

Study on the Relationship Between College Undergraduates' Addiction to Webcasting and Their Loneliness*

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Abstract—This paper aims to explore the relationship between undergraduates' network communication and loneliness from the perspective of watching live webcasts in combination with previous studies. It focuses on the driving effect of loneliness on the level of network communication. The study used questionnaires to select the UCLA Loneliness Scale (Third Edition) and the Undergraduates Network Communication Questionnaire (IIQUS), with 500 students from Wuhan as the research object. An analytical method of product difference correlation and hierarchical regression is used in the data analysis. The study finds that the level of network communication between undergraduates and the sense of loneliness is significantly positively correlated. Loneliness has a significant driving effect on the level of network communication among undergraduates. For undergraduates who watch online live broadcasts for more than 2 hours a day, they tend to choose online communication when they feel strong loneliness.

Keywords—network communication; loneliness; correlation analysis; regression analysis

I. INTRODUCTION

A. Research Background

Loneliness reflects a closed psychological environment of human beings, which is an emotional experience of an individual who feels certain isolation between himself and others. This experience will become more apparent in the case of external exclusion. Under normal circumstances, the short-term existence of loneliness is regarded as a normal phenomenon, and does not have a serious impact on the individual's mental health level, while long-term loneliness may cause disorder of psychological behavior and lead to certain psychology obstacle. The existence of loneliness will produce a vicious circle of individual social relations. Because the isolation between the individual who produces loneliness and others increases, the sociality weakens, and this increase and weakening will deepen the experience of

individual loneliness. The long-term existence of this experience will have a serious impact on the physical and mental health of the individual.

With more and more audiences on the web, the level is more and more extensive. Due to the enthusiastic attention of undergraduates, webcasting has become an important part of undergraduates' social networking. Different from traditional network communication methods, the timeliness of online live broadcast is strong, and the amount of information transmitted is larger, which has an impact and influence on the network communication mode of undergraduates. Exploring the relationship between undergraduates' network communication and loneliness from the perspective of webcasting can supplement the previous research to certain extent.

B. Research Purpose

- It provides basic data and information for educators and psychologists.
- While objectively examining the "webcasting boom", correctly understanding the psychological appeals of undergraduates in online socialization, it has certain practical significance for guiding undergraduates to objectively balance online socialization and real social interaction.
- It lays the groundwork and reference for in-depth research by educators and psychologists.

II. RESEARCH PROCESS

A. Research Methods

This paper adopts the literature search method, comparative analysis method and questionnaire survey method. In the process of using the mature questionnaire to conduct the survey, summarizing and comparing the existing research results is conducive to draw constructive conclusions.

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B. Research Object

Students from the first to the fourth year of the 19- to 23-year-old undergraduate colleges in Wuhan were selected as a group. A total of 500 questionnaires were distributed and 473 questionnaires were returned. The questionnaires with an average of 2 hours or more of live webcasts per day were set as valid questionnaires, and 324 valid questionnaires were obtained. The questionnaire recovery rate was 94.6%, and the questionnaire efficiency was 64.8%.

TABLE I. DEMOGRAPHIC VARIABLES

Demographics	Classification	Number	Percentage
Gender	Male	206	63.3%
	Female	118	36.4%
Professional	Literature and history	130	40.2%
	Science and engineering	194	59.8%
Origin	Urban	268	82.7%
	Rural	56	17.3%

C. Research Tools

1) *Measurement of loneliness*: The "UCLA Loneliness Scale (Third Edition)" prepared by Russell (1988) was used as a questionnaire for loneliness. "The questionnaire consists of 20 items, each of which has 4 grades. Among them, 9 items are scored in reverse order. The higher the score obtained by the tester, the higher the degree of loneliness. The internal consistency coefficient of the questionnaire is 0.94, which is more mature, application range is wide, reliability and validity meet the requirements of the psychological scale [1]."

2) *Measurement of the level of network interaction*: The Network Communication Questionnaire used the "Undergraduates Network Communication Questionnaire (IIQUS)" compiled by Ping Fan et al. of institute of political science and law of Central China Normal University. The questionnaire consists mainly of 26 entries, each with a 5-level rating, including 4 dimensions. Its four dimensions are: network interaction dependence, network self-disclosure, network interpersonal relationship, and network social self-perception. Two of the entries are scored in reverse order, and the higher the score, the higher the social level of the network. At the same time, the questionnaire has good reliability and validity and meets the requirements of the psychological scale [2].

D. Research Procedures

SO JUMP and manual questionnaires were used to conduct separate testing methods. The university students

independently answered the two questionnaires from "UCLA Loneliness Scale (Third Edition)" and "College Students Network Communication Questionnaire (IIQUS)". The data obtained were statistically processed, processed and analyzed by SPSS20.0 software.

