Problems and Optimized Management Strategies of College Students' Independent Learning in the Internet Age

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Abstract: In recent years, Internet technology has developed rapidly, and is developing in the direction of "Internet +". Integrating Internet technology and education is the future development direction of education. At this stage, there are many ways to integrate Internet technology and learning, such as: micro-classes, MOOC and so on. Independent learning has important influence on college students' learning style and the development in the future, , but the traditional teaching methods cannot cultivate students' independent learning ability, so how to optimize teaching management measures in colleges in the Internet era and how to cultivate the self-learning ability of college students are the problems that educators need to study in depth. The article expounds the characteristics of college students ' independent learning in the Internet age, analyzes the existing problems in the internet era's college students' independent learning, and studies the optimization management strategies.

1. Introduction

Different from high school, college life and study are not so intensive, and college teachers pay more attention to teaching students how to learn. Therefore, college students need to make independent learning and improve their independent learning ability, which is very important for the development of college students. With the rapid development of science and technology, the increasing integration between Internet technology and education is changing college students' independent learning methods gradually[1].

2. Features of Independent Learning of College Students in Internet Era

A.Increasing range and categories of independent-learning curriculums

Nowadays, a lot of college students choose to gain free open courses via computer and improve their own professional knowledge level by learning constantly. Open courses involves a wide range of subjects, including mathematics, statistics, natural science and engineering[2-3]. Some online learning platforms have launched professional curriculums or career-based micro professional courses to users. By learning these courses, students can not only enrich their scope of knowledge, but also enhance their professional skills.

B.Abundant education resources available to college students

All the parents expect their children to obtain teaching resources of high quality, thus they can acquire good education. The birth and development of Internet technology will realize that demand of students and their parents and ensure teaching resources of elite schools and top teachers are accessible to students in their Independent learning. The establishment of an intact education resources sharing system will effectively boost the overall teaching level universities and promote the constant and steady development of advanced education, which is also the inevitable direction of development of advanced education in the information era.

C.Controllable study time of college students

In the age of Internet, students are capable of learning independently via computer, tablets and other small portable devices. This method allows students to immerse in their interested knowledge anytime and anywhere. Instead of sitting next to a computer desk watching teaching resources, students are able to break through the shackles of space and learn by themselves in various ways.

3. Analysis of the Problems Existing in College students' Independent Learning in the Internet Age

A.Problems existing in the utilization of online learning resources

1)The insufficient professional level of access to online learning resources: According to the related research, many students choose to use Baidu to search for the required learning resources, but the reference materials contained in Baidu Encyclopedia are not rich enough. Some students solve their learning problems through Zhihu, Baidu Homework Helper and other software for assistance; however, the information contained in them is not authoritative [4]. At the present stage, there are few students who know how to use the professional resources database and professional newspapers and periodicals website to search for the required learning resources, which shows that there is a problem of insufficient professional level of access to learning resources in students' independent learning.

2)The insufficient ability to search online learning resources: When searching for learning materials, some students think that they can obtain the materials they need in most cases while some think that they cannot obtain the learning resources they need. Thus, it can be seen that whether students can obtain learning resources that meet their own needs in independent learning will directly affect the learning effect of students.

3)The insufficient ability to distinguish useful learning resources: Many college students do not screen and think about the learning resources after collecting through the network. Although some will think about the learning resources, they analyze whether the learning resources are correct according to the opinions of others and teachers, and there are few college students who independently analyze and judge the learning resources.

B.Problems with the learning environment

1) Slow speed of university network: Most of college students study on their own by watching teaching videos under the Internet background. Video playback speed and fluency need higher network speed to support. If the network speed is too low, it will affect video playback effect negatively and then impact on students' learning. If students make the use of data watching videos, it will increase their learning costs, which in turn will make negative influence on students' initiative in independent learning.

2) Small coverage of university network: Most college students use computers and cell phones for self-study in canteen, library, dormitory and other areas, so as to take full advantage of students' spare time [5]. However, part of college students think that the network speed of university libraries and dormitories is faster than such other areas that cannot satisfy their demands for self-learning.

3) Insufficient communication of college online learning platform: College students are unable to communicate effectively with the online learning platform at this stage, while the majority of students are not satisfied with this. In the process of self-learning, students may encounter the incomprehensible knowledge points. At this time they need to communicate and discuss with classmates and teachers through the platform.

