Applied & Educational Psychology (2025)
Clausius Scientific Press, Canada

DOI: 10.23977/appep.2025.060113
ISSN 2523-5842 Vol. 6 Num. 1

Exploration of Teaching Reform of Research Methods in Psychology under Project-based Teaching Mode

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Keywords: Project-Based Teaching; Psychology Research Methods; Teaching Reform

Abstract: The teaching mode of Research Methods in Psychology is closely related to the cultivation of psychology professionals. Enhancing the teaching quality of this course is conducive to cultivating innovative talents with solid theoretical literacy and excellent practical skills in psychology, laying a solid foundation for their future academic or professional careers. This study analyzes the problems existing in the current teaching process of psychology research methods, focuses on the reform of the course to promote the combination of theory and practice, stimulate learning motivation, and improve problem-solving ability, introduces the concept of project-based teaching into the teaching of psychology research methods, and constructs a teaching mode based on project-based learning, in order to improve the quality of teaching and promote the cultivation of high-quality talents.

1. Introduction

With the increasing competition of globalization, the cultivation of innovative talents has become a necessary way for the country to enhance its international competitiveness. As an interdisciplinary discipline, psychology plays an important role in the fields of education, health care, social problem solving, public policy making, disaster response and so on. Therefore, the quality of training innovative talents in this specialty has been paid more and more attention [1]. In addition, in order to adapt to the development requirements of the new era, the party and the state pointed out the need to strengthen the construction of the social psychological service system, and the construction and operation of the system also need to have high-quality psychology professionals as support. However, from the point of view of the current employment rate and the actual work situation, the quality of personnel training in psychology has not kept pace with the times, and it is unable to meet the social demand for psychology professionals [2-3]. In order to effectively deal with the current challenges facing the training of personnel in this specialty, and to cultivate professionals with a systematic knowledge system, the ability to innovate, critical thinking, and the ability to solve practical problems, the discipline of psychology should focus on the combination of theory and practice [3-5].

"If you want to do a good job, you must first sharpen your tools." The development of science

cannot be separated from the progress and development of research methods [6]. Students cannot lack the learning and application of scientific research methods if they want to have a solid grasp of subject specialties, develop and improve their professional skills as well as their employment and entrepreneurial abilities [7]. Research Methods in Psychology, as a course carrier for the training of psychology professionals, is a theoretical and practical course: theoretically, it cultivates students' scientific research thinking and innovation ability through the comprehensive study of methodological courses such as Experimental Psychology, Psychological Measurement, Psychological Statistics, and so on, which are offered in the previous period; practically, psychological research methods are carried out in the review of literature, selection of research topics, research design, data collection and processing, and dissertation writing and other psychological scientific research practices in the implementation process, the course teaches how to standardize and scientifically conduct psychological research at the same time, to cultivate the comprehensive ability of students to use psychological expertise to solve real problems in social practice [8-9]. It can be seen that the course of psychological research methods is a necessary condition to ensure the overall teaching quality of psychology and improve the quality of the discipline, and is also the main carrier and channel to train students' scientific research literacy. The teaching quality of the course plays a key role in expanding students' scientific research thoughts, forming students' scientific research consciousness, and improving students' critical thinking and innovative consciousness. Courses are an important way to help students solve the lack of connection between theory and practice and improve their problem-solving ability [10-11]. However, in the actual teaching process, there are still some teachings “pain points” in the teaching mode of this course. Therefore, it is very necessary and meaningful to reform the teaching mode of psychology research methods course to improve its teaching effect and quality.

2. The Main Problems in the Teaching of Psychology Research Methods Course

In recent years, with the deepening and comprehensive development of curriculum reform, many teachers have reformed the teaching mode and method of psychology research methods course. Although the teaching of psychology research methods course has made obvious progress, from the point of view of teaching effect as well as the actual needs of the society, there are still many shortcomings in the teaching of psychology research methods course. At present, the following problems mainly exist in the teaching of psychology research methods course.

