

Idea of Teaching Reform Based on Achievement-oriented

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Abstract: In order to respond to the national call, there is an urgent need to conduct an in-depth analysis of the teaching guidance and learning methods in college courses, to make up for the current deficiencies, to improve the teaching system, innovate teaching content, change teaching methods, improve the actual teaching quality, and improve the learners' experience. Professional ability and subject quality provide new ideas for the activity design of college courses. The main purpose of this paper is to study the ideas of educational reform based on the result orientation. This paper mainly analyzes many theoretical and practical cases, describes the theoretical basis and learning orientation of the learning activities in the teaching process, and provides directions for the cultivation of students' creativity, and designs a series of courses to achieve good results. Experiments show that the overall mastery is relatively good. 16 groups of project works have reached the excellent grade, 3 groups are good grades, and the overall excellent rate is 84%.

1. Introduction

With the rapid development of society and economy, my country's higher education has achieved a series of achievements in recent years. However, due to the lack of project-based learning activities goals to support social needs and the lack of a project-based learning activity system built around learners' expected abilities, As a result, some students are still unable to meet the requirements of the job when they are employed in the future. Outcome-oriented education theory is an educational theory oriented to market demand and emphasizing the cultivation of students' comprehensive practical ability and subject professional quality. Guiding project-based learning activities based on the theory of outcome-oriented education can effectively solve the shortcomings of current project-based learning activities, enhance the orientation of college students' ability and quality training, and better play the role of project-based teaching in cultivating students' practical ability. Advantages, fully adapt to the talent training requirements of college courses, and conform to the development trend of education reform [1, 2].

There are rich theoretical studies on outcome orientation at home and abroad, among which, Monforto K defines outcome orientation as "clearly focusing and organizing the educational system, and ensuring that students master the methods or experiences that can be successful in their

future study and work" [3]; Helms K believes that students' learning outcomes are the knowledge, skills or qualities that students can master after completing courses or professional studies [4]. Therefore, exploring the theory of outcome-oriented education in project-based learning activities has important theoretical and practical significance.

The main purpose of this paper is to research the ideas of teaching reform based on the result orientation. In terms of theory, this research analyzes the related research on the theory of outcome-based education, and combines the characteristics of college courses, the theory of project-based learning activities and teaching practice experience, and constructs a project-based learning activity design framework based on the theory of outcome-based education. The inner loop in this framework emphasizes the internal control of teaching activities, and determines a series of interconnected project-based learning activities through the reverse design of expected outcomes and goals to ensure that students master the preset core knowledge and skills after the teaching activities.

2. Design and Research of Teaching Reform Ideas Based on Achievement-Oriented

2.1. Academic Evaluation Affects Creativity Cultivation

As an important link in the teaching process, academic evaluation not only provides an important reference for teachers to carry out follow-up teaching and instructs students on how to complement their weaknesses in the next period of learning, but also an important guiding factor to motivate students to learn effectively and improve their learning outcomes. The cultivation of creativity depends on the joint action of many factors, and the guarantee system, dynamic mechanism and realization path of creativity cultivation must be established. In all aspects of creativity cultivation, academic evaluation not only plays a role in guaranteeing the direction, but also provides a source of motivation and a field of realization. Academic evaluation plays a role in the cultivation of students' creativity by means of strong security, production power, and camp environment, and helps students develop their creative thinking and creative tendencies [5, 6].

2.1.1. Academic Evaluation Provides Clear Guidance for Creativity Cultivation

Any academic evaluation is carried out under the guidance of certain evaluation concepts. The evaluation concept is the basic proposition of the evaluator about the nature, function and implementation of evaluation, and the basic belief of how evaluation should be done. It plays the role of guiding ideology and action guide in all evaluation work, and guides the development direction of the whole evaluation work. The concept of academic evaluation is not only a factor of school teaching, but also an important environmental factor, which plays a clear guiding role in the cultivation of students' creative ability.

Whether it is the establishment of awards, or the implementation of relevant evaluation and assessment systems, they are actually creating a positive environment conducive to innovation and creation through the role of an evaluation "baton", advocating a way to motivate college students to seek knowledge Innovative value orientation. The clearer and more reasonable the goal of creativity assessment is, the clearer and more effective the direction of education and teaching reform will be.

