

Research on the practice of group inquiry teaching method based on the integration of production and education

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Abstract: The group inquiry teaching method based on the integration of production and education needs to follow: the principle of combining inquiry with teaching, the principle of combining group development with personal development, the principle of combining process supervision with stage assessment, and the principle of combining imitation with innovation. The four principles can effectively avoid deification and generalization of the group inquiry teaching method, Based on the four principles, the group inquiry teaching method is divided into five stages: creating scenes, providing resources, independent inquiry, teachers' teaching, assessment and evaluation. The practice research is carried out by using the studio public welfare project and teachers' agricultural assistance project. Through the comparison of the statistical data between the control group and the experimental group, it is proved that the group inquiry teaching method is helpful to improve the teaching quality in the practice teaching.

Key words: Integration of production and education; Group inquiry teaching method; Practical research

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1. Principles of group inquiry teaching method based on the integration of production and education

1.1 The principle of combining inquiry and teaching

Both teaching method and inquiry teaching method have their shortcomings. Teaching method needs to avoid the continuous indoctrination of the whole class, lack of inquiry, lack of feedback and lack of students' independent thinking. Inquiry teaching method needs to avoid students' constant inquiry, lack of teaching, lack of management, and lack of teachers' emphasis and demonstration on key and difficult points. Based on the integration of production and education, the group inquiry teaching method is characterized by practical teaching, which needs to follow the principle of combining inquiry and teaching, and handle the relationship between "release" and "receive". In the learning stage of new knowledge and new skills, teachers actively participate in teaching, and in the implementation stage of project tasks, group cooperation and students' independent exploration are the main methods.

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1.2 the principle of combining group development with personal development

Group development and personal development can promote each other and develop together when their goals are the same. A good group is conducive to personal development. The development of a group cannot be separated from individual efforts. Each member contributes to the group. The group tends to be good, and group development and personal development can enter a virtuous cycle. The group inquiry teaching method based on the integration of production and education is characterized by team cooperation. It needs to follow the principle of combining group development with personal development, timely help team members improve their ability level, timely adjust the division of labor according to the project progress, timely help solve the problem of poor team cooperation, and timely deal with the problem of mismatch between personal development and collective development.

1.3 the principle of combining process supervision with stage assessment

Based on the teaching practice of integration of industry and education with technical assistance, teachers have dual identities, including school teachers and enterprise masters. Supervision and assessment are the basis of modern enterprise management, and help to achieve the strategic objectives of the team. Under the integration of production and education, the group exploration practice project has long cycle, long time and complicated process. Without process supervision and stage assessment, the quality of the work cannot be guaranteed. The group inquiry teaching method based on the integration of production and education is characterized by enterprise task driven, which needs to follow the principle of combining process supervision with stage assessment, so as to effectively avoid students' procrastination and lax discipline, unclear division of labor, unclear responsibilities, and only assessment without supervision.

1.4 the principle of combining imitation with innovation

Imitation is the basis of innovation. In the stage of technical learning and skill improvement, imitation will make the implementation of group tasks less detours and get twice the result with half the effort. Through a large number of imitation, we can master a technology faster and better, deepen our understanding and understanding. Only when we deepen our understanding to a certain extent, can we improve our innovation ability and innovative thinking. The characteristics of the group inquiry teaching method based on the integration of production and education are market-oriented, which needs to follow the principle of combining innovation and imitation. It requires the independent inquiry process to benchmark the production process of the enterprise, requires the practice teaching process to be consistent with the enterprise development process, requires paying attention to the imitation training of basic skills, and focuses on cultivating the innovation ability of optimization and improvement.

2. Practice of group inquiry teaching method based on the integration of production and education

The inquiry teaching method has gone through the stages of teaching theory, exploration, construction and practice, and reflection and improvement of scientific inquiry teaching. In the practice of group inquiry teaching method, it is easy to deify and generalize the teaching method, and arbitrarily label the already familiar forms of teaching and learning with inquiry. Activities such as task inspection and evaluation, which are independently discovered and completed by students, are classified as inquiry. Facing the deified and generalized group inquiry teaching method, we need to treat it with a scientific method, follow the four principles of the group inquiry teaching method under the integration of production and education, and avoid going to extremes. Based on the above analysis, the group inquiry teaching method is divided into five stages, and practical exploration is carried out. The specific strategies are as follows.