III. RESULTS AND ANALYSIS

A. Demographic Variable Analysis

As shown by "Table I", this study selected three variables: professional, student and gender from the effective subjects. The results show that, from the perspective of professionalism, among the undergraduates of science and engineering and literature and history, the number of students of science and engineering who watched the webcast for more than 2 hours per day was more, but the overall difference was not significant. From the perspective of students, the proportion of college students who lived in the city and watched the Internet for 2 hours per day reached 82.7%, which was significantly higher than that of rural students. From a gender perspective, such college students are mostly male, probably because the live content is mainly dominated by male preferences. However, according to the results of this study, the proportion of female college students has increased significantly. This shows that the issue of watching webcasts for female college students is also worthy of attention.

B. Relevant Analysis

According to the relevant analysis in "Table I", the sense of loneliness is positively correlated with social self-perception of the network, and the correlation coefficient is 0.148. And at the 0.01 significant level, loneliness was significantly correlated with the online social self-perception score. The correlation coefficient between loneliness and network self-disclosure was 0.162, which was positively correlated. And at the 0.01 significant level, loneliness was significantly correlated with the online self-disclosure score. The correlation coefficient between loneliness and network interaction dependence is 0.153, which is positively correlated. And at the 0.01 significant level, loneliness was significantly correlated with the network interaction dependence score. The correlation coefficient between loneliness and network interaction total score is 0.234, which is positively correlated. And at the 0.01 significant level, loneliness was significantly correlated with the total score of network interaction. The correlation between loneliness and online interpersonal relationships is not significant. This shows that the loneliness of college students is positively correlated with the level of network communication, that is, the more loneliness, the higher the level of network communication.

TABLE II. ANALYSIS OF THE CORRELATION BETWEEN COLLEGE STUDENTS' SOCIAL NETWORK LEVEL AND LONELINESS

Variate	Loneliness	Network Social Self-Perception	Network Self-Disclosure	Network Interpersonal Relationship	Network Interaction Dependence	Network Communication
loneliness	1	0.148**	0.162**	0.012	0.153**	0.234**

^a. ** p<0.01

The loneliness of college students is positively correlated with the level of network communication. That is, the more loneliness, the higher the level of network communication.

C. Hierarchical Regression Analysis

Correlation analysis shows that there is a significant positive correlation between college students' online communication level and loneliness. In order to make it more clarified, regression analysis is used to try to explain the driving influence of loneliness on network interaction. Using the level of network communication as a dependent variable, stratification and demographic variables (gender, place of origin, major) were used as independent variables for hierarchical regression analysis. The analysis results are shown in "Table III" and "Table IV".

TABLE III. REGRESSION ANALYSIS OF COLLEGE STUDENTS' NETWORK COMMUNICATION LEVEL

Procedure	Network Communication β	P
gender	0.049	0.939
origin	0.103	0.715
major	-0.228	0.899
R2	0.000**	0.000

a. **p<0.01

TABLE IV. REGRESSION ANALYSIS OF COLLEGE STUDENTS' NETWORK COMMUNICATION LEVEL AND LONELINESS

Procedure	Network Communication β	P
gender	- 0.073	0.352
origin	-0.065	0.631
major	-0.280	0.125
loneliness	0.282**	0.000
R2	0.055**	0.000
R2 increases	0.055	

a. **p<0.01

In the first step, the demographic variables (gender, origin, and major) were analyzed in the stratified regression analysis. The data showed that the three did not have a significant impact on network interaction. Subsequent to the variable of loneliness, the results showed that the variate loneliness had a significant positive impact on network interaction at the level of 0.01 significance. The normalized regression coefficient was 0.282 ($p < 0.01$) and the R2 increment was 0.055. That is to say, at the level of three demographic variables of gender, origin, and major, there is no significant difference in the level of network communication among college students. On the level of loneliness, the level of loneliness is different from the driving force of college students' network communication. For college students who watch online live broadcasts for an average of 2 hours a day, the higher their level of loneliness, the more they tend to choose online communication. This choice is less affected by its gender, profession, and origin than the proportion of loneliness. Therefore, loneliness has a significant driving effect on the level of network communication among college students. For college students who watch online live broadcasts for more than 2 hours a

day, they will tend to choose online communication when they feel high loneliness.

IV. DISCUSSION

A. Gender Differences: Female College Students Have Increased Compared to the Past

In this study, when analyzed the demographic variables it was found that the gender ratio of college students watching online live broadcasting has changed. According to a survey conducted by Peng Jin in the article "Serious Thinking under the Internet Lives", the proportion of college students watching live webcasts is 81% for male and 19% for female [3]. The proportion of female groups in this survey has a significant increase.

