

Research on College Students' Willingness to Use Online Resources and the Effect of Using Them under the Theory of Uses and Gratifications

Fang Jin

School of Network Communication, Zhejiang Yuexiu University, Shaoxing, China
Email: 20042008@zyufl.edu.cn

How to cite this paper: Jin, F. (2024). Research on College Students' Willingness to Use Online Resources and the Effect of Using Them under the Theory of Uses and Gratifications. *Open Journal of Social Sciences*, 12, 1-18.

<https://doi.org/10.4236/jss.2024.1211001>

Received: October 10, 2024

Accepted: October 28, 2024

Published: October 31, 2024

Copyright © 2024 by author(s) and Scientific Research Publishing Inc.
This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

With the rapid development of information technology, online learning platforms have become an important channel for college students to acquire knowledge. Based on the theory of "Uses and Gratifications", this study explores college students' willingness to use online learning platforms and their effects of using them, taking the example of students' use of Zhihuishu platform in the course of Selected English Newspapers and Periodicals 1 in Zhejiang Yuexiu University. The data were collected through questionnaires and analyzed by Ordered Logit Regression Model, and the results of the study showed that students' overall satisfaction, weekly usage time and frequency of using Zhihuishu platform were significantly positively correlated with their academic performance and professional knowledge mastery. This supports the Uses and Gratifications Theory, which states that students choose to use the Zhihuishu platform based on their personal needs, and that they learn better when those needs are met. The study also found that students' attitudes toward using the platform directly influenced their usage behavior, which in turn significantly influenced their learning outcomes. Based on these findings, the study proposes recommendations for optimizing the online resources including improving user satisfaction, increasing interaction and engagement, optimizing the user interface, improving technical support, improving content quality and search capabilities, and encouraging duration and frequency of use, with the goal of further improving student learning effectiveness and satisfaction.

Keywords

Uses and Gratifications Theory, Zhihuishu Platform, Online Learning,

1. Introduction

With the rapid development of information technology and the popularization of the Internet, the education field has gradually ushered in the era of online learning. According to the “2023 Global Digital Report” by Hootsuite, over 4.9 billion people use the Internet, with 93% of the global population having access to mobile networks, indicating a significant shift towards digital education platforms. Zhihuishu platform, as one of the leading online education platforms in China, has received widespread attention and application as it provides students with rich learning resources and convenient learning methods. However, whether the use of online learning platforms really meets the learning needs of students and how effective the use is, are still the questions worth exploring.

The specific discipline of the college students was chosen based on the comprehensive curriculum offered by Zhejiang Yuexiu University, which provides a diverse range of subjects and a large student population, thus offering a representative sample for this study. By systematically exploring the relationship between students’ willingness to use Zhihuishu platform, their usage behaviors and their learning effectiveness, this study not only enriches the empirical research on the theory of Uses and Gratifications in the field of educational technology, but also reveals the intrinsic motivation of the user behaviors of the online learning platforms and new perspectives on the evaluation of the effectiveness of the platforms. In particular, this paper provides new insights into how students choose to use Zhihuishu based on their personal needs and how these needs affect their learning effectiveness through quantitative analysis. In addition, this study identifies key factors affecting students’ willingness to use and learning effectiveness, which provides theoretical guidance and practical basis for the design and optimization of online education platforms, reflecting the dual strengths of this study in terms of theoretical exploration and practical application.

In current college education, innovation and reform of course teaching is an important task. In order to improve the teaching effect and students’ learning experience, more and more schools and educational institutions have begun to try to introduce online learning resources to enrich classroom teaching content and enhance students’ learning interest and ability. However, there is a lack of systematic research and in-depth discussion on students’ willingness to use online learning platforms and how effective they are.

Therefore, this study aims to investigate the willingness of college students to use Zhihuishu platform and the effect of using Zhihuishu platform under the Satisfaction Theory by investigating and analyzing the use of Zhihuishu platform online resources in the course of Selected English Newspapers and Periodicals 1 in Zhejiang Yuexiu university. The specific objectives include: a) to understand

students' awareness and willingness to use the Zhihuishu platform; b) to explore the problems and challenges that students may face when using the Zhihuishu platform; c) to analyze students' attitudes and behavioral characteristics towards the use of the Zhihuishu platform; and d) to assess the effectiveness and efficacy of students' learning through the Zhihuishu platform.

Through the conduct of this study, not only can we gain an in-depth understanding of the needs and expectations of college students for online learning platforms, provide reference and suggestions for relevant educational reforms, but also provide theoretical support and practical guidance for the optimization and development of online learning platforms, which has certain theoretical and practical significance.

2. Literature Review

2.1. Overview of Zhihuishu

Zhihuishu is one of the leading online education platforms in China, providing students with rich and diverse learning resources and a personalized learning experience.

The platform covers course content in a variety of subject areas, including language learning, vocational training, test preparation, etc., covering students of all ages and learning stages from primary school to higher education. The Zhihuishu platform adopts a variety of teaching modes, such as video lectures, online interactions, personalized recommendations, etc., providing students with a convenient and flexible way of learning, which has been widely welcomed and applied.

2.2. Uses and Gratifications Theory

Uses and Gratifications Theory (UGT), is used to explain the relationship between the degree of satisfaction an individual obtains when choosing and using a particular medium and the frequency of its use. The theory suggests that people consider the characteristics of the medium itself and the degree to which it satisfies their needs when choosing and using a specific medium (Guo, 2011). UGT divides media use into two stages: the first stage is the decision and selection stage, in which individuals choose whether to use a medium based on the characteristics of the medium and their own needs; and the second stage is the gratifications and effects stage, in which individuals evaluate the effectiveness and value of a medium based on whether it satisfies their needs after using it.

