Students' Independent Learning Ability Improvement Model Based on Industry-University-Research

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Abstract: Since the 21st century, with the high and new technology, people have brought many conveniences and surprises to people's life, study and work, and also affected the way of thinking and learning of students. Under the new media environment, the way of acquiring knowledge has undergone tremendous changes, and it is bound to put forward higher requirements on the autonomous learning ability of contemporary college students. The improvement of autonomous learning ability in the new media environment has become an inevitable requirement for talent training and higher education, and it is also the need for individual learning to meet their own knowledge learning needs. In the study of this article, about 72% of students evaluated their learning progress and made corresponding plans, while pre-test data showed that only about 33% of such students. It can be seen that after one semester of training, the score of each question in the post-test on the dimension of self-management learning ability is higher than the pre-test, and the student's self-management level has improved significantly.

1. Introduction

At present, the environment for domestic-industry-university-research cooperation education is not ideal. Many companies lack a far-sighted vision, fail to have a relatively accurate positioning and grasp of emerging technology projects, and fail to foresee the economic benefits that industry-university-research cooperation can bring to enterprises. As for schools, although higher vocational colleges have a strong desire to participate in cooperative teaching projects, cooperation is still at the theoretical stage, often superficial, and not really implemented, and even less truly Initiate cooperation projects with enterprises, so students cannot join them, so the industry-university-research cooperation projects are still on paper.

In addition, there is a shortage of professional and technical talents in enterprises, and there is a shortage of skilled labor. Therefore, the role of university-industry-industry-research cooperation education is mainly reflected in two aspects: First, it helps to speed up the update of the knowledge system and helps Optimizing the curriculum structure of vocational colleges can also enhance its ability to innovate science and technology, promote the commercialization of scientific and technological achievements, increase the contribution of schools to economic development, and promote the level of services [1-2]. Second, we can use the resources of society, especially enterprises, to make up for the lack of resources in school education and other deficiencies, and improve the quality of talent training. In industry-university-research cooperation education, combination is the prerequisite and means, and school education is the ultimate goal to be achieved [3]. Therefore, the final expected effect of the production-university-research cooperation education is to turn student education into qualified human resources that meet the social and corporate employment standards [4]. The best way to promote the combination of production, teaching, and research is to give schools more autonomy in teaching decision-making and management, so that colleges and universities can themselves determine which courses and courses for students based on the analysis of business forms and grasp of business dynamics. How to impart this knowledge to students in order to meet the employment needs of enterprises and the needs of promoting local

economic development, and arrange their educational activities in a more efficient manner [5-6]. Due to the inertia of the planned economy system, as a demand-side enterprise in the labor market, the demand for skilled labor professionals has not yet formed a relay. As a result, graduates delivered by vocational education schools to the community cannot receive the value they deserve. The problems of non-use and use are serious [7-8].

This is a new mission entrusted to education in the new era. It is both an opportunity and a challenge for higher vocational schools. How to seize the opportunity, meet the challenge, effectively use all the existing favorable factors, and actively develop the cooperative education of production, study and research is a problem that must be considered and solved by higher vocational colleges [9]. In the face of difficulties, we should seize the opportunity, get out of the predicament, and contribute to the progress of society, economic development, and the construction of the school itself.

2. Method

2.1 Autonomous Learning

Researchers at home and abroad have different explanations of autonomous learning, but a preliminary consensus has been formed on the understanding of learners' subject status [10]. Mastering the meaning of autonomous learning should pay attention to: the essence of autonomous learning is learning and love learning. Meeting learning means that students can consciously take effective methods and approaches to achieve learning goals; love learning means that students have a subjective desire to learn, and the motivation for learning comes from themselves rather than external forces.

2.2 Autonomous Learning Ability

Psychology summarizes abilities as: abilities are the psychological characteristics of a personality that is indispensable for achieving an activity well. According to this definition, self-learning ability can be summarized as: self-learning independently without the help of a teacher is an indispensable personality psychological characteristic for the successful realization of self-learning activities. The creative spirit and individual psychological quality of the problem [11-12]. The current common formulation is: the autonomous learning ability is the ability of learners to acquire skills and knowledge through their own independent learning.

2.3 Research Methods

The research of university-industry-industry-research cooperation education has strong practical significance and pertinence. This article mainly adopts literature research method. Access existing books, journals, newspapers, and electronic resources based on the nature and scope of the research question. Make full use of your research data for analysis, synthesis, comparison and induction. On the one hand, it forms a scientific understanding of research issues, obtains the foundation and platform for research, and determines the goals and content of the research; on the other hand, it obtains relevant research data and facts, which provides favorable support for further research.

3. Experiment

The experimental object of this article is the students of private universities in Shaanxi. The teaching effect evaluation is performed after the semester of teaching activities. The effect of the project curriculum to improve the autonomous learning ability of students is mainly to require students to fill in the same autonomous learning ability questionnaire again, select some students for interviews, and ask all students to submit reflection materials for the course . Finally, through the questionnaire and interview results and the statistical data of reflection summary materials, analyze the changes in students' autonomous learning ability.

In the course teaching, pre-test questionnaires are still used for post-test surveys. A total of 81 questionnaires were distributed to 81 juniors in education technology. A total of 81 questionnaires

were recovered. The recovery was 100%. Eliminate two useless questionnaires. 79 valid questionnaires. The effective rate is 97.5%.

As with the preliminary survey questionnaire, the final test questionnaire uses a Likert five-point scale, which is "completely disagree" 1 point, "disagree" 2 points, "not sure" 3 points, "agree" 4 points, " The "Fully Agree" 5-point questionnaire scores higher, the higher the autonomous learning ability of college students.