2.1.2. Academic Evaluation Provides Appropriate Incentives for the Cultivation of Creativity

Although college students are no longer like primary and secondary school students, they do not need to rely on long-term external incentives to maintain their attention and interest in learning in

the process of learning, but the cultivation of college students' creativity still requires a certain degree of external incentives. It is not necessarily a material reward or verbal encouragement, but the teacher supports or agrees with the students' new ideas and ideas for problem solving from the heart. Teachers can provide the necessary help and guidance for the students to continue their further exploration. It makes more sense for students to simply have an A grade or a high grade.

In the evaluation of students' learning in the classroom, use as little as possible grades or grades, and do not use too much pure praise language, and should focus on guiding students to discover new strategies for solving problems; and the course completion exam is inevitable. Qualitative or quantitative evaluation must be carried out, but it cannot be neglected to provide students with performance evaluation of the learning process and prospects for subsequent learning through the learning performance query platform.

2.1.3. Academic Evaluation Provides Necessary Monitoring for the Cultivation of Creativity

At present, in order to promote the cultivation of students' creativity, the school has launched various innovative experimental classes, innovative teaching reform experiments, and innovative competition activities, and has opened a variety of creativity courses. However, the cultivation of college students' creativity has its own laws. How to regulate the creative education work and scientifically evaluate the effectiveness of the creative education work must be reflected in the development of the students. As for the development level of students' creativity, it must be based on scientific academic evaluation, and should be tested by multiple comprehensive evaluations combined with the professional ability of disciplines [7, 8].

For individual students, in order to allow students to have an accurate understanding of their own creative development status, and to make their creative talents play in line with the direction of social development, through different levels of creativity evaluation, students are encouraged to form correct creative values, It is also very necessary. Students' creative personality and creative thinking are equally important for creation and invention. Through a good evaluation system and evaluation system design, students' creative talents can be discovered and positively affirmed in time, which will help to promote students to form a good creative personality quality.

2.2. Implementation Process of Project-based Learning Activities Based on Outcome-oriented Education Theory

In order to better reflect the dominant position of teachers and the dominant position of students, this study distributes the entire project-based teaching activities into three stages: "before class", "in class" and "after class":

(1) Before class: carry out the preliminary perception of the project, formulate project plans, and collect and study resources. At this stage, the main body of students can be fully reflected. Teachers can upload the prepared course resources to the network platform. Self-learning or cooperative learning is used to plan the entire project process and actively construct key knowledge and skills, so as to be fully prepared for the completion of project tasks. During this process, learners' communication and collaboration skills can be greatly exercised.

(2) In class: mainly complete the production of works and the reporting and communication activities of the results. This form can avoid stacking all project-based learning activities in the class, which makes it difficult for students to maintain long-term concentrated attention during the completion of the project. Teachers should focus on the cultivation of students' abilities. In the process of completing students' works, they should flexibly use the methods of inspiration, analysis,

guidance and discussion to help students overcome difficulties and design individual cases or works. In addition, thanks to the more flexible learning environment, teachers and students will communicate and discuss more through information tools, which will help improve students' initiative and enthusiasm for learning and form an equal and harmonious relationship between teachers and students [9, 10].

(3) After class: Teachers will guide students to complete a series of evaluation activities, which will help stimulate students' sense of achievement and cultivate students' interest in learning. After the evaluation is concluded, teachers reflect on the development of project-based activities and propose improvement strategies, and students reflect on the project process and project results. In the process of actual project development, the development time of each project link is not fixed, and the above settings are only for reference. In the specific design, teachers can adjust the development time according to the needs of the activity content [11, 12].

2.3. Algorithm Research on Results-oriented Teaching Reform Ideas

In recent years, the talent training and the improvement of education and teaching level in colleges and universities have attracted the attention and attention of various colleges and universities and educational administrative departments. The most important and most direct way to train students is to evaluate their academic performance. A reasonable, comprehensive and scientific evaluation method of student achievement is particularly important and urgent.

2.3.1. Build a Decision Tree

There are many commonly used methods for selecting "optimal" attributes, and the selection is based on information gain. The entropy value of the sample set is calculated first, the sample space is divided according to different attributes, and the entropy value of the sub-sample set is calculated separately after the division. "Optimal" refers to the minimum entropy value that divides the samples. Assuming that the sample set is T, and α_n is the nth attribute in T, the calculation formula of the information gain is shown in formula (1):

$$Gain(\alpha_n) = Entropy(T) - \sum_{i=1}^m \frac{|T_i|}{|T|} \times Entropy(T_i) \quad (1)$$

In formula (1), the number of samples of T_i is $|T_i|$, and the number of samples of T is $|T|$.