UGT focuses on why individuals actively choose a particular medium and derive satisfaction from it. In the context of the Zhihuishu platform, students may use the platform's resources for different needs (e.g., to acquire knowledge, to improve skills, for entertainment, for socialization, etc.), and the degree to which these needs are satisfied influences their attitudes toward the platform use (Karaođlan Yılmaz, 2021). Positive attitudes toward use lead students to adopt more effective use behaviors, such as deep engagement and active exploration, which improve learning outcomes (Gu & Meng, 2020). Meanwhile, students continuously evaluate

the level of satisfaction and adjust their use strategies during the use process, creating a dynamic interaction between use attitudes and behaviors and learning effectiveness.

2.3. Research Applications of UGT in the Field of Education

In the field of education, UGT is widely used to assess the impact of educational media on students' learning outcomes. Many researchers have explored the relationship between the degree of fulfillment of students' learning needs and learning effects of different educational media through surveys and empirical studies. [Hu Yiqing and Zhang Jingyan \(2016\)](#) found that the use of multimedia teaching methods can improve students' learning interest and comprehension, thus promoting the improvement of learning effects. They pointed out that multimedia teaching can deliver information through various ways such as images, sounds and texts, helping students to better understand and remember the content of knowledge. [Donnelly \(2004\)](#) explored the impact of personalized services of online learning platforms on students' learning outcomes. They found that online learning platforms are able to better meet students' individualized learning needs and improve motivation and performance through personalized learning paths and recommendation systems. These findings suggest that the way educational media are designed and used has an important impact on students' learning outcomes, and UGT provides theoretical support and practical guidance for evaluating and optimizing educational media ([Cai & Liu, 2004](#)).

Other researchers have paid attention to the impact of the interactive features of online learning platforms on students' learning outcomes ([Hu, 2017](#)). [Huang \(2021\)](#) found that the discussion forums and online Q&A features of online learning platforms can promote communication and cooperation among students, and improve students' motivation and learning outcomes. They pointed out that students can better understand and apply knowledge through participation in discussions and interactions, and improve their learning effectiveness and satisfaction with learning. [Du Yugai \(2024\)](#) analyzed the various aspects of the Uses and Gratifications model, and put forward a practical strategy to enhance the effectiveness of ideological and political education: identifying and activating needs, providing educational resources, measuring satisfaction, and providing a comprehensive and effective strategy to improve the effectiveness of ideological and political education. [Wang Min \(2023\)](#) analyzed the effectiveness of college students' social media learning based on the theory of Uses and Gratifications, and then analyzed the path of improving the effectiveness of college students' social media learning under the motivation of knowledge demand, and then obtaining the knowledge of social media. Based on the theory of Uses and Gratifications, we analyze the effectiveness of "use" of social media learning in college students under the motivation of knowledge demand, and then obtain the process of knowledge "Gratifications".

Through the literature review, it is understood that the research and application of the Uses and Gratifications Theory in the field of education involves the

selection, use and evaluation of the effects of educational media, which provides important theoretical support and practical guidance for educational reform and teaching practice (Chen, 2006). Through in-depth research on the characteristics of educational media and students' learning needs, educational media can be better designed and optimized to improve students' learning effects and learning experiences (Lim & Morris, 2009). Meanwhile, in the field of education, teachers can use this theory to understand students' learning needs and design appropriate teaching strategies to meet students' needs.

3. Methodology

3.1. Participants

The respondents of this study are 328 junior and senior students of Zhejiang Yuexiu University who select or have taken the course of Selected English Newspapers and Periodicals 1 (Table 1). This course is offered in the first semester of the junior year. As one of the important foreign language elective courses in the university, the course covers journalism professional knowledge, characteristics of English newspapers and magazines, reading comprehension and analysis, etc. It is an important link for students to improve their professional level of the discipline and comprehensive English ability.

Table 1. Demographic information of participants ($n = 328$).

Gender
Male (153)
Female (175)
Year of college
Junior (261)
Senior (67)
Field of study
Communication (109)
Fashion Communication (47)
Journalism (79)
Digital Media of Technology (40)
Network and New Media (53)
Experiencing years of online learning
1 (0)
2 (263)
3 (63)
4 (2)

3.2. Questionnaire Design

The questionnaire of this study was designed according to the theory of “Uses and Gratifications” in communication, aiming at exploring students’ use of the online resources on the Zhihuishu platform of the Selected English Newspapers and Periodicals 1 course and their degree of satisfaction with the resources. The 30-question questionnaire consists of three main parts:

The first part is a survey about students’ use of the existing resources on the Zhihuishu platform for the course Selected English Newspapers and Periodicals 1, including use behaviors and use attitudes. For the existing resources on the Zhihuishu platform, including podcast resources, PPT resources, literature resources, microclass resources, teacher-student interaction area, students’ excellent homework display area, online test resources, homework assignment area, test bank, test paper area, etc., students were asked whether they had used them as well as the frequency of use and attitudes towards use.

The second part is about the evaluation of students’ satisfaction and learning effectiveness of the course resources on the Zhihuishu platform. According to the theory of “Uses and Gratifications”, evaluating students’ satisfaction with the resources directly explores the effectiveness of using the resources (Vo et al., 2017). Students need to evaluate the satisfaction level of the resources in terms of quality, usability, usefulness, and interactivity.