First, the connection between theory and practice is insufficient. On the one hand, at present, teachers basically adopt the traditional lecture teaching mode. This teaching mode is mainly teacher-centered and textbook-centered, and the teaching process is mainly carried out in the way of knowledge transfer, focusing on theoretical knowledge such as teaching the basic principles, scope of application and operational steps of different psychological research methods, neglecting the active construction of students' meaning of knowledge, and lacking sufficient practical links, which leads to a disconnect between students' theories and practices, and makes it difficult to cultivate students' scientific research thinking, problem awareness and innovation ability, and also makes it easier for students to develop a better understanding of psychology, and to develop a better understanding of psychology. It is difficult to cultivate students' scientific research thinking, problem awareness and innovation ability, and it is also easy for students to produce the value cognition that the course is not “practical” [2,8]. On the other hand, although many domestic universities have adopted the practical teaching mode to reform the course, there is an excessive tendency of practical experience in the teaching process, ignoring the guiding nature of theoretical knowledge, which leads to students in the real scientific research and practice stage still can not flexibly apply the methods learned, the face of the problem of the phenomenon of being unable to

do anything [10].

Secondly, students' initiative is insufficient, lack of internal drive, and poor learning effect. Psychology research methods course of natural science attributes are more obvious, compared with other courses, the teaching content is more abstract, lack of “fun”. In the past, teachers were prone to neglect the teaching process of applying theoretical knowledge to practical scenarios, resulting in students' participation and internal motivation for learning is not strong, lack of independent learning consciousness and inquiry behavior, and after learning the course, they are still unable to analyze and solve the practical problems with the scientific research methods of psychology [2-3].

Third, the teaching evaluation method is single and lacks multiple evaluation. The evaluation of the teaching effect of the course is mainly based on the final examination results and the usual results, which is based on the mastery of subject knowledge, and cannot evaluate the ability of knowledge transfer and actual scientific research ability; the main body of the evaluation is mainly based on the teacher's evaluation, and there is a lack of students' self-assessment, peer assessment and other multi-dimensional evaluation. This evaluation method has actually been separated from the goal of this course to cultivate students' scientific research ability and enhance their scientific research literacy, and does not really assess the extent to which the goal of this course has been achieved [3,11].

In summary, the existing pedagogical problems have led to “ineffective learning”, and students have experienced significant difficulties and adaptations in their subsequent academic careers and work. In academics, it is manifested that students have excellent grades in the courses, but in the specific practical research (e.g., thesis design and writing), they are unable to distinguish between independent variables and dependent variables, select appropriate research methods, conduct basic data analysis, write the opening report and dissertation, and are unable to understand the logic of the research, and there are irregularities in formatting and other problems. In the work, it is difficult to fit the social needs of employment difficulties after graduation, as well as employment can not meet the work needs, the need to “back to the furnace” retraining. Reflecting on the main problems existing in the teaching of the current “Research Methods in Psychology” course, the key lies in the lack of an important carrier linking course knowledge and practical problem solving in the course teaching. Therefore, this study introduces the concept of project-based teaching to reform the teaching of Psychological Research Methods. It is expected that this teaching mode can not only promote the combination of theoretical knowledge and practice, but also fully mobilize students' learning motivation, providing new teaching ideas for the cultivation of high-quality talents in psychology.

3. Constructing the Project-Based Learning Mode of Psychology Research Methods Course

3.1 Connotation of project-based learning

Project-based teaching, also known as Project-based Learning (PBL), is a kind of innovative and dynamic teaching method centered on students, aiming at practical application, and taking the project as the main line [12-14]. This teaching method can provide students with practical opportunities, encourage students to actively and proactively collect information, carry out exploration and research around the projects specified by the teacher or their own interests, and stimulate students' interests; through completing the projects, it can cultivate students' ability to apply what they have learned and to solve problems, as well as develop students' innovative thinking and sense of teamwork [11-15]. The characteristics and advantages of the project-based teaching method are exactly what is lacking in the current teaching of psychology research methods courses.