2.1 creationsituation

Creating a scenario is to ask questions. We need to pay attention to the authenticity and feasibility of the scenario. Encourage professional course teaching to combine with production practice, develop case situational teaching activities, and the school level needs to actively deepen the integration of production and education, introduce enterprise projects, carry out school enterprise cooperation, and serve education and teaching. The design and creation of the public welfare poster for the new media studio traffic safety publicity project of Boluo Polytechnic School (hereinafter referred to as the studio public welfare project) is as follows: now a county is building a civilized city. In order to improve the citizens' awareness of civilized traffic, the traffic police department needs to put up the public welfare poster for traffic safety in a prominent position on the road fence, with a size of 110cm*60cm and horizontal screen layout, The publicity content should not be too bloody and suitable for posting on the road. Please complete the production according to the requirements. The teachers of the research group of Huizhou Institute of technology carried out the practice project of helping farmers (hereinafter referred to as the "teacher helping farmers project"), led the students to help farmers, and made H5 propaganda pages. According to the needs of farmers, the following scenarios were created: farm a planted 210 Mu of bayberry, which entered the mature stage. Because it was planted in the deep of Xiangtuo Mountain in the National Nature Reserve, the traffic remained unchanged, but the environment was beautiful, and the bayberry was of high quality and low price, The farmer hopes to realize the mode of tourism + sales through the publicity of the mutual benefit network. After many communications with the farmer, he finally chose to make H5 publicity page and carry out the promotion in the form of forwarding awards in the circle of friends. Please make H5 page for farm a.

2.2 provide resources

Inquiry teaching is not to give up the dominant position of teachers. After creating project scenarios, it provides enough imitation resources for students. Before group task exploration, it provides relevant sample information resources for reference, provides excellent typical work cases for imitation, and master the technical essentials through a large number of imitation training. After the completion of the work, organize students to hold a brainstorming discussion to summarize the similarities and differences of the imitation project, and then complete the creative planning of the project. Studio commonweal project: the studio provides software and hardware resources related

to team exploration tasks, provides a trinity training place of “training room + studio + training room”, sets up a graphic design team, and assigns an instructor to track and manage. Before carrying out the enterprise project, students independently explore and complete more than 20 traffic award-winning posters for imitation training. The teacher led the students to analyze the award-winning cases, complete the summary, use brainstorming to complete the planning of the design concept, submit 12 creative planning cases of civilized travel to the partner for review, and provide technical support for the whole process of color matching and typesetting design during the production process. Agricultural assistance project: the project host applied to the school for the hardware resources of the e-commerce training room. The teachers of the research group undertook the support of relevant resources such as technical guidance and enterprise communication. The teachers went to the farm to conduct field research, took real photos of agricultural products, taught students about agricultural products after returning to school, provided material and picture resources, and organized students’ copywriting. And provide technical support and guidance, and provide 7 excellent agricultural products H5 publicity cases for imitation before the production of H5 agricultural aid project publicity page.

2.3.Independent inquiry

Independent inquiry is the core of inquiry teaching method, and it is also the difficulty of group inquiry teaching method. Autonomous inquiry is conditional autonomy. Teaching and inquiry are combined. For example, the instructor adjusts the progress in real time according to the progress, actual needs or skill level, judges whether to intervene in the teaching according to the difficulty of the task, judges whether to correct the deviation according to the completion of the task, and judges whether to assist in handling the bottleneck according to the cooperation of the task. Studio public welfare project: after completing the design of the public welfare poster for traffic safety, the group inquiry production process was started. However, during the production process, the teacher provided the project schedule and production process, participated in the design of the first draft and listened to the group discussion, did not interfere with the production process, commented on the first draft, the first draft and the second draft of the poster design and put forward suggestions for revision. The third draft will be provided to the partner, and will be revised and finalized according to the feedback of the enterprise. For the agricultural assistance project, after completing the H5 design scheme, the independent learning of related knowledge of Myrica rubra and Xiangtoushan Nature Reserve was started. Students independently explored and completed the production of the first draft of the page about Myrica rubra introduction, growth environment, product efficacy, fresh picking, etc., the teacher put forward suggestions for revision, and the small team members completed the production of the second draft.