The third part is about the evaluation of students’ online learning experience of the course in the Zhihuishu platform. Students evaluated their level of satisfaction with the online learning experience based on the resources available on the platform and explored the effectiveness of the resources from the side.

The questionnaire was reviewed and pre-surveyed by 60 students to ensure the reasonableness and credibility of the questionnaire. To ensure the validity of the questionnaire, a Likert 5-point scale was used in order to provide an objective and accurate evaluation of students’ satisfaction with the resources.

3.3. Data Analysis Methods

The questionnaires were distributed through the online questionnaire platform Questionstar and were filled in by all students after the teacher explained the content of the questionnaire. A total of 372 questionnaires were returned in the formal survey (April 2024), with 328 valid questionnaires and an effective recovery rate of 88%. The collected data were organized and coded using Ordered Logistic Regression Model to analyze and assess how various factors influence students’ perceptions of the impact of the Zhihuishu platform on their academic performance. The model was applied to situations where the dependent variable was ordered categorical, such as students’ satisfaction ratings (very dissatisfied, dissatisfied, neutral, satisfied, and very satisfied). The model’s assumption is the proportional odds assumption, which means that the respective variables have a relatively consistent effect on the dependent variable between different levels, and its key outputs include coefficients, standard deviations, z-values, and p-values

(Greene & Hensher, 2010).

The correlation analysis of platform use was used to explore the relationship between students' satisfaction with the resources and their use, as well as the factors that may influence the use of the resources (Liu, 2021). This analysis can provide insights into students' Uses and Gratifications with the resources of the Zhihuishu platform (Strelan et al., 2020), and provide data support and reference suggestions for further exploration of resource optimization and instructional improvement.

4. Analysis of College Students' Willingness to Use the Zhihuishu Platform

In this study, the "Uses and Gratifications" theory is used to explain the motivation of college students to use the Zhihuishu platform and the satisfaction they get from it.

4.1. Ordered Model Analysis Results

According to the Uses and Gratifications Theory, students actively seek out resources that satisfy their specific needs, and they use them in order to obtain some form of satisfaction. In the context of the Zhihuishu platform, students may use the platform for a variety of reasons, including acquiring knowledge, improving learning efficiency, satisfying curiosity, or socializing.

Table 2 and **Table 3** present the results of the Ordered Model analysis of attitudes and behaviors towards the use of the Selected English Newspapers and Periodicals 1 course on the Zhihuishu platform and their influencing factors on academic performance and professional knowledge acquisition. These tables quantify and analyze multiple variables to explore the impact of different factors on students' academic performance. **Table 2** analyzes the impact of these factors on academic performance, while **Table 3** analyzes the impact on professional knowledge mastery. These two analyses provide both an understanding of which factors play a positive role in student learning outcomes and which may be constraining factors, as well as a detailed understanding of the impact of different usage attitudes, behaviors, and factors on academic performance and professional knowledge mastery, and can therefore help course platforms and course designers to identify areas that need to be improved in order to enhance student learning outcomes (Guolla, 1999). If the coefficients of certain variables are significantly positive and have a small p-value, it means that these factors have a significant positive impact on learning outcomes or professional knowledge acquisition, and can be emphasized in future instruction and platform optimization. Conversely, if the coefficients of certain variables are negative and significant, then consideration needs to be given to how to reduce the negative impact of these factors on learning (Liu et al., 2013). Through such targeted improvements, the needs of students can be better met and the overall quality of education can be enhanced.

Table 2. Results of ordered model analysis using attitudes, behaviors, and factors on academic achievement.

Variable	Coefficient	Standard Error	Z-Value	P > z	[0.025	0.975]
Q11 Do you have a strong intention to use the online resources for the course “English Newspapers and Periodicals Reading 1” on the Zhihuishu platform?	-4.5148	13.488	-0.335	0.738	-30.951	21.921
Q14 Do you think the Zhihuishu platform for “English Newspapers and Periodicals Reading 1” is helpful for your learning?	0.8088	0.478	1.691	0.091	-0.129	1.746
Q15 What is your overall satisfaction with the Zhihuishu platform for “English Newspapers and Periodicals Reading 1”?	1.4022	0.526	2.666	0.008	0.371	2.433
Q16 Would you actively recommend other students to use the online resources of “English Newspapers and Periodicals Reading 1” on the Zhihuishu platform?	0.0509	0.599	0.085	0.932	-1.124	1.226
Q17 Do you actively participate in the discussion area interaction when using the online resources of “English Newspapers and Periodicals Reading 1” on the Zhihuishu platform?	-0.1806	0.322	-0.561	0.575	-0.811	0.450
Q18 Have you been affected by issues such as network environment and device compatibility in the normal use of the online resources of “English Newspapers and Periodicals Reading 1” on the Zhihuishu platform?	-0.2589	0.355	-0.729	0.466	-0.955	0.437
Q20 What do you think of the content quality of the Zhihuishu platform for “English Newspapers and Periodicals Reading 1”?	0.2877	0.417	0.690	0.490	-0.530	1.105
Q26 How satisfied are you with the user interface of the Zhihuishu platform?	-0.7044	0.394	-1.786	0.074	-1.477	0.068
Q27 Do you think the search function of the Zhihuishu platform is convenient and easy to use?	0.0770	0.356	0.216	0.829	-0.620	0.774
Q6 If you have used the Zhihuishu platform for “English Newspapers and Periodicals Reading 1”, how well do you understand it?	0.3450	0.366	0.942	0.346	-0.373	1.063
Q7 Have you ever used other course platforms on Zhihuishu?	0.8087	0.752	1.075	0.282	-0.666	2.283
Q8 How long have you been using the Zhihuishu platform?	0.8947	1.860	0.481	0.630	-2.750	4.539
Q10 Are you influenced by others in deciding to use the Zhihuishu platform?	0.2351	0.434	0.542	0.588	-0.615	1.085
Q21 How much time do you spend on the Zhihuishu platform for “English Newspapers and Periodicals Reading 1” on average per week?	0.5907	0.337	1.750	0.080	-0.071	1.252
Q22 How frequently do you use the Zhihuishu platform for “English Newspapers and Periodicals Reading 1”?	0.4766	0.248	1.920	0.055	-0.010	0.963
Q28 Have you encountered any problems when using the Zhihuishu platform? (e.g., slow loading speed, content errors, etc.)	-0.3332	0.420	-0.794	0.427	-1.156	0.489
Gender	-0.5576	0.409	-1.364	0.173	-1.359	0.244
Year of college	-0.8252	1.867	-0.442	0.658	-4.484	2.833
Field of study	-0.0724	0.168	-0.430	0.667	-0.402	0.257

