Contradictions such as outdated knowledge structure, simplification of subject background, and lack of network knowledge are common problems faced by journalism and communication departments.

3. Experimental Design of Innovation Model of Journalism Education

In order to quickly retrieve the audio data needed by users, this paper adopts a two-stage news retrieval scheme, and the system frame diagram is shown in Figure 6.

By combining the event extraction technology and automatic summarization method in the context of news, a multidocument automatic summarization algorithm based on event extraction is developed. First, it uses event extraction techniques to identify scenarios that appear in breaking news. It then uses automated summarization methods to extract, categorize, and polish key events into scenes that best represent the theme of the event. It finally extracts breaking news topics from the scene.

Table 2: A comparison table of practical credits for some majors in the liberal arts of a university's 2019 training program.

Professional name	Practice credits	Percentage of total credits (%)
Journalism	25	14
Chinese language and literature	20	11
English major	15	10
Economics	14	8

This chapter studies the effects of different audio sample durations on retrieval accuracy and retrieval speed. The audio database used in the experiment includes one audio source library and three search libraries. The audio sample library uses 24 hours of audio data in WAVE format, including 150 audio clips. Each segment is 5 to 15 minutes long, and the sampling rate is uniformly 8000 Hz. In the experiment, this paper randomly selects four audio clips with lengths of 5, 10, 15, 20, and 25 seconds as audio samples, and each clip contains 100 audio clips, which are also recorded in a quiet office environment. The algorithm parameters of the experiment are selected as follows: frame length is 64 ms, and frame offset is 32 ms. The experimental data is selected from the laboratory's online news corpus, with a total of 3 keywords. The statistics of the corpus are shown in Table 3.

4. Data on Innovative Models of Journalism Education

The length of the query audio sample will affect the retrieval performance of the system. Figure 7 shows the effect of different audio sample lengths on retrieval accuracy and speed.

Figure 7 shows that the recall rate for querying 5-second audio samples is 82.5%, the recall rate for 10-second audio samples is relatively high at 13.2%, and the recall rate for 15-second audio samples stabilizes at 98.5%. It shows that the search engine has a high recall rate even for short audio data. Increasing the length of the audio samples can help improve the accuracy of the search. The reason why the recall rate of the search algorithm drops in short audio data is that the shorter the audio data is, the fewer the feature points are extracted and the number of feature pairs decreases. This results in a reduced probability of collision after hash matching, which is a reduced probability of identifying audio samples. Meanwhile, Figure 7 shows that the accuracy of the search system remains at 100% for input samples of different lengths, mainly for two reasons. (1) Due to the large difference in features between different audio samples, the probability of false detection is also very small. (2) In the