C.Student issues

1) Insufficient time for students to study online independently: Students do not have much spare time every day, so they have less independent study time through online platform. Although some students have enough time to surf the internet, they won't put much time in independent study, so it can be seen that student spend less time in online independent study.

2) No independent learning plans: Students do not set their independent learning goals or their study plans is not reasonable enough. First of all, the motivation of most students is not only to acquire the required knowledge, but also to obtain the corresponding credits. Thus, it can be seen that students have not determined the goal of independent learning. Secondly, Students do not make a plan of study time scientifically [6].

3) Insufficient self-control ability: In the internet age, most student spend their spare time through mobile phones and computers. Through the computers and smart phones, students can not only study, but also communicate with others. The internet platform also obtains entertainment information and learning resources, so it requires students' self-control ability and self-learning

ability.

4) Insufficient self-assessment ability: Reasonable self-assessment can not only improve students' independent learning ability, but also help students to realize their own value. Through their self-assessment, students can find their own shortcomings in learning and take effective measures to avoid them.

D.Teacher issues

1) Insufficient teacher participation: Most students indicated that teachers would upload the corresponding materials in the platform after the class, but the online teaching platform has not been designed for the discussion module reasonably, while students are not accustomed to its use and teachers are also not used to the discussion module. At present, most students and teachers are used to using QQ and WeChat to discuss various problems encountered in independent learning [7-8].

*2) Lacking enough guidance to students:*A part of college students cannot reasonably set their own goals and plans for self-directed learning according to their actual situation, while they do not understand what to learn, how to learn and how to formulate self-directed learning plans.

4. Optimized Management Strategy

A.Self-optimized measures for students

1) The need to change students' concept of independent learning: The study has found that freshman who had just entered the university were already accustomed to the learning methods of high school, and they lack of self-learning concepts and self-learning abilities, some of whom think that they can rest mainly by completing the tasks assigned by the teachers. While some boys waste a lot of their extracurricular time by opting to play online games during their school hours [9-10].

Under the background of Internet, college students not only need to master the relevant knowledge of the major, but also need to know the knowledge related to the major and the knowledge they are interested in. It is known that interest is the best teacher, for this reason, only by ensuring that students have an interest in learning this knowledge can their learning effect be guaranteed, while the exploration of learning drivers can be started with the following aspects:

First of all, college students can complete self-study according to the extension of teaching content, homework and study tasks. While some college teachers generally choose divergent tasks when assigning after-school assignments and tasks for students, which has an effect on developing their thinking ability. Secondly, public elective courses and lectures carried out by colleges can stimulate students' self-learning awareness and develop students' self-learning ability, which have become an important part of ideological education and personalized education in universities, so universities can set a variety of public elective courses, which involve multiple subjects to meet students' learning needs. Thirdly, students themselves also need to actively participate in practical activities, such as club activities, internships and other activities, through these activities they can conduct their independent learning[11].At last, students need to make full use of social tools, professional databases and other tools to complete self-study and find their deficiencies through communication with others, so as to improve their knowledge and skills in learning.

2) The needs to make independent learning plans: First, college students should have a correct understanding of the importance of independent study plan. Some college students do not make their own study plan, so their study effect is not good enough. In order to solve this problem, college students should have a correct understanding of the important influence of independent learning plan on learning. Second, college students should make a study plan scientifically according to their actual situation. College students can scientifically make short-term and long-term independent learning plans according to their learning situation and the knowledge they need to learn. As each student's learning situation and basic level is different, students should choose the most suitable practice, place and learning method according to their actual situation. Third, college students need to ensure that the independent learning plan is consistent with the school teaching plan. Independent learning needs to be within the scope of the school's teaching plan. In their spare time, college students independently acquire relevant knowledge and enrich their own knowledge. Therefore, the independent learning plan must be consistent with the school

teaching plan. Fourth, make a quantifiable plan for independent learning. When college students make their own learning plans, they should ensure that they can be quantified so that students can understand and master the situation of their own learning. When students make their own learning plans, they should make sure that the learning plans have some difficulty, so this can stimulate students' interest in exploration.

3) The needs to change the implementation process of independent learning: In the context of the Internet, college students need to use computers or other intelligent terminal devices for their independent learning. As the Internet platform contains a large number of learning resources and entertainment resources, students are easily affected by other factors. In order to avoid this problem, college students should choose a fixed place and a fixed time to study independently in the learning process, and gradually develop good learning habits [12]. College students should analyze their spare time in detail, plan their study and entertainment time, and summarize their learning situation every day.

