Research on User's Willingness to Pay for Educational Content Based on the ELM

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Abstract: This article uses the elaboration likelihood model (ELM) as the foundational theoretical framework to comprehensively analyze various factors that affect the behavior of users paying for educational content in the central and peripheral pathways. This study fills the gaps in research perspectives and systems from the past and expands the application areas of the elaboration likelihood model. From a practical perspective, the research results of this paper partially address the series of problems in knowledge payment, provide feasible suggestions to enhance user stickiness of educational content payment platforms. Furthermore, the research results can also promote the high-quality development of the content payment industry and provide support for economic recovery after the pandemic.

1. Introduction

Internet users can access a large amount of free knowledge online, but as the times develop, information technology advances, and the growth of mass consumption levels, users are no longer satisfied with readily available free knowledge on the internet, but rather tend to choose higher-quality knowledge, making it possible for users to actively pay for knowledge, thus promoting the emergence of Educational content payment [1]. With the maturity of science and technology, Educational content payment emerged in 2016. With the emergence of IKP platforms such as Himalaya FM and Zhihu Live, the user base of Educational content payment grew rapidly, and the rise of online education such as live streaming also demonstrates the broad prospects of online education and knowledge payment, especially in recent years under the epidemic, the demand for paid online education is increasing. However, there are some problems that urgently need to be solved in the operation of Educational content payment platforms. Most platforms face problems such as high costs and low profits, low user stickiness, inadequate experience, and low repurchase rate. Therefore, how Educational content payment platforms can solve these problems, how to improve platform construction and create higher quality products with knowledge producers to meet user needs, and how to improve consumer experience and increase customer satisfaction and repurchase rate are the research questions this study aims to solve.

Currently, there are significant limitations in the research on user behavior in Educational content payment. First, previous studies assumed that users' Educational content payment behavior

could be fully evaluated, which is inconsistent with the real situation. Therefore, the issue of how to solve the problem of uneven quality of online platforms should be given greater attention. Second, user behavior in Educational content payment platforms is influenced by multiple factors, but previous research on the influencing factors of users' payment intentions on online education platforms has mostly only considered individual factors, lacking a systematic analytical framework for the factors influencing users' payment intentions. Finally, there is no consensus on the effects of the influencing factors on users' payment behavior in online education platforms, and there is still no clear understanding of the behavior within the scope of Educational content payment. Therefore, it is urgent to introduce a new perspective to systematically analyze users' behavior in Educational content payment and to improve user satisfaction with Educational content payment platforms.

The elaboration likelihood model (ELM) is a dual-route theory of consumer attitude formation and change. Based on the depth and amount of information processing, the model categorizes information receivers into central and peripheral routes. The central route involves careful examination of information related to the issue, deep thinking, and judgment based on memory and experience to form evaluation and attitude. The peripheral route involves indirect and superficial thinking, often relying on other environmental features related to the information to form evaluation. Consumers can use the peripheral route of information as heuristic clues, and then evaluate based on the central route of information to make a decision on whether to pay for knowledge.

The elaboration likelihood model provides a theoretical framework for analyzing the phenomenon of educational content payment. Research on user behavior of educational content payment based on this model is conducive to in-depth analysis of the differences and influencing factors of platform users' willingness to pay for knowledge under different information paths. Therefore, based on the elaboration likelihood model, this article comprehensively analyzes the factors that influence user behavior of educational content payment from both the central and peripheral routes, filling gaps in previous research perspectives and lack of systematicity, and expanding the application fields of the elaboration likelihood model. Practically, the research results of this article can not only solve a series of problems existing in knowledge payment to a certain extent, provide feasibility suggestions for enhancing user stickiness for educational content payment platforms, but also promote the high-quality development of the knowledge payment industry and facilitate economic recovery.

