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An Examination of the Internet's Effects on College Students' Autonomous Learning Abilities

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Abstract: This paper analyzes the influence of the Internet on college students' autonomous learning ability through a questionnaire survey. It finds that students engage in online learning but their daily time investment is limited. The Internet provides rich learning resources but also brings challenges like distractions and lack of supervision. Social media notifications interfere with learning, while online communities have a positive impact. Strategies to enhance self-directed learning abilities are proposed.

Keywords: Internet Impact; Autonomous Learning; Influencing Factors.

1. Introduction

Autonomous learning ability, as an essential component of core competencies in the 21st century, emphasizes an individual's capacity to actively identify learning needs, set learning goals, choose learning strategies, monitor the learning process, and evaluate learning outcomes without external coercion. In the era of the internet, the abundance of information, ease of access, and immediacy of interaction offer unprecedented learning resources and conditions for college students. Yet, these advantages also bring challenges, such as information overload, distraction of attention, and insufficient learning motivation. Therefore, conducting an in-depth analysis of how the internet affects college students' autonomous learning ability is not only a theoretical issue but also a practical problem that urgently needs addressing.

2. Research Review

Previous studies have primarily focused on the following aspects. Firstly, they examined the characteristics and current status of college students' autonomous learning in the online environment. Song Quanhua et al. [1] proposed an autonomous learning model in a smart learning environment, which improved college students' learning outcomes, but did not cover all aspects of autonomous learning in the online environment. Li Yan et al. [2] identified problems in college students' autonomous learning when utilizing online resources through questionnaires, yet failed to propose specific solutions. Secondly, studies were conducted on the influencing factors of college students' autonomous learning in the online environment. Zhang Na et al. [3] analyzed the impact of the online environment on college students' autonomous learning abilities, highlighting its role in cultivating these abilities, but did not delve deeply into specific influencing factors. Tu Yuqiu[4] revealed the influence of mobile devices and learning resources on college students' autonomous learning and proposed enhancement strategies, yet did not conduct comparative analysis of autonomous learning among students of different majors. Thirdly, research was done on strategies to improve college students' autonomous learning in the online environment. Chen Wenfang et al. [5] analyzed problems related to online autonomous learning among students in higher vocational colleges and proposed enhancement strategies, providing useful references for them. However, their research did not cover students from other types of universities. Du Huanxia [6] explored cultivation pathways for college students' autonomous learning abilities in the Internet environment and proposed strategies to enhance information literacy and online learning abilities, but did not conduct empirical research on the implementation effects of these strategies.

In summary, these studies have achieved certain results, but there are still some deficiencies. Based on this, this paper intends to further deepen the research in the following aspects. Firstly, it will empirically analyze the specific influencing factors of college students' autonomous learning in the online environment. Secondly, it will delve into the effectiveness and feasibility of various enhancement strategies to provide more scientific guidance and support for college students' autonomous learning.

3. Questionnaire Design and Reliability

In order to comprehensively understand the impact of the internet on college students' autonomous learning, the questionnaire mainly involves the basic information of the respondents, learning behavior, learning attitude, learning resources, learning awareness, learning habits and self-control. The reliability of the pretest questionnaire is 0.786, and the validity is 0.821, which indicates that the questionnaire has good reliability and validity. After the questionnaire is revised and the reliability of the total and subscales is analyzed, the Cronbach's Alpha of the total scale is obtained. The value is 0.827, and the Cronbach's Alpha value of the subscale is between 0.763 and 0.870. This indicates that the scale has good internal consistency. In this survey, 380 questionnaires were distributed to some college students, and 373 questionnaires were collected, with a recovery rate of 98.1%. 360 valid questionnaires were obtained, and the effective rate of the questionnaire was 96.51%. This data processing was performed using SPSS22.0.