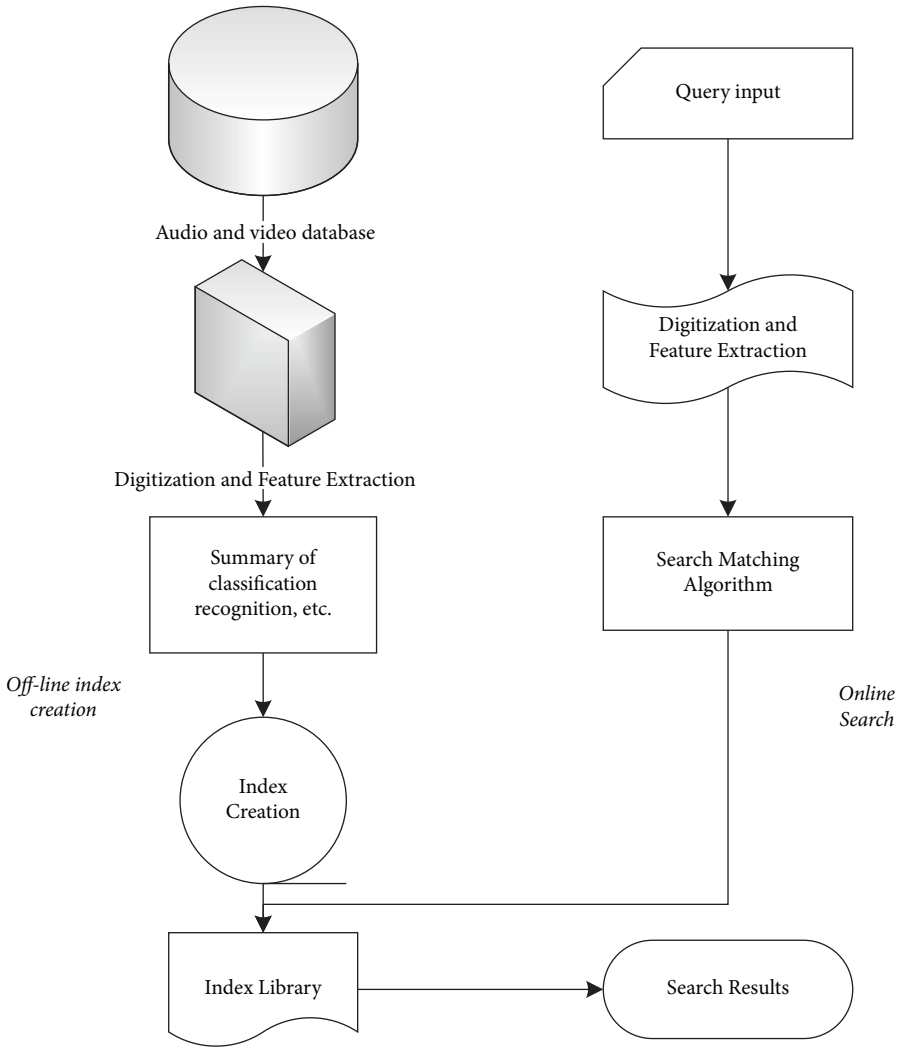

Figure 6: Framework diagram of news retrieval system.

Table 3: Statistics of experimental corpus information.

Experimental corpus ID	Corpus 1	Corpus 2	Corpus 3
Event	Nuclear pollution	Jumped to death	Coal mine accident
File	56	62	59
Paragraphs	234	227	347
Number of sentences	554	362	492

search algorithm, only when the number of hash keys corresponding to the detected audio clips is greater than the threshold, it can be regarded as an audio query. And the same number of hash keys between different audio samples can also show that the search time of the system increases almost linearly with the length of the audio samples. This is due to the fact that, during the feature search process, the increase of audio data will lead to an increase in its number. The feature search time naturally increases, while the length of the audio recording has a negligible effect on the search time. The retrieval time is in the millisecond level, which indicates that the retrieval algorithm based on the inverted index can greatly improve the retrieval time.

Figure 8 shows the results of a 2020 survey on the demand for news talents in China's media. It can be found that the demand for news professionals in many news organizations is not as strong as before, generally between 30% and 40%. With today's journalism education graduates, the industry's general evaluation of these talents is "quick start, lack of stamina." However, the talents that the industry needs are "quick start and strong stamina." This shows that a light grasp of news professional knowledge should be far from meeting the current market demand. Such a conflict requires that the education of journalism majors in colleges and universities should be market-oriented to cultivate journalism professionals. The first thing to do is to rationalize the curriculum. By strengthening general education and improving the practice system, it cultivates qualified journalistic talents who can truly meet the needs of the market.

Figure 9 shows the changes in the style of news information released by a news agency in the past three years. The changes in the corresponding style of news information, such as news, newsletters, comments, and supplements, are