2.3.2. Calculation of Entropy Value

The calculation formula of entropy (T) is shown in formula (2):

$$Entropy(t) = - \sum_{i=1}^s freq(C_j, T) \times \log_2(freq(C_j, T)) \quad (2)$$

In formula (2), s represents the number of classes of T, and $freq(C_j, T)$ is the class frequency of samples in T that belong to C_j . That is to say, the difference between the entropy of the sample set T and the expected value of the entropy of m subclasses obtained after classification by α_n is the information gain. The larger the value, the better the selection of α_n , and the better the classification effect.

3. An Experimental Study on the Idea of Teaching Reform Based on Achievement-Oriented

3.1. Design of Learning Activities Based on Outcome-oriented Education Theory

Project-based learning activities based on the theory of outcome-oriented education are systematic and process-based activities around a certain project task. The teaching activities carried out deviate from the outcome goals.

3.1.1. Content Analysis of Learning Activities

Teachers should once again clarify the core knowledge and skills to be mastered by learners in project-based learning activities, as well as the supported ability indicators, and then analyze the characteristics of learners, teaching content and actual life situations, and clarify the key links in project-based learning activities. , teachers can further divide the sub-project tasks according to the complexity of the core project tasks, and carry out project-based learning activities at the learning pace that conforms to the learners' cognitive level.

3.1.2. The Driving Problem Design of Learning Activities

Driving questions play a role in introducing situations in project-based learning activities, stimulating students to think, and improving learning enthusiasm. Attention should be paid to the setting of driving questions: the design of the driving questions should fully revolve around the project objectives to ensure that the project-based learning activities do not deviate from the final outcome goals; closely integrated with real life, the content of the questions should be able to require students to plan, comprehensively analyze, The process of continuous exploration such as collecting data can be solved; the expression should be refined and concise, and should not be generalized and complicated to cause ambiguity.

3.1.3. Task Design of Learning Activities

The project-based learning activity task based on the outcome-oriented education theory should not only include the learner's output of the final project work, but also set tasks for each link in the activity based on the project's outcome goal, and grasp the learner by controlling each link. The actual learning situation, in order to continuously adjust the content of the follow-up links, to ensure that the learners can achieve the expected goals after the activity.

3.1.4. Learning Support Design for Learning Activities

Rich resources and tool support can improve teaching effectiveness and help learners better master knowledge and skills. The resource selection and tool support should meet the needs of each student and serve the solution of students' project tasks. Therefore, the resources provided to students during the project development process should include subject books, network resources, and animation courseware. The tools mainly include teaching equipment, related software and teaching platforms. Before class, teachers can upload relevant course resources to mobile terminals or teaching platforms for students to learn. In the class, the teaching equipment required by the students can be provided and the students can interact with the learners in real time through the relevant software in the process of completing the project tasks. After class, students' feedback is collected through the teaching platform to adjust teaching. During the whole process of project-based learning activities, students can discuss with teachers at any time any problems that

arise when students solve projects through information tools.

3.1.5. The Design of the Evaluation of Learning Activities

The evaluation strategy of the project-based learning activity based on the outcome-oriented education theory is oriented to the course outcome goal, and the evaluation activities are distributed to the evaluation of each project-based learning activity link, so that the teaching evaluation runs through the entire teaching process. Teachers and course designers should, based on the principle of "reverse design", consider students' comprehension ability and acceptance level before teaching, and determine specific evaluation strategies and evaluation methods according to the characteristics of teaching content.

3.2. Project-based Learning Activities

3.2.1. Determine the Project

When establishing the project theme, attention should be paid to: In order to effectively enable students to complete the expected project tasks, teachers should understand the level that learners should reach, including the necessary knowledge and skill reserves; the project theme set around the teaching content should be It is most suitable for students to achieve the expected results and goals; the project theme should be practical, typical, and inspiring, and give students a certain degree of freedom in choosing specific project design. Teachers only serve as facilitators and assistants for students to complete the project.