Table 3. Results of ordered model analysis of the effects of using attitudes, behaviors, and factors on professional knowledge acquisition.

Variable	Coefficient	Standard Error	Z-Value	P > z	[0.025	0.975]
Q11 Do you have a strong intention to use the online resources for the course “English Newspapers and Periodicals Reading 1” on the Zhihuishu platform?	-0.5989	0.847	-0.707	0.479	-2.258	1.06
Q14 Do you think the Zhihuishu platform for “English Newspapers and Periodicals Reading 1” is helpful for your learning?	0.5205	0.283	1.839	0.066	-0.034	1.075
Q15 What is your overall satisfaction with the Zhihuishu platform for “English Newspapers and Periodicals Reading 1”?	0.6011	0.353	1.701	0.089	-0.092	1.294
Q16 Would you actively recommend other students to use the online resources of “English Newspapers and Periodicals Reading 1” on the Zhihuishu platform?	0.6765	0.515	1.313	0.189	-0.333	1.686
Q17 Do you actively participate in the discussion area interaction when using the online resources of “English Newspapers and Periodicals Reading 1” on the Zhihuishu platform?	-0.1434	0.257	-0.558	0.577	-0.647	0.36
Q18 Have you been affected by issues such as network environment and device compatibility in the normal use of the online resources of “English Newspapers and Periodicals Reading 1” on the Zhihuishu platform?	447	0.237	1.882	0.06	-0.018	0.912
Q20 What do you think of the content quality of the Zhihuishu platform for “English Newspapers and Periodicals Reading 1”?	1.0421	0.272	3.827	0	0.508	1.576
Q26 How satisfied are you with the user interface of the Zhihuishu platform?	0.1196	0.285	0.42	0.674	-0.438	0.677
Q27 Do you think the search function of the Zhihuishu platform is convenient and easy to use?	0.4616	0.244	1.894	0.058	-0.016	0.939
Q6 If you have used the Zhihuishu platform for “English Newspapers and Periodicals Reading 1”, how well do you understand it?	0.0488	0.233	0.209	0.835	-0.409	0.506
Q7 Have you ever used other course platforms on Zhihuishu?	0.3502	0.565	0.62	0.535	-0.756	1.457
Q8 How long have you been using the Zhihuishu platform?	1.1888	0.778	1.527	0.127	-0.337	2.714
Q10 Are you influenced by others in deciding to use the Zhihuishu platform?	0.4219	0.29	1.456	0.145	-0.146	0.99
Q21 How much time do you spend on the Zhihuishu platform for “English Newspapers and Periodicals Reading 1” on average per week?	0.6557	0.221	2.971	0.003	0.223	1.088
Q22 How frequently do you use the Zhihuishu platform for “English Newspapers and Periodicals Reading 1”?	0.2227	0.206	1.08	0.28	-0.181	0.627
Q28 Have you encountered any problems when using the Zhihuishu platform? (e.g., slow loading speed, content errors, etc.)	-0.0854	0.286	-0.298	0.765	-0.646	0.475
Gender	0.1428	0.285	0.501	0.616	-0.415	0.701
Year of college	0.1152	0.843	0.137	0.891	-1.537	1.767
Field of study	-0.0937	0.113	-0.829	0.407	-0.315	0.128

4.2. Awareness of Zhihuishu Platform

According to the analysis results of **Table 2**, **Table 3**, students' awareness of the Zhihuishu platform has no significant effect on their willingness to use it. For the variable Q6 in the model "If you have used the Smart Tree platform of Selected English Newspapers and Periodicals 1, how much do you know about it?" (coef = 0.3450, $p = 0.346$, **Table 1**) and Q7 "Have you ever used the Smart Tree platform for other courses?" (coef = 0.8087, $p = 0.282$, **Table 1**) did not reach the significant level. This suggests that students' initial knowledge of the platform and their experience with other courses did not significantly influence their willingness to use it. This may be due to the fact that students may not be aware of the functions and content of the Zhihuishu platform before using it, resulting in the level of awareness not having a significant effect on their willingness to use it. In addition, students' experience using the Smart Tree platform for other courses did not reach a significant level, although it had an effect on their willingness to use, probably because the differences between different course platforms led to this effect not being significant.