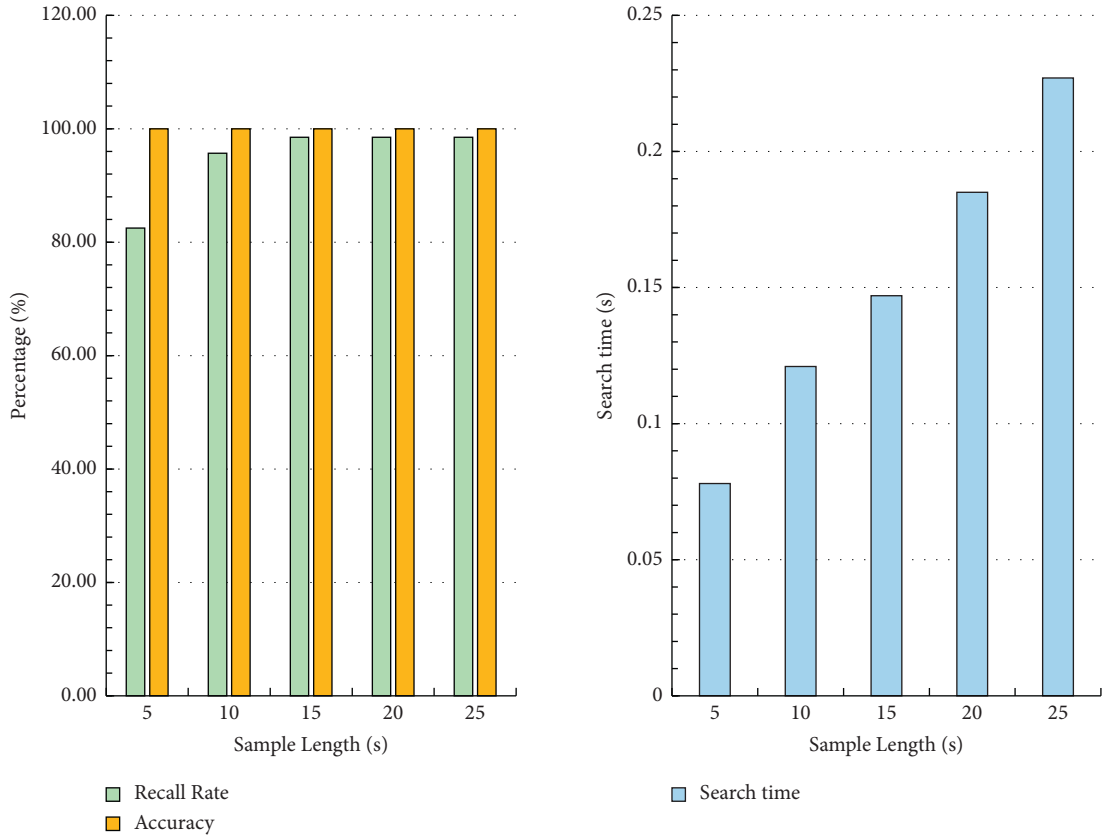

Figure 7: Effects of different audio sample durations on retrieval accuracy and retrieval speed.