College students can take cooperative learning as an important learning method. Firstly, college students are free to form study groups and discuss what they have learned at a fixed time every day, so as to improve the students' independent learning effect. Secondly, set up discussion groups or forums through Internet technology and discuss with others about the learning content. Thirdly, college students can participate in various associations such as literature, art, science and technology to improve the effect of independent learning through communication with club members.

*4) The needs to strengthen self-supervision and self-evaluation:*First, self-supervision. The self-supervision of college students in the process of independent learning can be divided into the supervision before learning, the supervision during learning and the supervision after learning. Through the supervision before learning, it can ensure that the learning objectives and learning plans made by college students are consistent with their actual situation[13]. By the supervision during learning, college students can know timely whether their learning objectives are appropriate and whether there are problems in their learning. If they find problems, they need to adjust them in time. Through the supervision after learning, college students are able to reflect on whether their behavior of independent learning is correct, which lay a solid foundation for the further independent learning.

Secondly, self-evaluation. College students are supposed to carry out self-evaluation affected by the quality of independent learning plans after making learning plans and learning objectives, completing independent learning as well. In the process of evaluating their own independent learning, college students need to grade the whole learning process and make the targeted improvements on their learning process.

B.Optimized measures for instructors

1) Reforming the concept of teachers: In the context of the Internet, the status and role of teachers will also change. In the past, regarded as knowledge imparters, teachers adopted traditional indoctrination method to explain relevant knowledge to students. However, in the age of Internet, teachers need to undertake a series of tasks including the design and providing of learning resources, guiding, and questions explanation and so on[14]. In the process of students' independent learning, teachers should guide students to set up their learning goals and plans scientifically, leading students to carry out independent learning, as well as help students monitor and evaluate themselves, so as to stimulate their enthusiasm for learning.

2) Improving the information literacy of teachers: First of all, improve the ability of teachers to obtain information. In the past, teachers obtained teaching information mostly through teaching reference books, newspapers and magazines. In the era of Internet, the approaches of gaining teaching information are gradually increasing. In order to ensure teaching efficiency and effect, teachers usually need to both acquire specialized knowledge and the professional knowledge of practice in time.

Secondly, improve teachers' ability of using network tools. With the development of science and technology, Internet technology has been widely used in various industries, having a certain impact on teaching, scientific research and other work. In the era of Internet, the requirements for teachers

are gradually increasing that teachers need not only professional knowledge and teaching ability, but also new technologies, methods and processes. Teachers should master modernized teaching methods, using computers and other Internet terminal equipment skillfully, in order to gather, process and apply teaching resources.

Finally, we need to improve teachers' ability in network resources selection and integration. The Internet platform can provide teachers with rich teaching resources. However, the primary purpose of education is to improve the teaching effect. Teachers should reasonably select high-quality teaching resources and teaching tools according to teaching objectives, teaching target and teaching contents. Teachers should have the ability to select and processing teaching resources and combine them with teaching procedure.

*3) Optimizing teachers' instructional design and implementation ability:*Instructional design is a systematic work, which involves the design of teaching materials, teaching objectives and so on. Although the hardware equipment of information technology is relatively comprehensive in many major colleges, some teachers still do not integrate information technology with teaching organically. In the process of instructional design, all the elements and the relations among them should be coordinated.

Firstly, the optimization of teaching methods. Some teachers said that many students play with mobile phones during class, some schools even prohibit bringing mobile phones to class. One of the main reasons for this problem is that teachers' teaching methods have problems in attracting students' attention. If teachers acquire other advanced teaching methods which can attract students' attention as well as improve the quality of teaching, such as: using project teaching method, teachers will ask questions before class and students will make group discussion, discussion is completed by a representative of the student in each group to speak. Then it will be reviewed mutually by teams and teachers. Teachers will make arrangement homework before the end of the class. Adopting advanced teaching methods can stimulate students' learning enthusiasm and improve teaching efficiency.

Secondly, students' cooperative learning. Teachers should actively participate in students' independent learning activities and guide them to ensure the correctness of students' goals and learning plans. As for questions that students find difficult to solve, teachers are supposed to answer them in time to stimulate the initiative of their independent learning. Meanwhile, teachers can also take full advantage of the Internet to communicate with students.

