

Research on the Design of Media Literacy Evaluation System for Chinese College Students

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Abstracts

with the rapid development of Internet technology and digital media technology and the innovation of information transmission and ideas, the content and form of media information increasingly rich, we have from the era of information shortage into the era of information explosion with the rapid development of media technology, the media with its unique appeal, to people's moral concept, way of thinking and mode of transmission produced unprecedented influence and change. Media literacy is seen as one of the skills essential for citizens of the 21st century. Its level directly affects whether people can effectively identify the values and political views implied in the media information, and whether they can treat the media rationally. Based on the relevant literature research, we discussed the compilation of the media literacy survey scale, and the reliability and validity were analyzed to verify the validity of the scale.

Keywords: Media literacy; Chinese college students; Scale design

Introduction

With the prosperity and development of the country, the network has also ushered in a new period of comprehensive construction. Media literacy is an effective means to promote the realization of the network power, and is a strong guarantee for the maintenance of the network ecological environment. Among the Internet users, according to the occupation type, the students account for the largest proportion, reaching 21.0%. Among all the student Internet users, college students obviously constitute the backbone, and their Internet use time and demand are significantly higher than that of other student groups. College students show strong interest in the Internet, and at the same time have better sensitivity and acceptance of the changing network environment, and become an active group of network users. College students in the new era are teenagers who grow up side by side with the Internet. They are in the new era environment where various ideas collide violently and their opinions are freely expressed. The Internet has become an important medium for college students to understand the world, obtain information and express their personalities. We media is deeply loved by college students because of its high efficiency, interaction and convenience, which is in line with the inner spiritual requirements of college students to pursue freedom, yearning for equality and willingness to express. Contemporary college students are in the technology innovation and media under the rapid development of social background, they grew up together with the Internet, is the main network users, they shoulder the important mission and responsibility, need to establish the correct Internet concept and norms, so the study of college students' media literacy education is necessary.

Based on some contents of the concept of UNESCO media information literacy (MIL), this paper sorts out the characteristics of the media application of Chinese college students based on the literature, and puts forward the evaluation index of college students' network media literacy. Many scholars have discussed the measurement of media literacy from different perspectives, and found that knowledge and skills are the two most common components of the measurement of media literacy, followed by other components such as behavior and emotion. In each of these components, a second level index is set to measure. For example, skills are a broad component, interpreting, and generating media information. The knowledge component contains information domains about the media industry, media content, media effects, and self-perception. The classification scheme for components and domains is a useful template for determining content validity, that is, while specifying certain components and domains in the media literacy definition should provide a metric for each specified component and domain. Failure to measure the complete component / domain set specified in the concept definition can cause judgments of the validity of the incorrect content. The judgment of content effectiveness is a comparison of the structure of the components and areas of conceptualizing media literacy with their set of measures.

At present, most domestic scholars do not test the validity of the index system construction of media literacy measurement, and the test validity refers to the ideal degree of prediction of a certain trait provided by a certain test. The second-level metric designed in this paper is a useful layer of detail for researchers because it describes the need for different types of measurements, that is, measurement skills need different measurement types from assessment knowledge. General definitions, major components, and domains in these main components are given for the metrics. When designing media literacy measurement questionnaires and conducting intervention studies, this can be used as a framework to provide a more detailed clarity to measure their media literacy, which will provide a stronger basis to judge the effectiveness of the measures.

Literature review

The term "media literacy" originated from the translation of "Media Literacy", and later extended into the ability to use the media effectively. The word first appeared in the 1930s, in *Culture and the Environment*, written by Levis and Thompson. Scholars BuWei published in 1997 on the meaning of media education, content and method, this is the first domestic to the history of media literacy and media literacy education system, after that, the concept of media literacy was put forward in China, scholars launched a lot of research on this problem, become an important academic field. Media literacy includes five indicators, namely, media acquisition, media communication, media awareness, media evaluation and media participation, which can be summarized as the judgment thinking and comprehensive ability reflected by the audience in the face of various complex media information.

Media literacy refers to people's ability of information selection, the ability to question and criticize information, information understanding ability, information creation and production ability, and thinking and critical reaction ability in the face of a large number of media information. In simple terms, the concept of media literacy not only refers to people for the media to convey the information acceptance ability, also includes the use of independent critical perspective of media information content analysis, multi-angle interpretation and evaluate the ability of media information, and creative use of media

information, provide services for the development of individuals and society. The public has high media literacy, and the corresponding ability to identify and respond to network information will be improved, and the network environment will become more healthy and harmonious. Media literacy is not unique in the application of media in the Internet platform, and should become an effective component of the comprehensive quality of the people in the new era.