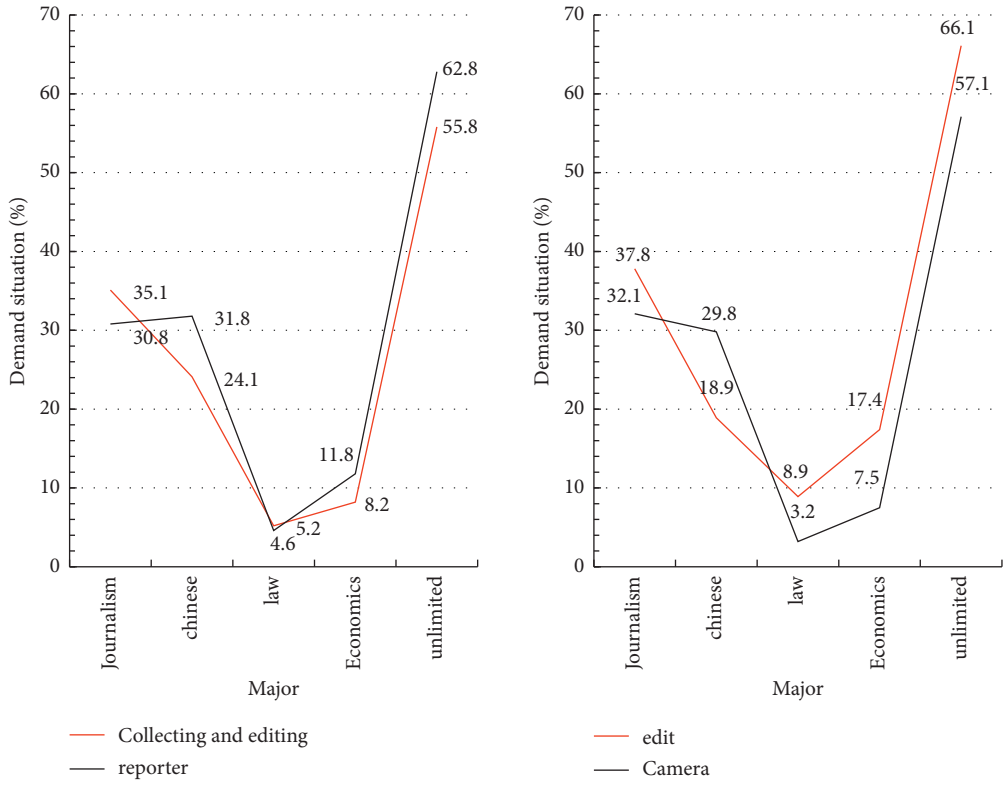

Figure 8: Demand for professional talents in editorial positions.

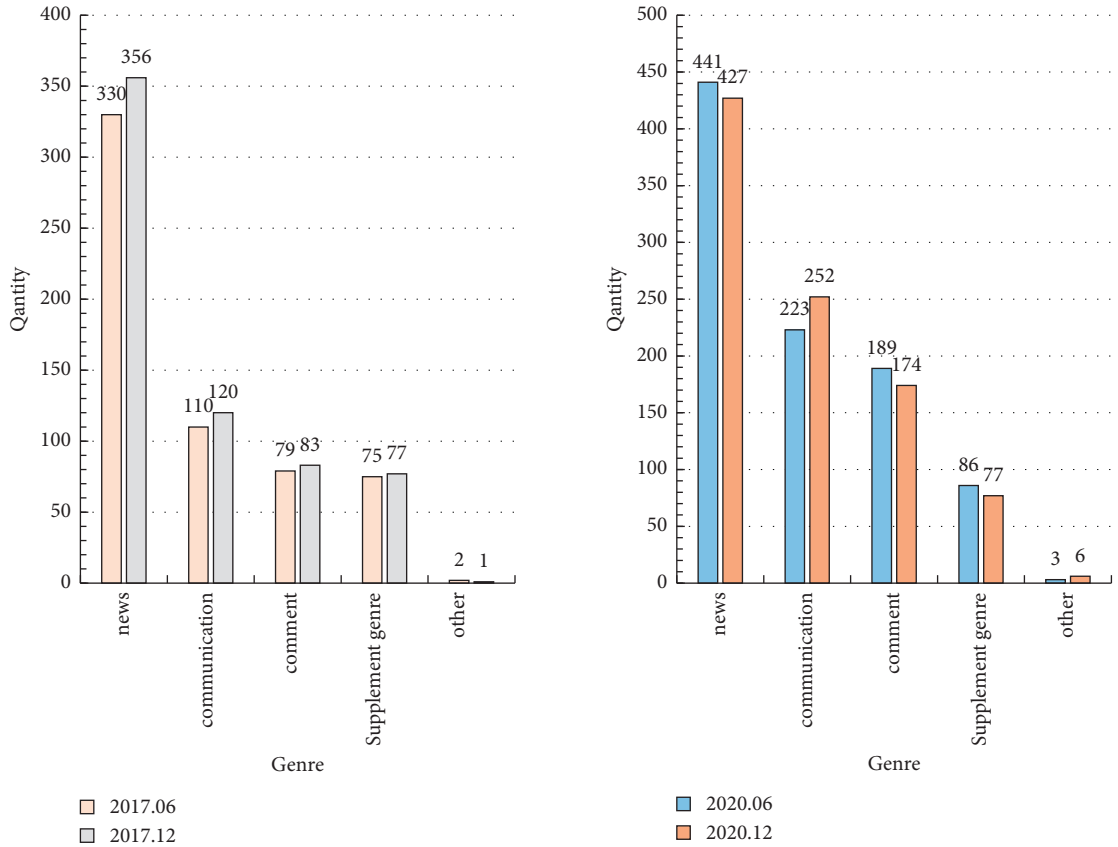

Figure 9: Changes in the style of news release information.