The analysis found that the live broadcast mode dominated by games and female anchors has been constantly adjusted with the development. Live content such as makeup, dance, weight loss, etc. for female groups has gradually emerged. The increase in the female group in this survey may be due to changes in the live broadcast structure, and this value may continue to change as the live broadcast industry changes in the future.

B. Differences in Student Origin: Urban College Students Account for a Much Larger Proportion Than Rural College Students

In the course of the survey, the demographic analysis of college students who watched the online live broadcast for more than 2 hours per day was found to be partially different from previous studies in the origin and gender dimensions. Especially in the dimension of origin, the proportion of such students in urban students is much higher than that of rural students.

The survey found that urban college students are more interested in understanding new things, and they hope to keep up with the trend, mostly because watching live webcasts is a trend. At the same time, they have a higher synchronization rate in simulating the language style of the anchor and behavioral actions or dressing. In the process of investigation, rural college students expressed that they are mostly interested in relaxing and entertainment, and they are more willing to choose traditional communication methods such as Weibo and QQ.

C. College Students with High Loneliness Are More Willing to Reveal Themselves When Watching Live Webcasts

In the webcast, the psychology of seeking identity is an important way to construct the subjectivity, which can improve the sense of belonging, including the same dialect, similar growth experience and environment, and the same profession. For the audience, the "protagonist" on the Internet is more intimate than the stars. Although they have a greater influence on cyberspace, they still have the same status as ordinary people in real life. It is precisely because of their ordinary identity in ordinary real life that the psychological distance between the anchor and the audience

is invisibly reduced. In this close relationship, college students are often more willing to communicate and share.

Compared with text, voice and pictures, webcasting is a highly ornamental platform. Most of the content that is being disseminated is an interesting video. Watching live or video on the Internet platform has made people boring for a time. Many viewers find sustenance in the virtual space of the network in order to solve the boring and troubles, and gain a sense of belonging and companionship. As a result, college students are more willing to use this sense of belonging and companionship as a substitute for peer relationships, thus making more self-disclosure.

D. College Students with High Loneliness Are More Likely to Have Network Interaction Dependence When Watching Live Webcasts

This study shows that the communication between the audience and the anchor during the live broadcast of the live broadcast, the exchange between the barrages can make the audience feel a sense of belonging to interpersonal communication. Especially in the communication with the anchor, the audience is often in it, and the sense of substitution is extremely strong to meet the needs of their interpersonal relationships. In the process of communication with the barrage, due to the classification mechanism of the live webcast, most people with similar interests are gathered together, and it is easier for people to find common ground. This is also the advantage of webcasting at the level of interpersonal communication. Because there are few "aggregates" in real life, there will be higher dependence on college students with high loneliness.

At the same time, individuals living in social groups tend to shape themselves as beautiful to others. In the online social mode of webcasting, viewers and anchors are affected by this demand. For example, whether the own barrage receives a reply from the anchor, whether the anchor receives the gift and appreciation of the follower. Their self-respect and expectations of themselves were echoed and satisfied by the anchor, and they believed that they were recognized and satisfied the needs of self-confirmation. It is for this reason that college students, as a larger audience for webcasting, are more willing to engage in social activities in such an environment to meet their own interpersonal needs. Especially in reality, for college students with poor interpersonal relationships and a sense of loneliness, the emotional experience expressed in past words can no longer fully meet their needs for social support. Webcasting, a more concrete and stimulating way of networking, has become a better choice.

E. High Loneliness and High Level of Network Communication Are Prone to a Vicious Circle

The existence of loneliness will produce a vicious circle of individual social relations. That is to say, because of the sense of loneliness, the gap between the individual and others is increased, and the sociality is decreased, and this increase and decrease will deepen the experience of individual loneliness. The long-term existence of this kind of

experience will have a serious impact on the physical and mental health of the individual. There are two ways to relieve loneliness: one is the self-regulation of college students; the other is the grooming and related treatment of others. Once a college student finds that he has a tendency to be lonely, he should be soberly told himself: "Put yourself in the cage of being alone, and get only loneliness instead of happiness." College students should be brave and open to the door and window of the soul, step out of the self and actively participate in social activities. Therefore, in addition to watching the live webcast, the interaction with friends and classmates may reduce the alienation of the actual interpersonal relationship caused by excessive use of the network, thereby reducing the negative emotional experience. Augmented reality interpersonal relationships and reduced levels of loneliness can reduce the negative experience of loneliness.