4. Analysis of Mobile Learning Survey Data

4.1. Analysis of College Students' Autonomous Online Learning

The survey data reveals that the majority of students spend relatively little time engaging in autonomous online learning each day. Specifically, one-third of students spend less than one hour per day on online learning, nearly half spend between one and three hours, and only a minority (17.78%) manage to dedicate three to five hours daily. This situation may stem from several factors. Firstly, students' schedules are tightly packed with classes, and pre- and post-class assignments and learning tasks already consume most of their time. Secondly, preparing for the College English Test Band 4 undoubtedly adds to their learning load. Thirdly, some students participate in extracurricular activities, which also take up part of their time and energy. Lastly, some students have to take part-time jobs to earn living expenses or gain work experience, further reducing the time they can allocate to autonomous learning.

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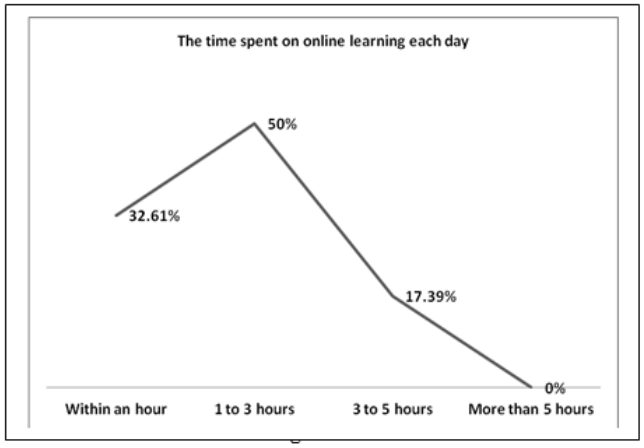


Figure 1. The time spent on online learning each day

In terms of resources for self-directed online learning, students mainly rely on online courses, with this proportion reaching as high as 75.56%, demonstrating the significant role of online courses in students' self-directed learning. Meanwhile, a considerable number of students (26.67%) choose to log into academic databases for academic research, which indicates their strong academic needs and exploratory spirit. Additionally, learning resources on social media have also been widely welcomed by students, with the proportion of students choosing this option reaching 71.11%. In contrast, the proportion of students selecting blogs, forums, and other community sharing platforms is slightly lower, but still accounts for 21.74%, showing a certain role of community sharing in acquiring learning resources.

Shown as figure 2.

4.2. The Impact of the Internet on College Students' Self-directed Learning

Regarding "The Impact of the Internet on College Students' Autonomous Learning," this study conducts a detailed analysis from six aspects. Firstly, it investigates the role of learning resources in promoting college students' autonomous learning. The results show that their advantages, from high to low, are abundant resources and convenient information access; flexible learning time and location; diversified learning methods; and strong interactivity, facilitating communication with classmates and teachers. From the ranking of the advantages of learning resources, it can be seen that students value the richness and convenient accessibility of resources, as well as the flexibility of learning time and location.

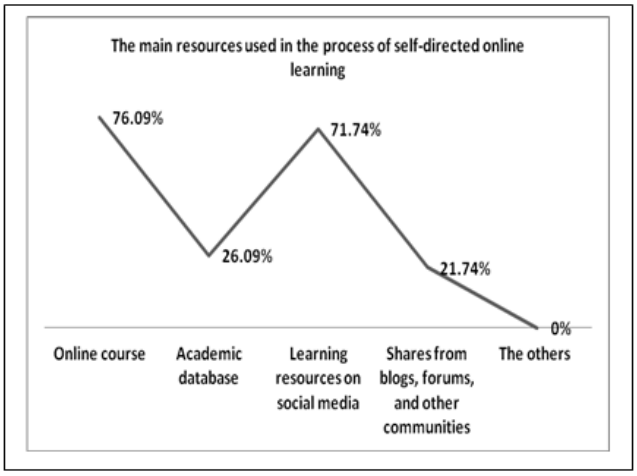


Figure 2. The main resources used in the process of self-directed online learning

Secondly, the survey reveals that students generally face multiple difficulties in the process of online autonomous learning. Among them, distractions in the online learning environment (such as advertisements and pop-up windows) are the most prominent issues, affecting 80.43% of students. At the same time, 63.04% of students mention the lack of effective learning supervision and feedback, indicating deficiencies in self-management and evaluation mechanisms. Information overload and difficulty in screening effective resources are troubles for 56.52% of students, highlighting the importance of information screening and processing abilities. Additionally, 39.13% of students report insufficient emotional communication with classmates and teachers, revealing the limitations of interpersonal interaction in the online environment. These problems collectively constitute the main obstacles in online autonomous learning and require attention and resolution.