4.3. Influencing Factors of Willingness to Use

Through the lens of the "Uses and Gratifications" theory, the study found that students' overall satisfaction with the Zhihuishu platform is a key factor influencing their willingness to use it. According to the results of the model, the following factors have a significant influence on willingness to use:

a) Overall satisfaction (coef = 1.4022, $p = 0.008$): the higher the students' overall satisfaction with the Zhihuishu platform, the stronger their willingness to use it. This indicates that students' satisfaction with the platform during their use of the platform directly affects their willingness to continue using or recommending the platform. The ease of use, full functionality and user experience of the platform are all important factors affecting overall satisfaction.

b) Willingness to recommend (coef = 0.0509, $p = 0.932$): although this variable did not reach a significant level, willingness to recommend has a tendency to influence willingness to use. This means that when students are willing to recommend the platform to others, their willingness to use it is also relatively high. Increasing students' willingness to recommend can be achieved by increasing the interactivity and social features of the platform.

c) Learning help (coef = 0.8088, $p = 0.091$): although it does not reach a significant level, learning help has a strong trend of influencing the willingness to use. The learning resources and help provided by the platform are crucial to students' learning effectiveness. Adding learning resources with high utility and interactivity can enhance students' willingness to use.

d) Frequency of use (coef = 0.4766, $p = 0.055$): frequency of use also has a strong effect on willingness to use, but it does not reach a significant level. Students who use the platform frequently are more likely to become dependent on the platform, thus increasing their willingness to use. Encouraging students to use the platform

frequently and providing ongoing learning content and activities could increase frequency of use.

5. Analysis of the Effect of Using the Zhihuishu Platform

Based on the data results of the questionnaire survey, we analyze the effect of students' use of the Zhihuishu platform in the Selected English Newspapers and Periodicals 1 course. Specifically, the three aspects of usage attitude, usage behavior and learning effectiveness are discussed in detail.

5.1. Attitude Analysis

Based on the theory of "Uses and Gratifications", in the process of analyzing students' attitudes toward the Zhihuishu platform and the quality of the content, it was found that the quality of the content was the main factor affecting students' attitudes toward using the platform. The survey questions on the attitude of use include the willingness to use the course resources, the opinion on the learning assistance, the overall satisfaction, whether to recommend it to others, the participation in the discussion forum, and the problems encountered in the process of using the platform. According to the output of the Ordered Model, **Table 3**, students' attitudes toward the use of the Zhihuishu platform are closely related to their evaluation of the platform's content quality (coef = 1.0421, $p < 0.001$). Course resources with high content quality can increase students' interest and motivation in learning, thus improving their attitudes toward using it. In addition, the convenience of the search function (coef = 0.4616, $p = 0.058$) and the satisfaction of the user interface (coef = 0.1196, $p = 0.674$) also influenced students' attitudes toward use. From the ordered model analysis, willingness to use (Q11) was not significantly correlated with academic performance (coefficient = -4.5148, $p = 0.738$). Students who found the Zhihuishu platform helpful (Q14) may have better academic performance, but it did not reach a significant level (coefficient = 0.8088, $p = 0.091$). Satisfaction (Q15) is significantly and positively correlated with academic performance (coefficient = 1.4022, $p = 0.008$), indicating that the higher the level of satisfaction, the better the academic performance. Willingness to recommend (Q16), interactive participation in discussion forums (Q17), technical issues (Q18), content quality (Q20), and search function (Q27) were not significantly correlated with learning achievement (p-values of 0.932, 0.575, 0.466, 0.490, and 0.829, respectively). Finally, user interface satisfaction (Q26) may have a negative effect on academic performance, but it did not reach a significant level (coefficient = -0.7044, $p = 0.074$). As shown in **Table 1**: the coefficient values and significance (p-value) are used to illustrate the positive and negative effects of each question on academic performance and whether they are significant or not. The values on the horizontal axis are the coefficient values for each questionnaire question. The coefficient value reflects the magnitude and direction of the question's effect on academic performance. Positive values indicate positive correlation and negative values indicate negative correlation. Each row on the vertical axis is a brief description of a questionnaire question. Each question corresponds to a bar, and the

length of the bar represents the coefficient value for that question (Figure 1).

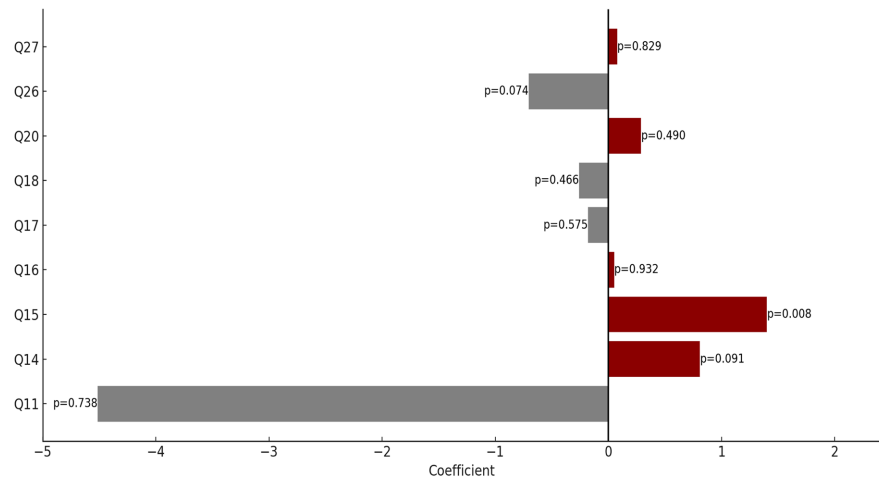


Figure 1. The impact of Zhihuishu platform usage factors on academic performance (with p-values).