3.2 The main features of project-based Learning in psychology research methods courses

3.2.1 Students' initiative and cooperation

In the teaching of psychology research methods courses using project-based learning, the teacher is only a partner and facilitator, and in the whole process of project implementation, students change from passive knowledge receivers to active knowledge constructors, and really become the master of learning [13]. The whole process of project implementation is carried out in the form of teamwork, students with the same research direction voluntarily form a study group, obtain literature resources through the Internet, textbooks, academic journals and other channels, and utilize the network information platform, multimedia technology, classroom teaching and practical activities to implement the project. The cooperative learning approach can create a dynamic, open and complementary learning environment for students, which to some extent can cultivate students' interest in active participation and independent problem solving ability. In addition, in the process of determining and implementing the project, teachers will participate in the whole process of students' projects, actively help students find breakthroughs in solving problems encountered in the project, teach the essentials of solving related problems, and let students cultivate logical thinking in the process of problem solving; at the same time, they encourage students to solve practical problems, independently complete the project investigation, actively communicate with each other and take the responsibility during the implementation of the project. At the same time, students are encouraged to complete the project independently, communicate with each other actively and take the responsibility in the process of project implementation.

3.2.2 Authenticity and comprehensiveness of learning

The starting point of project-based learning lies in students' interests and needs. In the psychology research methods course conducted by project-based learning, each project is based on scientific concepts and knowledge, focusing on students' in-depth understanding of knowledge, core concepts and research principles. Therefore, it can promote the connection between theory and practice, combine the practical skills that students need to improve with the research direction they are interested in, based on the real situation, in the way of group cooperation and discussion, based on interest, focusing on the combination of disciplines, encouraging students to use the knowledge of disciplines, selecting the research problems based on real life and research frontiers, and solving the problems in a learning way. Thus, in the real situation and in the complete process of project implementation, students can cultivate their comprehensive psychological literacy, including logical thinking ability, innovation ability, problem solving ability, research writing ability, teamwork ability and self-management ability.

4. The Implementation Steps of Project-Based Teaching in Psychology Research Methods Course

4.1 Establish the project theme

According to the theoretical knowledge of “literature reading and research topic selection” in the course content, students can voluntarily form a study group from their own interests or social hot-spots, and through collecting and searching, skimming and screening, and intensively reading and organizing the literature, they can learn about the relevant research areas and determine the project theme. In this process, the group should divide up the work and list everyone's tasks, and the tasks should be specific and quantifiable, in order to stimulate students to complete the experimental research motivation. Scientific research begins with a question, and the process of

establishing the project theme for each group is the process of identifying the research question. In this process, the teacher should carry out comprehensive control and scientific planning, in the phenomenon or research area of interest proposed by the students, the problem as a guide, let the students express their own insights, through the students' discussion and thinking to guide the students to learn how to parse the life problem into a research problem by reading the literature, to cultivate the students' critical thinking and innovation ability. Eventually, each group identifies an actionable and extensible driving question based on a real-life situation. The whole process of establishing the project theme not only makes students will have a deeper understanding and experience of the theoretical knowledge in the course content, but also their scientific research literacy has been improved.

4.2 Decomposition of project content and refinement of objectives

After determining the theme of the project, each study group should read and report a lot of literature related to the theme of their group, and find their own innovations by discussing the relevant literature under the research direction. In this process, students can analyze and understand the research problem from multiple perspectives based on the literature through the disciplinary knowledge and life experience they already possess. The process of reading and reporting the literature can not only cultivate students' logical thinking and writing skills, but also give them a deeper understanding of the relevant knowledge in the module of variables and research design, the module of methods of obtaining variables and the module of statistical analysis in the textbook. And teachers should guide students to refine the research questions according to the actual situation, cultivate students' independent problem-solving ability, and ensure the feasibility of students' research questions.

4.3 Designing the project program

After the project content is decomposed, each group designs a specific program to solve the research problem according to their own research problem and related literature, including determining the research object, choosing the research method (experimental method or questionnaire method), specifying the research variables, choosing the research tools (experimental paradigm, scale or questionnaire), preparing the experimental materials, formulating the research procedures as well as considering the data analysis, and finalizing the experimental design through group discussion. This process focuses on guiding students to think independently and participate actively, and each group needs to listen carefully to the research proposals of the members of that group and put forward their own opinions and suggestions, explore better and new research methods, determine the optimal project plan, and build a foundation for the completion of the research report. Teaching in this way with group cooperation can not only enliven the classroom atmosphere, mobilize students' enthusiasm, but also increase students' interest in conducting scientific research in psychology. At this stage, the students' main tasks are to identify research tools, prepare experimental materials and develop experimental procedures, while the teacher's main task is to help the students judge the feasibility of the chosen paradigm and the implementation process, and provide inspirational guidance, and if necessary, provide some reference materials, such as common dictionaries, graphic libraries and so on.