3.2.2. Make a Plan

According to the actual teaching situation and the needs of project-based learning activities, the project learning groups are divided into groups arranged by teachers or freely allocated by learners. Attention should be paid to grouping: the number of project teams should be adjusted according to the different objectives of project-based learning activities and task characteristics. Only a reasonable number of people can achieve better learning results; the degree of homogeneity or heterogeneity among members will affect the group. For the effect of interaction in cooperation, teachers can make adjustments according to students' talents, specialties, and personalities to form the best combination; team members should have the same project goals, and when there are differences in their respective goals during the project production process , teachers should intervene as soon as possible to coordinate to ensure the smooth development of project-based learning activities.

After the group division, each group will formulate a complete project plan according to the content of the project work, including the project theme, project schedule, expected work form and other content that needs to be explained. In the process of making plans, teachers should play a guiding role to help students enter the problem situation for analysis, and should organize students to discuss the problems commonly questioned by learners in a planned way. Finally, each group forms a project plan and submits it to the teacher for review. After the teacher confirms that the plan can be implemented, the students follow the project plan for follow-up work.

3.2.3. Activity Exploration

Group exploration activities include collaborative learning activities between teachers and

students, students and students, as well as students' autonomous learning activities. The key lies in the students' ability to master, collect and integrate information, ensuring that all members of the project team can effectively implement their specific project-based learning activities according to the previously planned division of labor, schedule, and expected work form. At this stage, teachers mainly provide students with corresponding resources and tools according to the requirements of project-based learning activities, and only provide teaching guidance when necessary. Teachers can upload relevant micro-lecture resources through the online teaching platform before class, and students can learn independently according to their own needs and project progress.

3.2.4. Production of Works

The production of project works is the core link of project-based learning activities. The development of teaching activities and the production process of project works are intertwined. Through self-learning and collaborative learning in the process of project production, learners can actively master the core concepts and principles of the subject and improve their performance. Comprehensive quality. Teachers guide and supervise students to complete project production based on the tasks in the activity process, and provide students with necessary technical and tool support. Before the production of the project, the students will be shown and analyzed excellent work cases to provide guidance for the students' project production. During the production process, students are encouraged to use their imagination and personalize the project results. The project team needs to collect all kinds of resources, carry out planned implementation according to the preliminary project plan, and summarize, reflect and improve the results of each stage. Teachers obtain feedback on the progress of each project team, summarize relevant difficulties, and focus on explaining or guiding discussions online or offline, so as to deepen students' construction of the meaning of core knowledge.

3.2.5. Exchange of Results

After completing the design and production of the project works, each project team should communicate and display based on their project results, share their own experience and mastered knowledge and skills. The form of communication and display can be adjusted according to the form of the project results, mainly including debates, reports, competitions, etc. Students can put forward questions and suggestions on the report results of other group members. After the report, teachers should guide students to discuss a set of project scoring rules together before the work evaluation.

3.2.6. Evaluation and Reflection

The learning evaluation stage is to summarize the effect of the whole project-based learning activities. After the project-based learning activities are carried out, the group cooperation exploration situation, the project work quality, the project production report and other contents should be completed based on the content of the previous project-based learning evaluation design. evaluate. Students reflect and summarize based on the results of various evaluations to strengthen the learning of weak knowledge and skills. The teacher summarizes the successful experience in the project development and adjusts the content and links of the follow-up project implementation based on the problems.

4. An Experimental Analysis of the Idea of Teaching Reform Based on Achievement Orientation

4.1. Achievement of Ability and Literacy

The final score of this round of project works is based on the evaluation results of teachers, professionals, other project team members and students themselves. Since the index points supported by the first round of project works are mainly the basic theoretical parts that are easier to grasp, the overall mastery is relatively simple. Good, 16 groups of project works reached the excellent grade, 3 groups were good grades, and the overall excellent rate was 84%.

In order to understand the achievement of the achievement goals, this study conducted a descriptive statistical analysis on the scores of each ability index point. The specific data are shown in the following table 1:

Table 1: Descriptive statistics of evaluation results of index points supported by project works

Indicator point	A1	A2	A3	B1	B2
Maximum	4.85	4.85	4.75	4.7	4.7
Minimum	4	3.25	3.4	4	3.15
Mean	4.13	4.15	4.10	4.10	4.03
Standard deviation	0.25	0.30	0.28	0.23	0.45