2.4 teaching by teachers

Teachers’ teaching is mainly to solve the technical difficulties encountered by students, ensure the coordinated development of members in the group, quickly master the corresponding knowledge and technology through teachers’ teaching, so as to improve the technical ability and cooperation ability of members, and ensure the coordination of group development and personal development. Teachers’ teaching can not only help team members master new knowledge and skills, but also effectively reduce the time cost. Studio commonweal project: in the process of self-study and production of commonweal poster design, there are some problems that are unfamiliar with the basic skills of PS, such as the inability to use pen tools, unreasonable color matching, too complex structure and layout, and lack of standardization, which lead to the theme that the commonweal poster needs to express is not prominent. Teachers are involved in teaching how to highlight the new skills and knowledge of the theme, and re-emphasize the unfamiliar problems with the use of pen tools through demonstration. In the agricultural aid project, the main problems encountered by students were the disordered layout of H5 page and the unreasonable color matching. The teacher commented on each work and gave suggestions for revision, and taught how to effectively publicize the farm picking activities.

2.5 assessment and evaluation

The project practice learning based on the integration of industry and technology needs both supervision and assessment. The supervision should be carried out in the whole process, and the assessment should be phased. The assessment should be carried out in stages from quantitative and qualitative indicators. Therefore, the studio has formulated the assessment and evaluation index of project practice teaching and implemented the deduction system, with an initial total score of 100 points. 40% of the project progress: 10 points will be deducted if the task is completed within the time required by the partner and is late for one day; Practice duration accounts for 30%: if the average practice duration of each person in the group is less than 90 minutes per day, 5 points will be deducted every 10 minutes; Cost control accounts for 15%: 1 point will be deducted each time equipment damage, rework, shutdown and help seeking occur; Brainstorming accounts for 5%: 5 brainstorming meetings are required to solve technical problems, and 1 point will be deducted for each less meeting; Professional quality accounts for 10%: if the doors and windows of the training site are not closed, the sanitation is not cleaned, and the training equipment is not placed neatly, 1 point will be deducted for each time.

3. Conclusion reflection

In the spring semester of 2022, the “graphic design group” of the control group adopted the group inquiry teaching method, while the “e-commerce art group” of the experimental group did not reform and continued to implement the traditional practice teaching method. The two groups had the same number of members, all of whom were 4 students, and no one withdrew from the whole process. In the 18 week comparative practice study, the two groups adopted the same evaluation index for project practice teaching assessment and scored statistically, as shown in Table 1 below.

Table 1: comparative statistics of teaching method assessment and evaluation (Statistics duration: 18 weeks)

Project (proportion) group	Control group (e-commerce art group) Traditional practice teaching method	Experimental group (Graphic Design Group) Group inquiry teaching method
Project progress (40%)	The project is postponed for 2 days	The project is completed 1 day ahead of schedule
Practice duration (30%)	71 minutes / day / person	112 minutes / day / person
Cost control (15%)	Rework for 5 times, stop work for 1 time and ask for help for 1 time	Rework 3 times and ask for help 6 times
Brainstorming (5%)	3 seminars	9 seminars
Professional quality (10%)	The computer is not turned off once Not cleaned for 3 times	nothing
Total score (100 points)	57.5 points	91 points

Conclusion: through one semester's practice, it is found that the control group's teachers teach more, the team discipline is not strong, and the cooperation is weak. After students find problems, they are inert and dependent on teachers. The experimental group has a solid foundation of imitation production, and the team cooperation and independent exploration are well carried out. Because it's a real project, the enterprise has requirements for the completion time of the project, which leads to the strong desire of the experimental group for help. Through the analysis of the data, it was found that the experimental group performed well in the evaluation indicators, and the group inquiry teaching method could effectively mobilize the students' ability to solve problems, effectively improve the enthusiasm of students' learning and practice, and the duration of practice was significantly improved; Effectively implement the whole process supervision and reduce the number of rework; Effectively mobilize the enthusiasm of students' discussion and communication, brainstorming will significantly increase; Effectively improve students' self-study and cooperation ability. Through the above analysis, it is found that the experimental group has achieved good results in imitation production, information retrieval, autonomous learning, error correction improvement, communication and discussion, team cooperation and other aspects, which proves that the group inquiry teaching method is helpful to improve the teaching quality in practice teaching.

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