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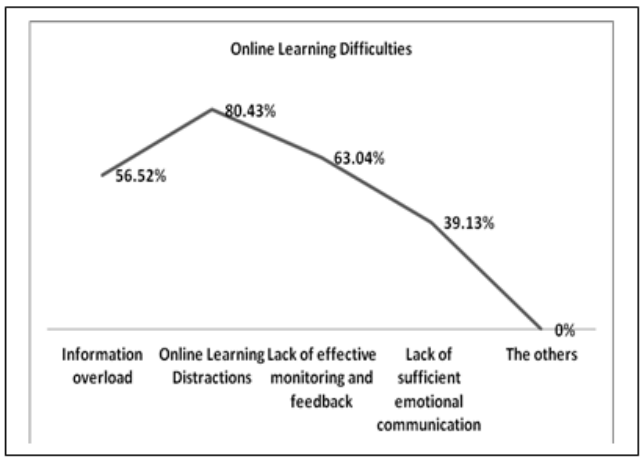


Figure 3. Online learning difficulties

Thirdly, the survey explores factors in the online environment that may interfere with autonomous learning.

The results, in order of interference intensity, are social media push notifications, online advertisements, online games, and unstable internet connections. It can be seen that among various interference factors, "social media push notifications" are the most prominent. This indicates that in the online environment, social media push notifications have become the most significant interference factor in the process of autonomous learning, surpassing other interference sources such as online advertisements, online games, and unstable internet connections.

Fourthly, regarding "whether students frequently participate in discussions in online learning communities or forums," the survey shows that half of the students occasionally participate in such discussions, and the vast majority (91.3%) of them believe that these discussions have a significant impact on their autonomous learning, reflecting the important role of online communities in facilitating discussion, exchange, and knowledge sharing for autonomous learning.

Fifthly, the survey reveals that the impact of the online environment on autonomous learning attitudes is complex and diverse. The majority (63.04%) of students believe that the online environment enhances their learning interest and motivation, indicating that the online environment plays a positive role in stimulating learning enthusiasm and promoting autonomous learning. However, a portion (19.57%) of students think that the online environment reduces their learning interest and motivation, which may be related to interference factors in the online environment, the quality of learning resources, or the adaptability of learning methods. When facing difficulties in online learning, the majority (67.39%) of students choose to seek help, reflecting their positive attitude towards addressing difficulties and seeking solutions. While 30.43% of students choose to solve problems by themselves, indicating that they possess certain self-adjustment and problem-solving abilities. Only a very small number (2.17%) of students choose to give up, suggesting that most students maintain a relatively positive mindset in online learning. In summary, the impact of the online environment on autonomous learning attitudes is dual-edged, but overall, its positive effects are more significant. At the same time, when facing difficulties in online learning, students mostly adopt a positive mindset and actions to address them.

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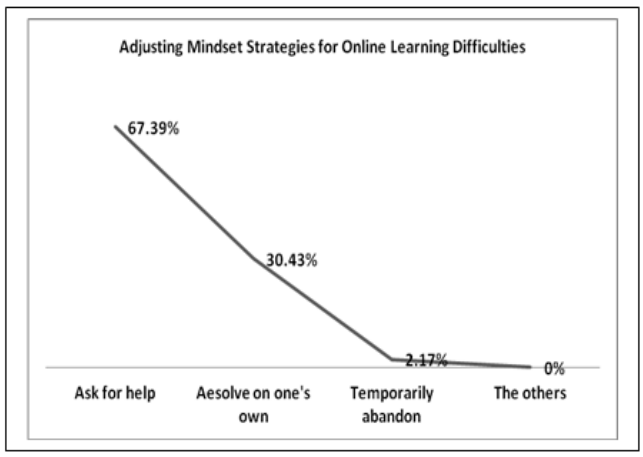