Based on the results of the model analysis, it can be inferred that students' attitudes toward the use of the Zhihuishu platform are closely related to their evaluations of content quality, and that high-quality content can enhance students' interest and motivation in learning. In addition, the convenience of the search function and the satisfaction of the user interface also have a certain impact on the attitude of use. Although there is no significant correlation between willingness to use the platform and academic performance, satisfaction is significantly and positively correlated with academic performance, indicating that higher satisfaction helps students achieve better grades. Other factors such as willingness to recommend, discussion forum interaction, and technical problems had no significant effect on academic performance. Although user interface satisfaction may have a negative impact on academic performance, it did not reach a significant level.

5.2. Analysis of Usage Behavior

The survey questions in terms of usage behavior include whether or not they have used the Zhihuishu platform, the level of understanding, the length of use, the frequency of use, and problem feedback. Based on the output of the Ordered Model, the main findings are shown in Figure 2.

The results of Figure 2 below provide a partial understanding of students' usage behaviors, particularly their habits on the Smart Tree platform and their potential impact on academic performance. For example, the level of familiarity with the platform and the experience of using the platform in other courses did not have a significant effect on academic performance, suggesting that these factors may have less influence on students' learning behaviors or outcomes. This implies that students' familiarity with the platform or experience with other courses did not directly affect their performance in that course. Secondly the length of time spent

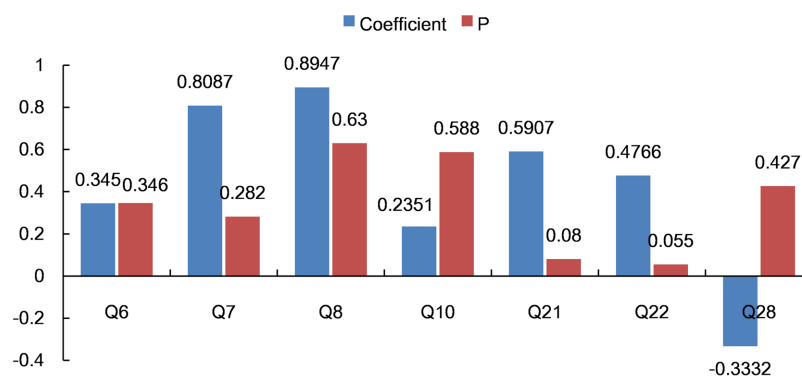


Figure 2. The relationship between the Use of the Zhihuishu Platform and Academic Performance.

on the platform and the extent to which they were influenced by others similarly had no significant effect on academic performance, suggesting that simply spending time on the platform or being recommended by others does not ensure better academic performance. In contrast, the amount of time students spend on the platform per week ($p = 0.080$) and the frequency of use ($p = 0.055$) are close to significant levels, suggesting that these variables may have some positive impact on academic performance. This suggests that there is a relationship between greater time commitment and frequent use and student achievement, which, although not meeting strict criteria for significance, could serve as a potentially positive factor in students' usage behavior. Finally, problems encountered during use did not have a significant effect on academic performance, suggesting that technical problems or operational difficulties may not be the primary cause of performance differences.

These data may reflect students' usage behavior: although the length and frequency of students' usage may be related to academic performance, the level of knowledge about the platform, the influence of others, or the problems they encountered did not significantly change their learning outcomes. Thus, students' usage behaviors were mainly focused on the amount of time invested and frequency of use, while other behaviors and factors had less impact on academic performance.

The analysis of usage behavior shows that the frequency and duration of students' use of the Zhihuishu platform are positively correlated with their academic performance, which is consistent with the idea that audiences actively choose media to satisfy their needs in the theory of "Uses and Gratifications".

5.3. Learning Effectiveness Analysis

The survey questions in the area of learning effectiveness included the impact on academic performance and professional knowledge acquisition (Vidić, 2021). According to the data output **Figure 2**, the quality of the platform content (coef = 1.0421, $p < 0.001$) is the main factor influencing learning effectiveness. Learning resources with high content quality can help students better understand and

master their knowledge and improve their learning effectiveness. In addition, the time of use (coef = 1.1888, $p = 0.127$) and the convenience of the search function (coef = 0.4616, $p = 0.058$) also have a significant effect on learning effectiveness. Students who have been using the platform for a long period of time usually make fuller use of the platform's resources, which leads to improved learning outcomes. The convenient search function can help students quickly find the resources they need and improve their learning efficiency.

The analysis of learning effectiveness shows that the high-quality content of Zhihuishu can meet the learning needs of students, thus improving learning effectiveness. This again proves the relevance of the theory of "Uses and Gratifications", that is, when the content can meet the needs of the audience, it is more effective to use.

5.4. Recommendations for the Future Utilization of Online Resources

Drawing from the findings of this study, several practical recommendations can be proposed to enhance the future use of online resources on the Zhihuishu platform:

Enhance user satisfaction. The analysis results show that there is a significant positive correlation between students' overall satisfaction with the platform and their learning achievements. Therefore, the platform should focus on user feedback and continuously improve the quality of course content and services to enhance students' satisfaction and thus their learning outcomes (Bennett, 2011).

Increase interaction and engagement. Although participation in discussion board interactions did not significantly affect learning outcomes, positive interactions help communication and knowledge sharing among students (Biggs, 1998). It is recommended that platforms enhance student engagement through incentives or designing more engaging interactive activities.

Optimizing the user interface. User interface satisfaction approaches a significant negative correlation, suggesting that interface design is critical to user experience. Platforms should regularly evaluate and optimize the interface design to ensure that it is simple, aesthetically pleasing, and easy to use, so as to avoid negatively affecting students' experience.

