Analysis of Algorithm Model for Building Communication Influence Based on Geographic Information in University Integrated Media Platform

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Abstract. With the vigorous development of the online and offline integration model in the media industry, the construction of a media fusion platform in colleges and universities has become an important development plan for education reform, and the fusion media platform also affects the strategy and direction of the sustainable development of colleges and universities to a certain extent. However, at present, the construction of convergent media platforms in most colleges and universities is still in the concept and start-up stage, and it is impossible to form a relatively complete convergent media communication matrix. For this reason, this paper takes the field of geographic information as the breakthrough point, and focuses on establishing a scientific communication evaluation system to evaluate the communication effectiveness and construction effectiveness of the media platform in colleges and universities. Through the analysis of the algorithm model in this study, the main factors affecting the communication and influence of the financial media platform in colleges and universities are obtained. In addition, this research can guide geographic information service providers to develop comprehensive geographic information service products that meet the real daily needs of users in the era of convergent media and provide guidance.

Keywords: Fusion Media Platform · University · Geographic Information · Evaluation System

1 Introduction

With the rise of smart terminals and instant messengers, changes in users' information consumption habits, user thinking and user strategies have become the main theme of media transformation in the mobile Internet era. The rapid rise of emerging media has continuously impacted the dominant position of traditional media, and people's access to information has gradually developed in the direction of diversification. Therefore, promoting the integration of traditional media and emerging media has become a new development opportunity and challenge for the media industry. In the "Internet + era", traditional industries such as geographic information have been revolutionized. The integration of media platforms with high technology has brought new development paths

and broad prospects to the traditional map and new media map markets. Along with the continuous change of the network information dissemination mode, the integrated media platform is both a product of the media industry under the influence of technology and the main response of the media to the new industrial environment. Exploring the development of integrated media platforms in colleges and universities is not only more intuitive to reflect the development trend of the integrated media industry, but also related to the realistic need of whether the advantageous role of integrated media platforms can be brought into play to help universities integrate their resources for innovative guiding role of public opinion.

2   Related Research

Through the study of literature related to integrated media, it is found that most of the integrated media studies are centered on media topics such as news and broadcasting, and the research literature on integrated media platforms in universities accounts for a relatively small percentage. Although some scholars have started to think about the construction of university integrated media platforms, they lack analysis and evaluation of the use of integrated media platforms in the actual research process. However, due to the special nature and relatively closed nature of colleges and universities, the research on the integrated media education platform within colleges and universities will be more objective and necessary. Therefore, the thesis will explore the degree of communication and influence of the integrated media education platform within colleges and universities.

Among them, scholars such as zhu explored the reform path of the media majors of county-level local colleges and universities to serve the construction of integrated media in the context of integrated media, but the research limited to media majors may have certain limitations on the evaluation of the construction of integrated media [4]. Scholars such as Sun analyzed the ideas and detailed strategies for the construction of quality system of continuing education in colleges and universities in the context of integrated media era, and proposed to ensure the teaching quality of continuing education with the help of modern information technology and means, which has a certain contribution to the construction of integrated media [2]. Liu scholars proposed that the construction and management of university news propaganda platform should be developed continuously to meet the development trend of the era of integrated media, but there is a lack of certain analysis and research on the communication influence of integrated media platform [1]. Zhai scholars proposed to enhance the mainstream media with the help of short video However, their research in the integrated media platform has limitations and lacks breadth [3].

3   Data Acquisition

3.1   Data Acquisition

In this study, a questionnaire was administered to 1000 teachers from different colleges and universities who are closely related to media as well as to their classmates. In order to verify whether the questionnaire meets the requirements of this study, the results of the

questionnaire were analyzed for reliability and validity using the statistical analysis tool SPSS. The results showed that the reliability test Cronbach's alpha coefficient for the seven selected items was 0.859, which is greater than the minimum acceptable value of 0.7 and has a more desirable level of reliability, and the validity analysis using The results of both KMO measurement and Barlet's sphericity test also met expectations. According to the results of the questionnaire, there are six common platforms for integrated media education in colleges and universities: WeChat, Video No., ShakeYin, Racer, Weibo and B station, etc. The data results are also in line with the current popular trends among the student groups.

3.2   Research Steps

According to the theoretical concept of hierarchical analysis, the research is divided into the following four steps.

The first step is to collect and investigate the related literature on "integrated media platform", "university integrated media" and "communication index evaluation system", and after summarization and comprehensive analysis the evaluation index system was initially established, and three key words such as "activity", "interactivity" and "communication" were extracted.

In the second step, the three dimensions of activity, interaction and communication are defined as the first-level indexes, and the second-level indexes are selected to meet the characteristics of the six mainstream platforms used by universities in the questionnaire, such as WeChat public number, video number, microblogging, Jitterbug, Racer, B station, etc. The specific indicators such as "total number of readers" and "number of headlines" are used for communication power analysis.

In the third step, the data of the secondary indicators of 50 university integrated media education platforms in each of the six platforms that can be observed in the foreground are captured, and a hierarchical analysis model and judgment matrix are established.

In the fourth step, after deriving the index system and the specific weight values of each factor at each level, the priority weight of each element of each level to a certain element of the previous level is obtained by solving the characteristic vector of the judgment matrix, and finally the final weight of each alternative solution to the total target is summed up by the method of weighting, and the one with the largest final weight is the optimal solution.