The concept of college students' media literacy is separated from the above concept of analyzing media literacy, which is to embody the object and take contemporary college students as the group as a clear designated object. Therefore, this paper defines the media literacy of college students as: the media literacy of college students is a kind of ability of college students who can reasonably use the network to serve themselves on the basis of mastering the network related knowledge of technology, and the comprehensive literacy of interaction with media produced in the process. This comprehensive ability is not only limited to the media search for information, operation information meet their own needs, the ability to spread information to other Internet groups, more important is college students can do independent thinking, don't be contained by the media, in the media have strong safety consciousness, legal consciousness, moral consciousness and benign network ecological construction of the sense of responsibility. In other words, the media literacy of college students should be the ability of college students to have a more comprehensive cognition and understanding of the media, and take the media as a tool to help solve problems and help improve themselves. The media literacy of college students is the necessary personal literacy for their survival in the media society, and it is the basis for their independent improvement of their own ability and all-round development.

Research Methods

1. Study subjects and study methods

About 800 college students are expected to take the survey in the Beijing-Tianjin-Hebei region. Due to the epidemic, the questionnaire is mainly based on sampling, using the APP line of the questionnaire, adhering to anonymity and voluntariness. Starting from the beginning of January 2022 to the end of February 2022. The specific steps of the questionnaire survey are as follows:

- (1) Prepare an open questionnaire according to the dimension of media literacy of college students and distribute it to college students;
- (2) Analyze the results of the open questionnaire, and initially compile the questionnaire;
- (3) Test the expert validity of the preliminary questionnaire, issue the questionnaire in a small range, and revise the questionnaire for the first time based on the expert opinions;
- (4) Issue questionnaires for trial testing, and analyze the differentiation degree of the recovery items;
- (5) Conduct a reliability analysis of the questionnaire to test the internal consistency of the questionnaire;
- (6) Revised the questionnaire for the second time, compile a formal questionnaire and distribute it;
- (7) Using SPSS 23.0 software.

2. Measurement scale formation

In order to verify the scientific nature of the self-compiled Media literacy Assessment Index for Chinese College Students, three Chinese experts in related fields were selected to conduct face-to-face in-depth interviews on such aspects as "what perspectives can the media literacy assessment for Chinese college students be conducted" and "whether the proposed first and second level indicators are reasonable". According to the experts' suggestions put forward on the evaluation dimension, the importance of media literacy and the recognition degree of the first and second level indicators were investigated. The results showed that the recognition degree of each index was 85% higher, indicating that the constructed evaluation index was scientific and objective. Therefore, based on the connotation research and expert opinions, the questionnaire of Chinese College Students was formed. The subject of the questionnaire contains four large dimensions and 13 sub-dimensions, and the index description is shown in Table 1.

Table 1 Evaluation index system of media literacy of Chinese universities

Level 1 indicators	Secondary indicators and index description	
cognitive ability (A)	Online Literacy (Aa)	Be able to read and interpret the information provided by the media, form and develop their own systematic views, and reasonably participate in the expression and discussion of personal opinions, and share or share knowledge with others;
	Knowledge Building Ability (Ab)	In the face of each knowledge point or part of the knowledge in the media, it can independently construct a learning system for management and development, that is, knowledge management ability;
	Meaning-construct ability (Ac)	All learning behaviors in the media are purposeful and oriented, and have a clear meaning of cognition of their own cognitive objects and content.
ability of communication (B)	Role (identity) construction ability (Ad)	Role (identity) construction ability: when communicating with others in the media, they can not lose their real social identity, can correctly understand themselves and establish identity, and ensure their subjective status in the appropriate communication process;
	Communication and communication skills	Can use the media to carry out friendly and peaceful communication with others, carry