Improve technical support. Although technical problems have not significantly affected learning performance, good technical support is an important foundation to ensure smooth use. The platform should strengthen its support for the network environment, equipment compatibility and other aspects, and solve technical problems encountered by students in the process of using it in a timely manner, so as to ensure its normal use.

Improve the quality of content and search function. The quality of content and the convenience of search function have a significant positive impact on the mastery of professional knowledge. The platform should continue to improve the quality of course content to ensure the accuracy and timeliness of information. At

the same time, the search function should be optimized so that students can find the resources they need more conveniently and quickly.

Encourage time and frequency of use. The analysis shows that the time students spend on the platform each week and the frequency of use have a positive impact on their learning performance. Platforms can encourage students to increase the time and frequency of using the platform by setting up study plans and providing regular study reminders, thus improving their learning outcomes (UJum, 2021).

Regular training and support. To ensure students can fully leverage the resources offered by the platform, regular training and support should be provided. This assistance will help students become familiar with the platform's functionalities and how to utilize the resources effectively, improving their learning efficiency.

Through the implementation of the above recommendations, the Zhihuishu platform can further optimize the user experience, enhance students' learning effectiveness, and ultimately achieve better educational outcomes.

6. Conclusion

Students' overall satisfaction, average weekly use time and use frequency of the course of Selected English Newspapers and Periodicals 1 on the Zhihuishu platform have a significant positive effect on learning achievement and professional knowledge mastery, indicating that improving the satisfaction of the platform and increasing students' use time and frequency may enhance their learning effectiveness. At the same time, there is a close internal logical relationship between the attitude of use, use behavior, and learning effectiveness of college students in the use of online resources on the platform, which can be summarized as follows:

a) Attitude affects behavior: Students' attitude towards the online resources of English Newspapers and Periodicals 1 on the Zhihuishu platform directly affects their behavior. If students hold positive and satisfactory attitudes toward the platform (e.g., they think that the platform is rich in resources, easy to operate, and helps to improve learning efficiency), they are more likely to use these resources frequently and persistently for self-directed learning, which is manifested in higher frequency of use, longer study hours, and wider utilization of various types of resources (e.g., video tutorials, e-materials, discussion forums, etc.) (Asarta & Schmidt, 2017). Conversely, if students have a negative and dissatisfied attitude towards the platform (e.g., they perceive the quality of resources to be low, the stability of the platform to be poor, and the user experience to be poor), they may use it less or limit themselves to coping with the requirements of the course, and have a more passive use behavior.

b) Usage behavior affects learning effectiveness: Students' usage behavior in the Selected English Newspapers and Periodicals 1 course has a significant impact on learning effectiveness. Positive usage behaviors, such as visiting the platform regularly, making full use of various resources, and actively participating in discussions and interactions, helped students to deeply understand and master the

course content, broaden their knowledge horizons, improve their reading skills and vocabulary, and then enhance their English reading ability and cross-cultural communication awareness. These behaviors are often closely related to good study habits, self-driven motivation, and deep engagement with course content, which contribute to efficient and self-directed learning (Nair & Nair, 2021). On the contrary, negative or superficial use behaviors may lead to students' understanding of course content remaining at the surface, making it difficult to develop a systematic knowledge structure and solid language skills, thus affecting learning effectiveness.

c) Learning effectiveness reflects on attitudes: Students' learning effectiveness after using the online resources of English Newspapers and Periodicals 1 on the Zhihuishu platform will, in turn, shape or consolidate their attitudes towards the platform. When students feel that learning through the platform has indeed improved their English reading ability, increased their knowledge base, and improved their course grades, they will develop a higher level of recognition and satisfaction with the platform, further enhancing their willingness to continue to use it and recommend it to others (Bernard et al., 2014). On the contrary, if students perceive that the learning outcomes are not significant (e.g., limited improvement in reading ability, no improvement in final grades) despite their investment of time and effort, they may question the effectiveness and value of the platform, leading to a shift to a negative attitude toward using it, and may even reduce or abandon its use.

Through data analysis, it is found that a cyclic relationship of inter-relatedness and mutual influence is formed between the attitude of use, the behavior of use and the learning effectiveness of college students in the use of online resources on the Zhihuishu platform in the course English Newspaper Selected Reading 1. Positive attitudes stimulate effective use behaviors, which in turn produce good learning outcomes, and good learning outcomes further strengthen positive attitudes; conversely, negative attitudes may lead to inefficient use behaviors and poor learning outcomes, further weakening attitudes. Therefore, improving students' satisfaction with the platform, guiding them to form positive learning behaviors, and ensuring that the platform resources can effectively promote learning effectiveness are the keys to optimizing the allocation of online education resources and improving teaching quality.

Although this study provides valuable insights for understanding college students' willingness to use the Zhihuishu platform and its effectiveness, there are some limitations. First, the sample of the study was limited to students in specific courses at Zhejiang Yuexiu University which may limit the generalizability of the findings. Second, the study relied mainly on questionnaire data, which may have subjectivity bias. In addition, the study failed to explore in depth the influence of contextual factors, such as culture and socio-economic status on the willingness and effectiveness of use.

Future research can be expanded in the following ways: expanding the sample

to include students from different regions and disciplinary backgrounds to enhance the generalizability of the findings; combining qualitative research methods, such as in-depth interviews or case studies, to obtain more comprehensive information about students' usage experiences.

Acknowledgements

This paper is an achievement of 2020 Online and Offline Hybrid First-class Courses in Zhejiang Province—English Newspapers and Periodicals 1 (No. 507).