F. High-intensity Viewing of Live Webcasts Has the Characteristics of Clustering

The effective questionnaire in this study counted college students who watched the online live broadcast for more than 2 hours per day, but found a small number of individuals who watched 6-8 hours per day during the data collection process. These individuals were interviewed informally in the later stages of the study and then found that webcasting existed as a necessity for recreation in their daily lives. The live webcast replaces the mainstream online entertainment methods such as watching TV series, movies, and microblogging. At the same time, their outdoor entertainment time is almost replaced by watching live webcasts. "If you don't have anything to do, you can open the live broadcast to watch the live broadcast." "What live content is all viewed," and most of these individuals hold this view.

At the same time, in the course of the investigation, it was found that such individuals have the characteristics of clustering, mainly in the bedroom, and usually communicated on the topic of live broadcast. The level of loneliness in their bedroom is low. This phenomenon may be mainly due to the popularity of the university dormitory network, while leisure time is more than high school, and college students are easy to sit around. If college students in the same dormitory have no clear goals for university life and are easily driven by others, it is easy for a dormitory to watch webcasting as a common interest. In this way, their loneliness does not increase significantly, but when such a group is dismantled, the change in the level of loneliness will be reflected.

G. Loneliness Plays a Significant Role in Driving Online Communication

This study analyzes the correlation between the dimensions of network communication and the level of loneliness of college students who watch online live broadcasts for an average of more than 2 hours per day. The results show that in the network communication of such college students, each dimension has a very significant positive correlation with loneliness, which is consistent with

previous research, and it is assumed that individuals with high loneliness are more likely to choose network communication.

The research analyzes the regression between the level of network communication and loneliness of such college students. The results show that loneliness has a significant driving influence on the level of college students' network communication. In other words, individuals with poor interpersonal relationships and greater loneliness may be more dependent on online interactions, which may be related to less social support they receive. This has practical guiding significance for college students' online activities, and can help high loneliness college students out of a vicious circle from the perspective of social support.

V. CONCLUSION

A. Conclusions

The emergence of webcasting has broken the previous situation of network communication limited to friends, and broke the past "star" unreachable state, which has narrowed the distance between the general public and them. Combined with data analysis and discussion, the following conclusions were drawn:

- There are differences in origins in the choice of webcasting as the main mode of network communication. There are more people in urban colleges than rural college students who choose webcasting as the main method of network communication.
- The gender differences in college students watching webcasting are showing a downward trend.
- Relevant analysis results show that network social perception, network self-disclosure, network interaction dependence and network communication are all significantly positively correlated with loneliness.
- Hierarchical regression shows that demographic variables (gender, origin, major) are not significant factors affecting the level of college students' online communication. Further analysis found that loneliness is a significant factor affecting the level of college students' network communication.
- Loneliness has a significant driving effect on the level of network communication among college students. For college students who watch online live broadcasts for more than 2 hours a day, they will tend to choose online communication when they feel high loneliness.

B. Limitations of the Study

1) *Limitations of the study sample:* This survey is difficult to cover all college students at all grades, genders, origins, and majors. It can only be done as much as possible. Especially at the level of origins, only some universities in Wuhan can be investigated.

2) *Limitations of research topics:* Since the research is cut from the perspective of webcasting, and the webcast involves multidisciplinary content such as computer science, sociology, psychology, and marketing, its development is changing with each passing day. Many old data are not very applicable, and the research results are greatly affected by time.

C. Outlook and Recommendations

Loneliness is an unpleasant psychological experience and a common emotional experience for human beings. The right way of interpersonal interaction helps to resolve the negative experience of loneliness. The study of loneliness will not stop, and the following aspects may have some implications for future research:

- Loneliness as a relatively implicit emotional experience, the results obtained by means of questionnaire measurement are not stable, and on some issues, the participants themselves are difficult to make judgments. Sometimes the participants are still immersed in recalling past emotional experiences, then make unintentional false answers due to self-protection mechanisms. If biological measurement is adopted, the cost is high and it is not easy to implement on a large scale, the future research on loneliness should be based on that can be better quantified.
- The current UCLA Loneliness Scale is the primary measure of loneliness. However, for the social level of the network, because the scope of social networking is relatively wide, the questionnaire to some extent, the control of the psychological experience of the participants still stays on the reality of loneliness experience. If the loneliness experience in the social networking process wants to be measured specifically, it also needs to be able to have a more targeted questionnaire as a basis.
- Loneliness is more than just a psychological experience. It is also a product of society and education. Therefore, in the study of loneliness, the influence of education and society cannot be abandoned. More attention should be paid to how to provide theoretical support to social groups and educators, thereby reducing the incidence of loneliness and helping to improve the overall well-being of society.

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