	(Ba)	out normal forms of dialogue and discussion, seek recognition in consensus, and think in differences; on the basis of facing individual differences, have communication skills;
	ability to cooperate (Bb)	Be good at using the technology and platform provided by the media to cooperate with others in function or content, and effectively contribute their own strength; that is, to implement the communication practice in the sister;
	Socialization ability (Bc)	In the process of communication, it has the subject consciousness and can perceive the social significance and value of communication. Participate in media activities with a responsible attitude, when using the media, can fully consider the positive and negative effects of their own words and deeds on others and the society, and be responsible for themselves and others;
	Responsibility and empathy ability (Ca)	In the process of using the media, I can always master the active position and be full of problem consciousness, and I can obtain rich emotional experience and actively participate in the use of the media;
Emotional ability (C)	Active creativity (Cb)	In rational comprehensive thinking, we should form positive, healthy and upward values, outlook on life and world outlook, pursue high-quality media life, and constantly improve ourselves and surpass ourselves.
	Rational Thinking Ability (Cc)	In the massive fragmentation of information without screening into people's media view
ability of practice (D)	Selection and Identification Ability (Da)	When, can choose their own information and know how to distinguish true and false, false and false, distinguish right from wrong;
	Reflective, critical, and	In the face of the uncertainty and

decision-making capabilities (Db)	ambiguity in the media, they have the spirit of questioning, can find problems and put forward problems, and make reasonable decisions on the basis of inquiry and rational thinking;
Problem-solving capability (Dc)	Can give play to the subjective initiative, can actively participate in the media activities Movement, so as to use various skills and experience to solve problems.

Results

The official version of the self-made scale Questionnaire on Media literacy Status of Chinese College Students has designed 39 test items, and each sub-dimension is 3 test items. Formal questionnaire before issuing questionnaires on a large scale, A small-scale questionnaire survey was conducted first, 60 prediction questionnaires were distributed, 58 met after removing the unqualified questionnaires, Combining the 58 samples into the digits of 27 and 73, The seven dimensions were tested by T verification of high and low groups, The test result shows that the p-value of all questions is less than 0.05 is significant, High and low subgroups were significantly different, Representative test items have a certain degree of discrimination and need to be retained, After the prediction, the questionnaire was distributed through the online questionnaire, After the subsequent identification and screening of the 800 recovered questionnaires, After removing the invalid questionnaires, The number of 788 valid questionnaires available, The recovery rate was 98 percent.

1, reliability, convergent validity and discriminative validity tests

Table 2 shows: The former investigators generally believe that Std. Values greater than 0.6 are acceptable, and SMC above 0.3 represents the topic reliability; CR above 0.7 indicates sufficient internal consistency between dimensions, and AVE is basically above 0.5, indicating good convergence validity between dimensions.

Therefore, the topic reliability and inter-dimensional convergence validity of this model are better.

Table 2 Data table for reliability and convergence validity detection

dimension	Subdimension	title	factor loading	Subject reliability	Composition reliability	Convergence validity	
			Std.	SMC	CR	AVE	
cognitive ability (A)	Aa1	1	.865	.748	.904	.653	
		2	.742	.541			
		3	.845	.714			
	Ab	1	.733	.537	.873	.632	
		2	.805	.648			
		3	.827	.674			
	Ac	1	.788	.621	.894	.610	
		2	.831	.591			
		3	.727	.684			
	Ad	1	.819	.671	.854	.660	
		2	.804	.646			
		3	.815	.654			
ability of communication (B)	Ba	1	.865	.748	.904	.633	
		2	.442	.551			
		3	.845	.714			
	Bb	1	.733	.537	.873	.532	
		2	.805	.648			
		3	.827	.684			
	Bc	1	.788	.621	.894	.580	
		2	.831	.691			
		3	.827	.674			
	Emotional ability (C)	Ca	1	.733	.537	.873	.552
			2	.805	.648		
			3	.827	.684		
Cb		1	.788	.621	.894	.510	
		2	.731	.691			
		3	.827	.684			
Cc		1	.719	.671	.854	.623	
		2	.704	.642			
		3	.815	.664			
ability of practice (D)		Da	1	.865	.748	.904	.653
			2	.742	.551		
			3	.845	.714		
	Db	1	.788	.641	.894	.680	
		2	.731	.691			
		3	.827	.684			
	Dc	1	.719	.671	.823	.640	
		2	.804	.636			
		3	.715	.664			

As shown in Table 3, the diagonal bold character is the AVE open root number value, and the lower triangle is the Pearson correlation and average of the dimension. The standard deviation is shown in the table: the AVE open root value of all dimensions is greater than the correlation between dimensions and other dimensions, representing the differential validity between dimensions and dimensions.