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

- Asarta, C. J., & Schmidt, J. R. (2017). Comparing Student Performance in Blended and Traditional Courses: Does Prior Academic Achievement Matter? *The Internet and Higher Education*, 32, 29-38. <https://doi.org/10.1016/j.iheduc.2016.08.002>
- Bennett, R. E. (2011). Formative Assessment: A Critical Review. *Assessment in Education: Principles, Policy & Practice*, 18, 5-25. <https://doi.org/10.1080/0969594x.2010.513678>
- Bernard, R. M., Borokhovski, E., Schmid, R. F., & Tamim, R. M. (2014). An Exploration of Bias in Meta-Analysis: The Case of Technology Integration Research in Higher Education. *Journal of Computing in Higher Education*, 26, 183-209. <https://doi.org/10.1007/s12528-014-9084-z>
- Biggs, J. (1998). Assessment and Classroom Learning: A Role for Summative Assessment? *Assessment in Education: Principles, Policy & Practice*, 5, 103-110. <https://doi.org/10.1080/0969595980050106>
- Cai, T., & Liu, W. (2004). Re-Exploration of the Uses and Gratifications Theory in Communication Studies. *Journal of Hunan Mass Communication Vocational and Technical College*, 1, 5-10.
- Chen, Y. H. (2006). "Uses and Gratifications" Theory and Scientific Audience Research Orientation. *Southeast Communication*, 10, 21-22.
- Donnelly, R. (2004). Investigating the Effectiveness of Teaching 'Online Learning' in a Problem-Based Learning Online Environment. In M. Savin-Baden, & K. Wilkie (Eds.), *Challenging Research into Problem-Based Learning* (pp. 50-64). Open University Press.
- Du, Y. (2024). The Effectiveness of Ideological and Political Education for College Students from the Perspective of "Uses and Gratifications". *Communication and Copyright*, 1, 100-102, 106.
- Greene, W. H., & Hensher, D. A. (2010). *Modeling Ordered Choices*. Cambridge University Press. <https://doi.org/10.1017/cbo9780511845062>
- Gu, M., & Meng, F. (2020). *New Concepts of International Education* (pp. 54-55). Educational Science Press.
- Guo, Q. (2011). *Tutorial on Communication* (2nd ed., pp. 51-52). China Renmin University Press.
- Guolla, M. (1999). Assessing the Teaching Quality to Student Satisfaction Relationship: Applied Customer Satisfaction Research in the Classroom. *Journal of Marketing Theory and Practice*, 7, 87-97. <https://doi.org/10.1080/10696679.1999.11501843>
- Hu, Y., & Zhang, J. (2016). Critique of Functionalist View of Communication: Revisiting

- the Use Satisfaction Theory. *Journalism University*, 1, 44-50, 86, 147.
- Hu, Z. (2017). Literature Review of Use and Fulfillment Theory. *Journalism Research Journal*, 8, 107.
- Huang, C. (2021). Exploring the Continuous Usage Intention of Online Learning Platforms from the Perspective of Social Capital. *Information*, 12, 141-142.
<https://doi.org/10.3390/info12040141>
- Karaođlan Yılmaz, F. G. (2021). An Investigation into the Role of Course Satisfaction on Students' Engagement and Motivation in a Mobile - Assisted Learning Management System Flipped Classroom. *Technology, Pedagogy and Education*, 31, 15-34.
<https://doi.org/10.1080/1475939x.2021.1940257>
- Lim, D. H., & Morris, M. L. (2009). Learner and Instructional Factors Influencing Learning Outcomes within a Blended Learning Environment. *Educational Technology & Society*, 12, 282-293.
- Liu, R., Shen, C., Xu, L., & Gao, Q. (2013). Children's Internet Information Seeking, Life Satisfaction, and Loneliness: The Mediating and Moderating Role of Self-Esteem. *Computers & Education*, 68, 21-28. <https://doi.org/10.1016/j.compedu.2013.04.019>
- Liu, X. P. (2021). *Introduction to Educational Statistics and Assessment* (3rd ed., pp. 46-50). Science Press.
- Nair, A., & Nair, K. R. (2021). Analysis of Student Satisfaction in the Current Online Teaching Scenario. *Journal of Engineering Education Transformations*, 34, 566-573.
<https://doi.org/10.16920/jeet/2021/v34i0/157214>
- Strelan, P., Osborn, A., & Palmer, E. (2020). Student Satisfaction with Courses and Instructors in a Flipped Classroom: A Meta - Analysis. *Journal of Computer Assisted Learning*, 36, 295-314. <https://doi.org/10.1111/jcal.12421>
- Ulum, H. (2021). The Effects of Online Education on Academic Success: A Meta-Analysis Study. *Education and Information Technologies*, 27, 429-450.
<https://doi.org/10.1007/s10639-021-10740-8>
- Vidić, T. (2021). Students' School Satisfaction: The Role of Classroom Climate, Self-Efficacy, and Engagement. *International Journal of Cognitive Research in Science, Engineering and Education (IJCRSEE)*, 9, 347-357.
<https://doi.org/10.23947/2334-8496-2021-9-3-347-357>
- Vo, H. M., Zhu, C., & Diep, N. A. (2017). The Effect of Blended Learning on Student Performance at Course-Level in Higher Education: A Meta-Analysis. *Studies in Educational Evaluation*, 53, 17-28. <https://doi.org/10.1016/j.stueduc.2017.01.002>
- Wang, M. (2023) Research on the Use and Fulfillment of College Students' Social Media Learning. *Journal of Hubei Open Vocational College*, 20, 41-43.