relatively significant. Over time, the agency's share of review articles has increased significantly. In June 2017, there were 79 review articles, and in June 2020, there were 189 review articles. Through this stage, the traffic of advertisements carried by them has increased relatively, the forms of advertisements are also very rich, and the content of advertisements has also increased with the increasing needs of the people. Cyberbullying is indeed scary these days, but people in the virtual space of the Internet can freely express their opinions. Many public sentiments and opinions are resolved by attracting the attention of the authorities through the Internet.

The official application of WeChat has made WeChat public accounts an important vehicle for public groups to disseminate ideas and information. It disseminates and spreads news from multiple angles. And WeChat is not just the broadcast of corresponding news information. From the point of view of the problem, some articles on the subject of commentary have also been well received by the readers of the official university. From the perspective of new media, it can also achieve good results by making Xinhua News Agency news into shortened video information for dissemination. These are all examples of the transformation of Xinhua News in the form of reporting. While the traditional media has made perfect changes in the style of writing, it is more about the pursuit of new forms and changes in the new media environment. In the process of news reporting, different forms attract different audiences to different degrees. With the transformation of various forms of news reporting, the distribution and level of audience groups are also gradually changing. It can improve the universality of news reports from multiple angles, which is another requirement for the transformation of news reports in the new media environment.

The news industry is a special industry, and the society has higher requirements for the professional ethics of journalists. It is not a curriculum that teaches professional ethics education in the classroom to prepare students with sufficient professional ethics when they enter the workplace. There is a certain distance between the realistic expectations of society and the theoretical education of schools. Students may form certain expectations of society during their full-time education in school. However, when he enter the society and start working within a few months, he would find that his expectations were impossible to achieve. That only existed in his dreams. There are still many problems in journalism education under the background of informatization. In order to innovate on the basis of the current journalism education model, we selected 600 journalism majors to conduct a survey and research. This article will summarize the main hot issues of journalism practice education, as shown in Figure 10.

As can be seen from Figure 10, for the four issues currently ranked higher in journalism education, the proportion of senior students who think their school's practical education has problems is the largest, and the proportion of sophomores is the least. Among them, 46% of the senior