4.4 Project Implementation

In the stage of completing the project, each group collects and analyzes experimental data according to their own experimental design, and finally organizes the research results and writes a

report. The focus of this stage is to put ideas into practice. In this stage, teachers should answer students' doubts and give appropriate practical guidance. For example, how the instructions should be expressed, what to pay attention to when using questionnaires, the importance of pre-experimentation, and how to handle experimental data. This can avoid affecting the experimental results due to the improper operation of the main test.

4.5 Presentation of results

Each group will share their research results, knowledge and skills learned in the project-based teaching with teachers and classmates in different forms by one or more members, the link is a summary and reflection of the students' learning process and an opportunity for students to learn and communicate with others, which can help students develop self-confidence and at the same time, broaden their horizons and be inspired by the research of other groups to improve their own group's research.

4.6 Evaluation of learning

Learning evaluation is a comprehensive assessment and important feedback of students' learning effect, as well as a reflection and improvement of the teaching process and teaching effect. Before the end of the Psychology Research Methods course, there should be sufficient time to evaluate the research project and teaching effect from multiple dimensions and levels. On the one hand, through evaluation and reflection, students can continuously improve their research design, learn and consolidate the relevant points of doing research in the process of criticism, so as to promote the enhancement of the efficiency of learning; on the other hand, it also provides the basis for the improvement of the teaching mode in the future. The main body of evaluation includes students' self-assessment, group members' mutual evaluation and teachers' evaluation; the dimensions of evaluation include knowledge mastery, skill application, innovation ability and teamwork; the forms of evaluation include process evaluation and outcome evaluation, which focuses on the results as well as students' growth and performance in the process of implementing the project [11].

5. Conclusion

The traditional teaching mode of psychology research methods course has not been able to adapt to the needs of the development of modern higher education, and a new teaching mode is indispensable in order to cultivate higher quality talents to meet the needs of society. Project-based learning, as a new teaching mode, dissolves the problems existing in the traditional teaching mode in the teaching of psychology research methods, on the one hand, it can make the teaching quality of the course significantly improved, so that students have a deeper understanding of the theoretical knowledge in the classroom through practice, and improve the enthusiasm, initiative and satisfaction of learning the course; on the other hand, a series of practical activities in project-based learning, can make the Students' ability to find problems, analyze problems, solve problems, innovation, critical thinking and teamwork are effectively exercised, which is conducive to improving the quality of students' graduation thesis as well as employment difficulties.

The teaching reform is a dynamic and continuous process, and the combination of psychological research methods curriculum and project-based learning needs to be perfected and deepened in teaching practice. First of all, teachers should keep up with the research frontier, constantly update the knowledge and skill reserve, and improve the teaching ability of project-based learning. Secondly, teachers should optimize the teaching design in real time according to the actual teaching situation. Finally, it is also very important to promote the translation of research results and learn

how to apply research results after finding and solving problems. In the future, students should be encouraged to translate research results into products or apply them to solve practical problems in society.

Acknowledgement

1) “Teaching Reform of Research Methods in Psychology - Project-based Teaching Based on Flipped Classroom” (Project No. 20221054), by the Teaching Steering Committee of Psychology in Higher Education of the Ministry of Education.

2) Teaching Project of Xinjiang Normal University, “Research on the Reform of Practical Teaching of Psychometrics Based on OBE Concept under the Reform of New College Entrance Examination”.

3) Teaching Project of Xinjiang Normal University, “Teaching Reform of ‘Research Methods in Psychology’ Course - Based on Project-based Teaching” (Project No. SDJG2021-31).

4) Xinjiang Uygur Autonomous Region Postgraduate Education Teaching Reform Research Project, “Research on the Cultivation Mode of Professional Degree Graduate Students” (Project No. XJ2021GY26).

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