Table 3 Correlation coefficients between the square root of the AVE and the latent variables

dimensi on	Differential validity				Descriptive statistics	
	A	B	C	D	average value	standard deviation
A	0.808				5.49	.969
B	.476	0.795			5.03	1.077
C	.690	.558	0.824		5.21	1.067
D	.784	.540	.761	0.812	5.36	.982

2, model fitting and analysis of hypothesis testing results

In this study, the model fit was calculated through AMOS24.0 version. Table 4 shows that all the measured fit index values are within the suggested value range, so the model fits the sample data well, and the model has a good fit.

Table 4 Results of the goodness of fit index of structural models

Fitting the index	Acceptable recommendations	The values fitted to this model
Chi-square values and degrees of freedom (Chi-square / df)	1—5	1.40
Approximation error root (RMSEA)	<0.05—0.08	0.04
Specification goodness of fit index (NFI)	>0.9	0.91
Non-canonical fit indicator (NNFI)	>0.9	0.93
Model comparison fit (CFI)	>0.9	0.96
Value-added fitting index (IFI)	>0.9	0.98
Goodness of fit index (GFI)	>0.9	0.92

Conclusion and Recommendations

Through the questionnaire survey of 800 college students in Beijing-Tianjin-Hebei region, received 788 questionnaires, effective efficiency is 98%, and the survey results with exploratory factors analysis quality diagnosis, based on sample scale KMO value is 0, and Bartlett spherical test the corresponding p value is less than 0, two values are within a reasonable range, shows that the data is suitable for exploratory factor analysis..977.0001

In this study, Amos 24.0 software was used to test the fit degree of the model. Considering that the chi-square χ^2 (Minimum Fit Functional Chi G square) values of the absolute fit index are susceptible to the sample size, therefore, Some scholars suggest that the ratio of the chi-square value to its degree of freedom as a standard, Supplement the goodness of fit index (GFI), standard fit index (NFI), increased fit index (IFI), and comparative fit index (CFI), Its values range between 0-1, The closer to the 1, the better, The root mean square (RMSEA) of the approximation error should be less than 0.05, The smaller the better (Bagozzi & Yi, 1988).

Goodness of fit index (Goodnessof Fit Index, GFI) and adjusted goodness of fit index (Adjusted Goodness of Fit, AGFI). GFI and AGFI reflect the proportion of covariance that can be explained by the hypothesis model, and the greater the goodness of fit index, the higher the degree of the independent variable to the dependent variable, the higher the change caused by the independent variable as the percentage of the total change.

It is generally believed that GFI and AGFI greater than 0.9 indicate a high degree of fit between the model and the data, so it can be considered that the model fits the sample data well, and the model has a good fit and can perform the next operation.

This study tries to find an evaluation tool for the media literacy of Chinese college students, which has practical significance in exploring the ways to improve the media literacy of Chinese college students. The questionnaire on media literacy of Chinese college students consists of 39 items, 4 large dimensions and 13 sub-dimensions. According to the actual situation of college students' media literacy in this research, a valid and representative questionnaire was investigated, tested and analyzed as suggested by experts.

References

- Chen Xiaoyu, Zhang Wei. (2018). Media literacy status and improvement strategies of Chinese college students. *Educational Development Research*. 34 (5), 22-30.
- Wang Lulu, Li Ming. (2020). Research on college students' online moral education based on media literacy. *Modern Educational Technology*. 30 (2), 45-52.
- Li Ting, Liu Yong. (2017). Research on the evaluation index system of college students' media literacy. *Modern Communication*. 39 (3), 112-120.
- Zhang Hui, Zhu Yan. (2019). Construction and empirical research on the media literacy evaluation system of college students. *College Education Research*. 40 (6), 78-86.
- Yang Mei, Wang Peng. (2016). Research on the media literacy evaluation system of college students based on multiple intelligence theory. *Journal of Educational Assessment*. 28 (8), 62-71.
- Wang, M. (2018). Media literacy status and improvement strategies of Chinese university students. *Journal of Educational Development*. 34 (5), 22-30.
- Li, X., & Zhang, R. (2020). Research on network ethics education for college students based on media literacy. *Modern Educational Technology*. 30 (2), 45-52.
- Liu, P. (2017). Research on the evaluation index system of media literacy for college students. *Modern Communication*. 39 (3), 112-120.
- Zhang, L., & Chen, H. (2019). Construction and empirical research of the evaluation system of media literacy for college students. *Journal of Higher Education Research*. 40 (6), 78-86.
- Zhao, H. M., & Liu, Q. (2016). Research on the evaluation system of media literacy for college students based on multiple intelligence theory. *Journal of Educational Measurement and Evaluation*. 28 (8), 62-71.