4. Results

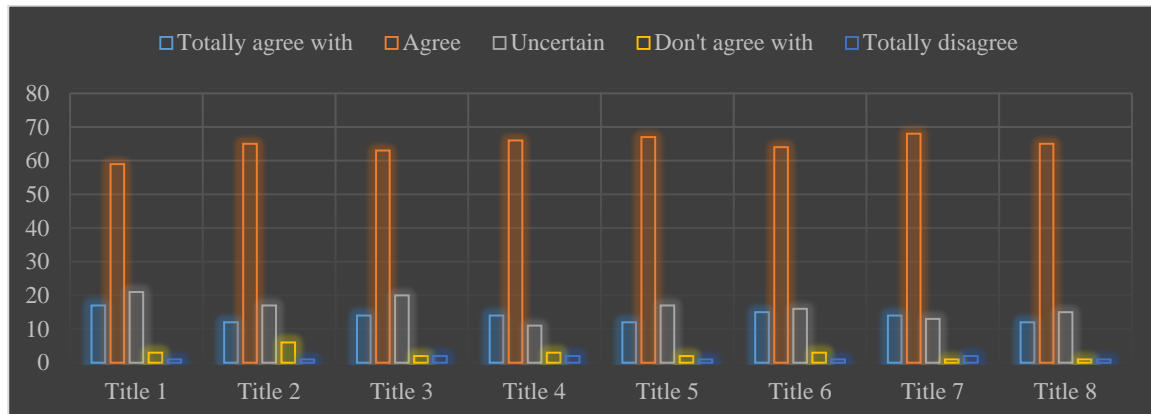### 4.1 Analysis of Students' Self-management Learning Ability

Figure 1. Post-test situation of self-management learning ability

Table 1. Statistics of self-management learning ability before and after comparison

Item	11	12	13	14	15	16	17
Pretest	3.2759	2.9862	3.1034	3.5241	3.4207	3.0621	2.8552
Post test	3.9126	3.8447	3.9029	4.0582	3.9806	3.7864	3.6893
Item	18	19	20	21	22	23	24
Pretest	3.2138	3.0483	3.1242	3.0759	3.1862	3.0621	3.1241
Post test	3.8835	3.7282	4.0097	3.9806	3.9615	3.8447	3.7767
Before measuring the mean	3.1473			After measuring the mean		3.8828	

As shown in Figure 1 and Table 1, post-test data analysis shows that in 11 questions, about 78% of students know their strengths and weaknesses, while pre-test data show that only about 40% of such students. In 12 questions, about 76% of the students have clear task goals in a certain study, and the pretest data show that only about 30% of such students. In 13 questions, about 78% of students will use different learning strategies according to different learning tasks, and the pretest data shows that only about 35% of such students. Among the 14 questions, 87% of the students encouraged themselves when they encountered setbacks in their studies, and the pretest data showed that only about 50% of such students. Among the 15 questions, about 83% of the students have learning goals, and the pretest data show that only about 48% of such students. Of the 16 questions, about 74% of the students had a personal task plan in addition to the task given by the teacher, and the pretest data showed that only about 32% of such students. In 17 questions, about 60% of students will conduct periodic assessment of their learning level, and pre-test data shows that only about 24% of such students. Of the 18 questions, about 83% of students will use the plan to complete learning tasks, and pre-test data shows that only about 34% of such students. Of the 19 questions, about 66% of the students monitor the implementation of individual learning plans through continuous learning, and pre-test data shows that only about 34% of such students. Of the 20 questions, about 86% of students will reflect on and summarize their learning methods, while pretest data shows that only about 35% of such students. Among the 21 questions, about 81% of students will evaluate their learning effects and find out problems and solutions, while pre-test data shows that only about 31% of such students. Among the 22 questions, about 84% of the students

will ask themselves whether they have achieved the set goals when a task is completed, and the pretest data show that only about 35% of these students. Of the 23 questions, about 70% of the students have clear requirements for improving their learning, and the pretest data show that only about 29% of such students. Among the 24 questions, about 72% of the students evaluated their learning progress and made corresponding plans, while the pretest data showed that only about 33% of such students. It can be seen that after one semester of training, the score of each question in the post-test on the dimension of self-management learning ability is higher than the pre-test, and the student's self-management level has improved significantly.

4.2 Adhere to the Principle of Teaching as the Main Body

In the era of the rapid development of the knowledge economy, whoever has the most advanced technology will be invincible and who is at the forefront of economic development. Therefore, to develop and grow, enterprises must rely on scientific and technological forces and introduce high-tech projects to promote their own development. Therefore, scientific research must be at the forefront and advanced consciousness, because scientific research can guide the development of enterprises and inject fresh blood and vitality into the development of enterprises. Scientific research is the most effective way to solve important problems that need to be solved urgently in production practice. In addition, the significance of analyzing scientific research is, in the final analysis, that scientific and technological achievements serve social and economic development and serve humanity.

5. Conclusion

Due to the impetuous psychology of students' learning, under the circumstances of high employment pressure and irregular job market, they have some doubts about the fact that employment is based on real talents. Therefore, learning enthusiasm has been affected to a certain extent, learning is also highly dependent, and the spirit of active learning and inquiry learning is lacking. Especially in the early stage of the development of autonomous learning ability, it is difficult for students to get rid of past learning methods. New teaching methods and requirements are difficult to adapt. In this case, the teacher should "force" the students to learn independently from the basic teaching content, from shallow to deep, from slow to fast, and gradually, so that students gradually enter the role, and help students master certain experiences and methods of autonomous learning We are constantly summing up and improving.

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