4)Reforming evaluation mechanism: Firstly, teachers should enrich the evaluation methods of students. Under the background of Internet, teachers should respect students' individuality, gratify their personalized needs, monitor and evaluate students' independent learning behaviors. Different from the traditional way of learning, students need to make full use of the Internet technology for independent learning. The learning style of students is more complex, so the main tasks of teachers have changed, along with their evaluation work accordingly. Teachers need to optimize the evaluation mechanism, and use the evaluation methods of project evaluation, process evaluation and other evaluation methods to stimulate students' interest in independent learning.

Secondly, teachers should pay more attention to students' mutual evaluation and self-evaluation while optimizing the evaluation methods. At present, many colleges and universities in China begin to carry out teaching reform, encouraging teachers to adopt diversified assessment and evaluation methods. It can improve the accuracy and fairness of the evaluation results by integrating the students' mutual evaluation and self-evaluation.

C.Measures for optimizing management system

Classroom learning and independent learning require the efforts from university, teachers and students. In the process of independent learning, students are the main body, while teachers and university management are the participants. The management should optimize the management system from the following aspects:

First of all, the university can publicize advanced learning concepts to students and spread learning models through various social tools, so as to improve students' self-confidence in independent learning. The university can release employment policies and employment information to students through social software to ensure that students can understand the needs of society and

enterprises for talents, and scientifically determine independent learning goals and plans according to their own actual condition[15].

Secondly, the university should establish and improve the course selection system and lectures. Many college students think that there are few types of public elective courses and the scope is not wide enough. Therefore, colleges and universities need to improve the current course selection system to ensure that students can choose the professional knowledge they are interested in to study, so as to stimulate students' enthusiasm for independent learning. In addition, some students think that the number of lectures in colleges and universities is small, and the scope of knowledge is not wide enough, so the enthusiasm of students to listen to lectures is not high enough. Therefore, colleges and universities should improve the lecture system, use a variety of social software to publicize the lecture content, and ensure the richness of the lecture content, in order to attract students' attention.

Finally, the university should optimize student assessment and evaluation system. With the development of science and technology, the way for students to acquire knowledge are gradually increasing, and students' self-learning ability is also gradually increasing. University management need to optimize the student assessment and evaluation system, and use the combination of result assessment and process assessment to assess and evaluate

D.Relevant guaranteed measures.

1)Improvement of hardware environment and services: The Internet has become an important tool for student to acquire learning resources and communicate with teachers. In order to meet the need of students, colleges and universities need to establish electronic reading rooms to provide students with services of browsing and querying network information, and provide students with services of digital library. Though the establishment of electronic reading rooms, college students can acquire the required leaning resources, and use interactive learning, shared learning and other learning methods for self-learning. In addition, colleges and universities need to increase network coverage and speed. Colleges and universities need to ensure the Internet is covered in classrooms and dormitories, ensure that students' dormitories are equipped with network interfaces, and ensure students can acquire the required teaching resources through the Internet. The teaching building area needs to be fully covered by WIFI, so that students can search for the required learning resources through the Internet during the break and evening self-study time. According to the peak of students' Internet access, colleges and universities also need to limit the maximum download speed of the Internet to ensure the need of students' self- learning.

2)Optimization of software environment: The self-learning of college students needs the support of a variety of learning resources, so colleges and universities need to provide students with rich resources. First, colleges and university need to cooperate with the corresponding professional databases and purchases a variety of learning resources, such as: China Knowledge Network, Wanfang Database and other professional databases. Students can log in to these databases to acquire learning resources. Second, colleges and universities can establish a teaching resource library and save all teachers' classroom teaching resources in this. Student can watch these teaching resources in their spare time. Third, colleges and universities need establish an online communication platform to strengthen student communication with teachers and university management.

5. Conclusion

A study found that there are still some problems in college students' self-learning due to the influence of learning environment, self-management, learning resources and factors. The main reasons for the problem are that Chinese economy and science and technology are developing rapidly, but the software and hardware facilities of colleges and universities, learning environment creation, and learning resource acquisition are inconsistent with it. In order to solve these problems, teachers, students, and university need to be improved together. Teachers need to constantly improve their comprehensive qualities and concept by continuous learning. Students need to determine self-learning goals, strength their constraints and management. Schools need to improve the relevant management system to provide good software and hardware facilities support for students. Through

above measures, it is possible to enhance the self-learning ability of college students and cultivate high-quality talent for the society.

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