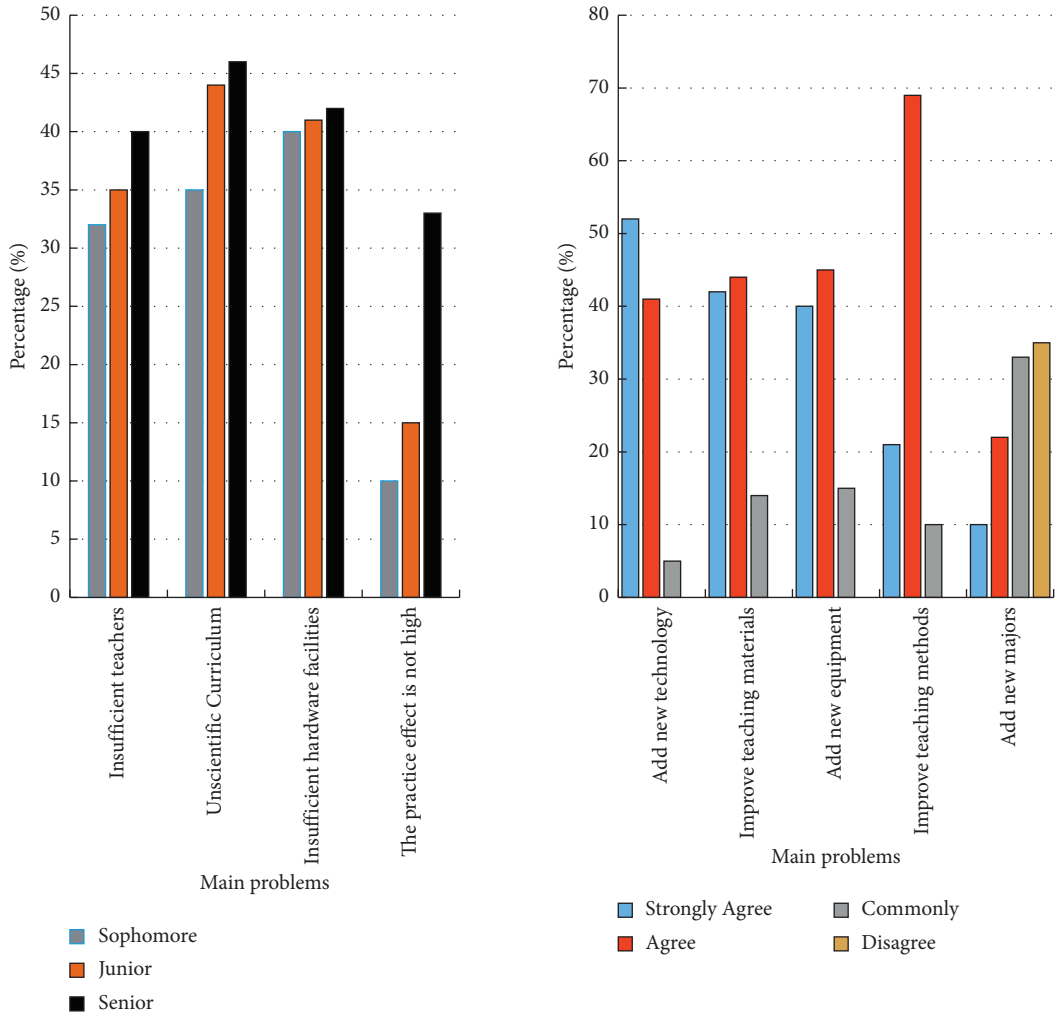

Figure 10: Survey results on current issues and improvements in journalism education.

students take the "unscientific course arrangement" as a deep opinion, because the senior students practice more. Therefore, 33% of seniors agree with the item "practical effect is not high," and only 10% of sophomores agree. What stands out is that 90% of people believe that improving teaching methods is the most important.

The innovative methods of journalism education mainly focus on the integration of information technology into the informatization of journalism education. The concept of information-based learning is a concept that reflects teaching attitudes and methods. It provides guidance for teaching activities. It is based on modern teaching theories and ideas, and by taking constructive measures (acquiring, developing, and using educational resources, understanding and using modern information technology, and improving the educational system), it teaches and improves students' information literacy and skills in a targeted manner.

5. Conclusion

New media is the most important and popular communication medium in the new century, and the communication mode promotes the transformation of the whole society. The new cultural form subtly affects people's ideas, values, attitudes, emotions, and behaviors. Journalism education is now a concern of the whole society. The whole world is calling for the reform and development of journalism education. Only reform and development can promote the progress of journalism as a whole. This paper studies and analyzes the current media's demand for news talents, the changes in the style of news information release under the background of new media, and the development of education and teaching models. This paper understands that the educational environment has a great influence on learning in the process of education implementation, so educational institutions should create a good information technology learning environment for journalism students. It is a systematic work to improve the talent cultivation of journalism professionals, which requires continuous development and innovation. The environment of global media transformation and reform, as well as the increasing diversification of media and the modernization of news broadcasting media, have put forward higher requirements for the development of journalism education in China. In the context of educational informatization, the innovation of journalism education will be an important field for the development of

Chinese universities. Journalism education under the background of informatization faces many challenges in establishing the concept of informatization education and optimizing the framework of informatization education.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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