2. Model and hypothesis

This article constructs the elaboration likelihood model of educational content payment, which consists of both the peripheral and the central routes. The peripheral route is related to the credibility of the source and is some peripheral clues unrelated to the specific content of the paid product, including online user evaluation, promotion, and teacher background. The central route is related to the quality of the knowledge payment argument and is measured through the quality of the paid product content. In the peripheral route, online user evaluations have a positive impact on consumer purchasing intentions, and the negative impact of negative evaluations is significantly greater than that of positive evaluations. Moreover, promotion and teacher background also have a positive effect on consumer purchasing intentions. In the central route, the quality of instructional content can affect the acceptance of education content payment products by paying users through practicality and interest. In addition, personalized teaching, teaching interaction, and product service guarantee can positively influence the acceptance of education content payment products by paying users.

2.1. The effect of central route on user willingness to pay on educational content

2.1.1. Content quality

Content quality refers to the educational significance and practical value of the education knowledge products introduced by the online platform, which is highly related to the teaching ability of the educator and the core concept of the platform, and is an important factor influencing paying user behavior. Usually, instructional content quality can be measured by practicality and interest.

Practicality of educational content refers to the perception and judgment of users on whether the product is helpful when searching for the products they need on educational content payment platforms. It affects users' utility evaluation and corresponding attitudes towards online platforms through the practicality of the educational content, the comprehensibility of the teaching method, and the fit with expected learning objectives [2].

Interest of educational content refers to the evaluation of the pleasure users feel while experiencing educational content payment products. Learning is already a boring activity, adding interest to learning can greatly increase the efficiency and initiative of learning. Its interest can be reflected in the infectiousness of the platform interface appearance, the liveliness of the educational product classroom, the interesting and concrete understanding of knowledge during teaching, the interestingness of the language style of the teaching teacher, and the interest generated by users' deep understanding of knowledge after learning, and so on.

It can be inferred that once users affirm the practicality and interest of the educational content, they can obtain practical and interesting utility satisfaction in learning educational content payment products. This satisfaction is likely to promote individuals to think and pay more attention to the knowledge received, and then relate abstract theoretical knowledge to their own practices. Based on this, this study proposes the hypothesis:

H1: The content practicality have a positive impact on users' willingness to pay on educational content.

H2: The content interest have a positive impact on users' willingness to pay on educational content.

2.1.2. Personalized teaching

Personalized teaching refers to the education platform providing courses that match users' needs and unique characteristics based on their personalized features, rather than generic mass courses. Under normal circumstances, most people tend to choose personalized courses, even if the price may be higher, they value a more efficient learning experience. Online education platforms provide courses and teachers that match the individual's characteristics, such as ability, personality, interests, career planning, and economic situation, to fully satisfy the paying users' experience. Research shows that learning in a controllable and optimistic environment can improve the user's thinking activity and facilitate more thinking collisions. Based on this, this study proposes the hypothesis:

H3: Personalized teaching have a positive impact on users' willingness to pay on educational content.

2.1.3. Interactivity

Interactivity refers to the interaction between educational content and paid users when imparting knowledge. Compared to traditional online education, this concept emphasizes whether individuals can obtain knowledge that meets their needs on the paid platform, whether they can truly engage in the classroom, interact deeply with teachers and students, and learn happily. This can be judged

through post-sale feedback received by the product. In the interaction between teachers and students in the classroom, it will promote understanding between them. Teachers will understand the blind spots in students' knowledge and provide more targeted solutions. Similarly, users can also satisfy their need for attention and deepen their understanding of knowledge through interaction, enhancing their sense of participation in the classroom. Relevant data in this study show that compared to platforms with low instructional interactivity, paid users are more inclined towards online education platforms with strong instructional interactivity, which makes educational knowledge more concrete, easy-to-understand, and meets users' sense of participation, thus improving their satisfaction. Based on this, this study proposes the hypothesis:

H4: Interactivity have a positive impact on users' willingness to pay on educational content.