The three key words of activity, interactivity and communication degree are defined as the primary indicators, and the three primary indicators are subdivided into 8 secondary indicators, such as the number of papers published, the total number of readers, the number of headlines, the average number of clicks, the highest number of clicks, the total number of likes, the total number of views, the new list index, etc., and the indicator data are obtained from 6 mainstream platform channels, which finally constitute the evaluation system of communication influence of university integrated media education platform. Indicator system.

The influence analysis is carried out according to the top of different financial media platforms, and the comprehensive evaluation is mainly carried out according to the index system in Table 1:

Table 1. Influence analysis index system

Primary Indicator System	Secondary Indicator System	Platform
Activity, Dissemination Interaction	Number of posts	WeChat Video Weibo TikTok Kuaishou bilibili
	Total Reads	
	Number of headlines	
	Average	
	Highest number of clicks	
	Total Likes	
	Total views	
	New List Index	
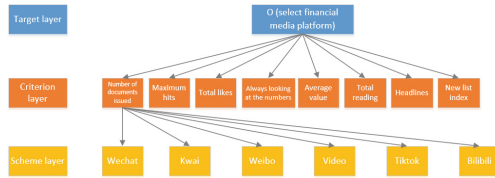
Fig. 1. Hierarchial analysis model of Integrated media platform

3.3 Weight calculation

According to the principle of hierarchical weight decision analysis method, the problem is decomposed into different constituent factors, and the factors are aggregated and combined according to different levels according to the interrelated influence between factors, forming a multi-level analysis structure model as shown in Fig. 1. Starting from the 2nd level of the hierarchical model, a judgment matrix is constructed for multiple factors of the same level affecting each factor of the upper level up to the lowest level.

The factors in the second layer are numerated, and then the judgment matrix is constructed according to the hierarchical analysis model, and finally the final weight vector is derived according to the consistency test.

Let us compare the importance of each criterion C1, C2,…, Cn to the target O. The formula is calculated as follows:

$$C_i : C_j \Rightarrow, A = (aij)n \times n, aij > 0, aij = \frac{1}{aij} \tag{1}$$

In determining the weights between factors at each level, the schemes under it were compared two-by-two and rated according to their degree of importance. The nine importance levels of the consistent matrix method were quantified and assigned values, and the judgment matrix was formed according to the results of the two-by-two comparison. The calculation results in the first-level index of activity is 0.34896, dissemination is 0.45284, and interaction is 0.253. According to the second-level index, the weight of

the third-level index in WeChat activity is 100%; the weight of the number of posts in WeChat activity is 0.31458, the weight of the number of posts is 0.35566, and the weight of the number of original posts is 0.38857.

3.4 Data Conclusion

After the index system of the communication power of the university's integrated media center and the specific weights of the factors at each level are constructed, the synthetic coefficients of the data from various types of sources are used to determine the comprehensive coefficients of each type of source data, and then enter the standardized consensus to derive the final total weighted comprehensive index, the following are the standardized calculation formula and the weighted comprehensive formula:

- Activity = 22%*Weibo + 23%*WeChat + 10%*Video + 20%*TikTok + 8%KuaiShou + 17%Bilibili
- Dissemination = 10%*Weibo + 28%*WeChat + 15%*Video + 25%*TikTok + 8%KuaiShou + 14%Bilibili
- Interactivity = 18%*Weibo + 15%*WeChat + 10%*Video + 20%*TikTok + 8%KuaiShou + 19%Bilibili

4 Summary and Outlook

4.1 Summary

Based on the model of the communication power evaluation index system of the university's integrated media center established in this study, the weighted average algorithm is used to quantify and measure the communication power evaluation indexes of the university's integrated media center based on the final weights of different indexes and the use of examples, to derive the formula for calculating the communication power evaluation index system of the university's integrated media center, to complete the modeling, and to verify the specific communication degree and usage of the integrated media center within the university. The test result evaluation conforms to the expected results of modeling on the basis of specific quantitative values, reflecting the different construction effectiveness of the integrated media center platform in colleges and universities, as well as analyzing the influencing factors in the construction process of the integrated media platform through behind the values to guide the construction of the platform.

4.2 Outlook

Although this study tries to achieve objectivity and consistency in the process of data acquisition, model construction and result analysis, the technical methods used lead to some limitations in the accuracy of the obtained data, and the accuracy of the model can be improved by invoking big data and artificial intelligence in the future. On the other hand, this study mainly focuses on the geographic information field of university education, and future research can be extended to other fields to further verify the generality of this research method.

References

1. Liu Hao. The construction and management path of university news propaganda platform in the era of fusion media[J]. Journalism, 2021(05):51–53.
2. Sun Yuanpeng, Ma Min, Zhang Yong, Liu Min. The construction of quality system of university continuing education in the context of "integrated media" era: ideas and strategies[J]. Continuing Education Research,2021(11):1–4.
3. Zhai Changjie. How mainstream media in the melting media era can make use of short videos to enhance communication power[J]. News Outpost,2021(10):35–36.
4. Zhu Liangzhi, Sun Xiaojun. The reform path of media majors in local universities under the threshold of county-level integrated media[J]. Journalism World,2021(11):77–79.