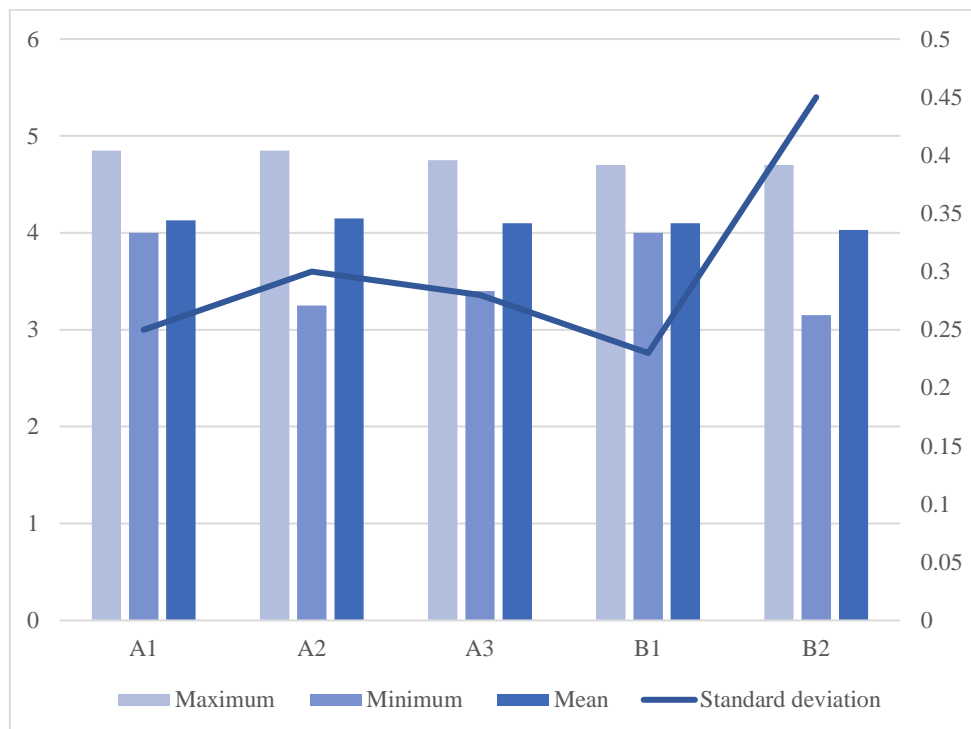


Figure 1: Descriptive statistics of evaluation results of index points supported by project works

Specifically, it can be seen from Figure 1 that the average score of each index point is higher than 4 points, and the overall mastery is relatively good, which proves that the learners achieved the expected activity goals through the implementation of the first round of project-based learning activities. Processing ability training.

4.2. Analysis of Project Production Report

After the project-based learning activity, a total of 19 project production reports were collected. Teachers and learners evaluated each group of reports based on the project production report evaluation rubric. In the end, 11 groups of project production reports were rated as excellent, 6 groups were good, and 1 group was moderate. , 1 group was poor, and the excellent rate was 58%. The descriptive statistical analysis results of each evaluation dimension in the project production report are shown in the following table 2:

Table 2: Project production report evaluation descriptive statistics

Dimension	report description	division of labor	production process	project reflection
Maximum value	5	5	4.73	4
Minimum	3.7	3.3	2	2.3
Mean	4.41	4.11	3.35	2.21
standard deviation	0.42	0.56	0.66	0.61



Figure 2: Project production report evaluation descriptive statistics

Specifically, as shown in Figure 2, through the analysis results, it is found that the structure of the reports of each group is reasonable, the logic is clear, and the division of labor among the members of the group is clear, but the ability to explain the work production process and the ability to reflect on the project production process needs to be strengthened.

5. Conclusions

Starting from the current status of project-based learning activity design, this research deeply ponders and analyzes a large number of current domestic and foreign results-oriented education

theories and project-based learning activities practice cases. Learning objectives, professional comprehensive ability leading to future employment, planning project tasks from a curriculum level, and more reasonable evaluation methods have four obvious characteristics. For this, a project-based learning activity design framework based on the theory of outcome-oriented education was initially constructed, and then based on the framework. Redesign the learning activities of the course and carry out a one-semester teaching practice. Through the analysis results of various types of data collected during the three rounds of implementation, such as project works, production reports, interview questionnaires, etc., the implementation process is reflected, summarized and analyzed. Improvement, and finally obtain a relatively complete project-based learning activity design framework based on the theory of outcome-oriented education, which provides a certain reference and reference for the design and development of current project-based learning activities in colleges and universities.

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