Figure 4. Adjusting mindset strategies for online learning difficulties

Sixthly, regarding the evaluation methods for learning outcomes in the online environment, the survey shows that, in order of preference, they are completing online tests or assignments, self-evaluation and reflection, participating in discussions in learning communities, and exchanging ideas with classmates or teachers. This indicates that in the online environment, students primarily evaluate their learning outcomes by completing online tests or assignments, while also attaching great importance to self-evaluation and reflection. Additionally, participating in discussions in learning communities and exchanging ideas with classmates or teachers are also important ways for students to evaluate their learning outcomes, but their frequency of use is relatively lower.

5. College Strategies for Enhancing College Students' Self-Directed Learning Abilities in the Online Environment

5.1. Leveraging Diversified Learning Resources.

In the current online environment, university students should actively explore and utilize diversified learning resources to meet their extensive learning needs. The rapid development of internet technology has made online education platforms, digital libraries, academic journals, and professional forums crucial channels for university students to acquire knowledge. These resources are not only rich in content and updated swiftly but also offer remarkable convenience and practicality, enabling university students to keep pace with the times and flexibly address various learning challenges.

5.2. Identifying Personal Learning Needs and Strengths

When utilizing learning resources, university students need to clarify their learning needs and strengths to make more precise learning choices. This includes selecting learning courses based on personal interests and career planning, participating in internships and club activities to exercise practical abilities and team collaboration skills. Additionally, through self-assessment, understanding one's learning strengths and weaknesses aids in formulating personalized learning plans, enhancing the pertinence and efficiency of learning.

5.3. Strengthening Self-management and Time Planning.

Self-management and time planning abilities are important cornerstones for improving autonomous learning abilities. University students should formulate detailed learning plans, clarify learning goals, tasks, and time arrangements to ensure the orderly progress of learning activities. Simultaneously, strengthening self-monitoring and reflection helps promptly identify and rectify deviations and deficiencies in learning, adjust learning strategies, and improve learning outcomes. Furthermore, mastering scientific time management methods, such as the Pomodoro Technique and the Eisenhower Matrix, aids university students in utilizing time more effectively and achieving a balance between learning and life.

5.4. Enhancing Self-monitoring and Reflection Abilities

Self-monitoring and reflection are crucial for university students to improve their learning planning awareness and self-direction abilities. By continuously observing their learning status and effectiveness, university students can promptly identify and resolve issues in learning, such as distraction and procrastination. Additionally, reflecting on the gains and losses during the learning process aids students in summarizing and synthesizing knowledge points, deepening their understanding and memory of knowledge. To this end, university students can establish learning notes, periodic reviews, and other mechanisms to facilitate the normalization of self-monitoring and reflection.

5.5. Boosting Self-Motivation and Self-Discipline

Self-motivation and self-discipline are the internal driving forces that propel university students to continuously learn and achieve their learning goals. By cultivating self-motivation, university students can maintain enthusiasm and drive for learning, actively facing difficulties and challenges in learning. Meanwhile, enhancing self-discipline helps students constrain their behaviors and thoughts, overcoming adverse habits such as procrastination and distraction. To achieve this, university students can establish good living habits, cultivate a positive mindset, and set clear reward and punishment systems to stimulate self-motivation and self-discipline, providing a robust guarantee for the continuous improvement of autonomous learning abilities.

6. Conclusion

The internet has had a profound impact on college students' autonomous learning ability. While it provides numerous advantages in terms of resource accessibility and learning flexibility, it also poses significant challenges that require careful management. By adopting effective strategies and cultivating a positive learning attitude, college students can leverage the potential of the online environment to enhance their autonomous learning experience and attain academic success.

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