2.1.4. Product and service guarantee

The purchase of online education products is different from online shopping. Users are not just making a simple purchase. They usually attach great importance to the actual value of the course and hope to get a comprehensive return that matches their price and effort [3]. When choosing paid products, users will pursue product reliability and tend to choose products with higher added value and more comprehensive after-sales service systems. Nowadays, most online education platforms not only launch educational products but also sell behind-the-scenes high-quality services, such as personal course planning, answering questions after class, supervision, psychological counselling, and guarantee services, to create a more comfortable paid experience and stimulate users' willingness to pay. The after-sales guarantee service of the product will affect users' consumption experience and repurchase rate, affect perceived value, and further affect users' willingness to pay. Based on this, this study proposes the hypothesis:

H5: The product and service guarantee have a positive impact on users' willingness to pay on educational content.

2.2. The effect of peripheral route on user willingness to pay on educational content

2.2.1. Online user comments

User comments refer to people's personal opinions on the platform or application software based on their usage experience. The better the experience, the higher the user's evaluation of the platform or application software. Compared to the traditional platform reputation that is passed on through word of mouth, online user comments have the advantages of objectivity, credibility, effectiveness, accuracy, and timeliness. In short, online user comments have increased the sharing of information among many consumers, thereby greatly reducing the information asymmetry between merchants and consumers [4]. This also makes the role of user comment factors in user purchase decisions increasingly prominent. For example, in the laptop section of the Pacific Computer Network, many consumers will go to the website to check the evaluation results given by relevant professionals and the usage evaluations of purchased users before buying a certain model [5]. Therefore, this study believes that:

H6: Online user comments have a positive impact on users' willingness to pay on educational content.

2.2.2. Advertising

Nowadays, content payment platforms are emerging one after another, and the market competition is becoming increasingly fierce. Having high-quality products and services is far from enough for a platform or application software. Only with good advertising can a platform or

software win user attention. When the audience comes into contact with advertising information, whether the information is closely related to the individual, whether it is necessary to give detailed attention to the information, and whether there is a possibility of giving detailed attention to the information will all affect users' consumption decisions [6]. When the advertising is in place, and the user's demand fits the advertisement, the user is more willing to consume the product. Therefore, this study believes that:

H7: Advertising has a positive impact on users' willingness to pay on educational content.

2.2.3. Teacher background

When consumers are not able to evaluate the products of content payment platform, teacher background is more likely to influence the consumer's choice. Because the teacher's background to some extent reflects the content and quality of the product. Taking the offline tutoring class "Star Education" as an example, many parents of primary and secondary school students will prioritize this tutoring institution when choosing a tutoring class. This is not because they have enough knowledge of the institution but because most of the tutoring teachers in this institution have strong educational background and rich educational experience. Therefore, this study believes that:

H8: Teacher background has a positive impact on users' willingness to pay on educational content.

3. Survey and data analysis

This study provides substantial suggestions for users, platforms, and the entire educational content payment industry by investigating the effects of central and edge path factors on user willingness to pay through questionnaire surveys. In the questionnaire production process, we first designed questions based on existing classic scales and then modified questionnaire questions based on the background of the research topic. In the information collection stage, we distributed questionnaires through the internet, first invited friends, classmates, and relatives to collect user information from different ages, professions, and regions, and then used "questionnaire mutual assistance" on the internet to improve the collection of information data. The questionnaire was in the form of a "network questionnaire," which was published on the internet, not limited by time and space, thus obtaining more data information, making the data more scientific and reasonable.

The survey showed that more than half of the people have purchased online knowledge content products, and the popularization rate is relatively high; however, the proportion of people who have not purchased online knowledge content products is also significant, accounting for 40.21%. Therefore, relevant online knowledge platforms can increase their publicity, improve their exposure and popularity, and let more people understand the professionalism and convenience of knowledge payment and its platforms.

3.1. Factor analysis

By conducting factor analysis, a "users' willingness to pay" factor was extracted from the four measurements related to payment willingness. Variable communality represents the degree to which the original information contained in each variable can be explained by the common factors extracted. The communality of all variables in this factor is above 80%, indicating that the few common factors extracted have strong explanatory power for the variables, and that the design of the scale is effective. The variance contribution rate is 84.350%, indicating that this factor explains over 80% of the original variable information.

Further analyze the independent variables by factor analysis. In the KMO test, the value is

0.904 > 0.9, indicating that it is very suitable for factor analysis; the significance value of the Bartlett test is 0.000, indicating that the data comes from a normal distribution population and is suitable for further analysis. Through factor analysis, two factors were extracted from content practicality, content interest, personalized teaching, interactivity, product and service guarantee, user comments, advertising and teacher background. According to the differences in the influencing factors covered by them, they were named "central path factor" and "peripheral path factor". The communality of all variables is above 70%, indicating that the few common factors extracted have strong explanatory power for each variable (i.e. central path factors and peripheral path factors). The variances of these two factors account for 76.560% of all principal component variances, indicating that these two factors can replace the original variables and cover most of the information of the original variables.

3.2. Regression analysis

This study used regression analysis to investigate the impact of central path factors and peripheral path factors on users' payment willingness respectively. The adjusted R-square is 0.542, indicating that the model fit is average but within an acceptable range. The model significance is less than 0.000, indicating that the model results are valid.

In the model, the intercept is -1.769, with a t-value of -9.283 and significance of 0.000. The standardized coefficient of the central path factor is 0.705, with a t-value of 8.476 and significance of 0.000. The standardized coefficient of the peripheral path factor is 0.054, with a t-value of 0.649 and significance of 0.518 > 0.5. Therefore, in this model, the intercept and central path factor are significant, while the peripheral path factor is not significant.

In summary, users' willingness to pay = -1.769 + 0.705 * central path factor+ 0.054 * peripheral path factor. The central path factor has a significant and positive effect on users' willingness to pay, while the positive effect of the peripheral path factor on users' willingness to pay is not significant.

Table 1: Coefficient A.

Model		The standardized coefficient	t	Sig.	Collinearity Statistics	
		Beta			Tolerance	VIF
1	(intercept)		-9.283	.000		
	central path factor	.705	8.476	.000	.575	1.738
	peripheral path factor	.054	.649	.518	.575	1.738

The regression analysis has shown that users primarily consider the central path factor in their payment decision, while the peripheral path factor plays a secondary role. The data analysis results confirm the applicability of ELM theory in the educational content payment field and support the hypotheses H1-H5, but suggest that hypotheses H6-H8 are not significant enough, as shown in Table 1.

4. Conclusions

Educational content payment has significant importance in the rapidly developing era, and all social groups can enjoy corresponding conveniences through it, with a wide audience. However, there are still many development issues, as mentioned in this paper, such as high substitutability, with a large amount of high-quality free knowledge available online making consumers less inclined to choose paid products. In addition, there are many educational content payment platforms with varying qualities, trustworthiness, and low cost-effectiveness, with rampant false advertising, making it difficult for consumers to select the products they really need. In this case, consumers with higher knowledge levels tend to make rational choices for payment of educational content

through the central path, supplemented by peripheral path factors. Consumers with lower knowledge levels or lower discernment mainly rely on peripheral path factors to determine the credibility of the goods and services. Based on the current difficulties faced by educational content payment products, businesses should continuously innovate and launch more personalized high-quality products tailored to different people, so that consumers of different professions, ages, and genders can enjoy better payment experiences and reduce product substitutability. Strengthening after-sales service and providing consumers with a sense of reassurance throughout the process is also important. At the same time, increasing the promotion and highlighting differentiated selling points can attract more potential customers. In addition, businesses should pay attention to the protection of intellectual property rights, effectively stopping paid courses from being leaked or spread, and reducing the possibility of potential consumer loss. Market supervision departments should also conduct regular network supervision to purify the online trading market, crack down on pirated courses, and help the long-term and steady development of educational content payment products.

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