

Long Term Tracking and Analysis of the Impact of Personality Psychology on Teaching

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Abstract: In modern society, with the rapid development of computer technology, teaching methods and approaches have also been greatly improved. However, in order to stimulate and guide students' learning potential, it is necessary to have a deep understanding of the differences between learners. This paper explores the application of personality psychology in psychology-related teaching subjects and its profound impact on students' learning outcomes through a three-year long-term follow-up study. This study uses a multidisciplinary research design to study the relationship between teachers' personality traits and classroom performance through a combination of quantitative and qualitative surveys. This project takes students as the research subjects, and uses questionnaires, classroom observations, student feedback, and classroom effectiveness evaluation to collect relevant data, and statistically processes the obtained data to determine the relationship between personality and educational outcomes. The experimental results show that after the teaching intervention based on personality psychology, the students' intrinsic motivation and extrinsic motivation scores have improved overall, reflecting the positive role of teaching methods in improving students' learning motivation. In terms of academic performance, students' scores increased by an average of 8.95 points, reflecting the effectiveness of teaching intervention in improving students' academic performance.

1. Introduction

For a long time, the education field has been exploring how to better improve students' learning ability. Personality psychology is a science that studies the relationship between people, and it has attracted more and more attention. The purpose of this paper is to analyze the practical application of personality psychology in psychology-related teaching subjects and its impact on student learning outcomes through a long-term follow-up study.

In educational practice, teachers often face the challenge of how to stimulate students' interest in learning and improve their learning efficiency. Personality psychology provides a perspective for understanding students' individual differences and helps teachers design teaching strategies based on students' personality traits. However, most of the existing research focuses on the short-term effects of teaching and learning, and there is a lack of in-depth discussion on the long-term effects

of personality psychology in teaching and learning.

In this study, a systematic personality test and assessment of teaching effectiveness were conducted on students in psychology-related courses in a three-year cycle. Through the collection and analysis of quantitative data, combined with qualitative interviews, this paper attempts to reveal the long-term effects of personality psychology in teaching and how teaching practices can contribute to the overall development of students. The purpose of the study was twofold: on the one hand, to assess the long-term impact of personality psychology teaching methods on student motivation and outcomes; on the other hand, to explore how teachers can use personality psychology theories to optimize instructional strategies for diverse students.

2. Related Works

Personality psychology is an emerging discipline. The meta-analysis study by Bleidorn et al. found that the stability and change of personality were regular over a long period of time [1]. Simanullang explored the concept of genetic intelligence in personality psychology and used the Stifin test as an example to demonstrate the important role of personality psychology in the field of educational psychology [2]. Nolting and Geiss introduced a complete teaching model and emphasized the important position of personality psychology in education [3]. Fitria provided improved insights for English research from the perspective of educational psychology [4]. Bocanegra et al. examined the potential of undergraduate school psychology programs to promote diversity in the field of school psychology [5]. Hammill et al. explored the impact of student engagement through a positive psychology intervention [6]. Wei and Jiang analyzed the problems and their countermeasures in the teaching and learning practices of elementary and secondary school mental health education [7]. Terrin and Triventi investigated the effects of school placement on student achievement and inequality through meta-analysis [8]. Grosz et al. reviewed the effects of arts education on personality change and called for further research [9]. Affuso et al. examined the effects of teacher support, parental supervision, motivation, and self-efficacy on student academic performance over time [10].

Although the above studies provide us with valuable insights into the application of personality psychology in education, there are still some shortcomings. For example, most of the existing studies focus on specific educational stages or specific personality traits, and lack a comprehensive analysis of the application of personality psychology in different educational contexts. In addition, most studies focus on the immediate impact of personality psychology, while its long-term effects and potential mechanisms in teaching practice are insufficiently explored. This study aims to fill this gap by providing an in-depth analysis of the application of personality psychology in psychology-related teaching subjects and its long-term impact on student learning outcomes through a three-year long-term follow-up study. The study will not only focus on the direct link between personality traits and learning motivation and outcomes, but will also explore how teaching methods, learning environments, and individual differences interact with each other to influence students' learning processes. Through this study, we expect to provide educators with more in-depth insights that will help them design more effective teaching strategies for the holistic development of students.

3. Methods

3.1 Data Collection

Through material collection, this paper tries to get a comprehensive understanding of the function of personality psychology in teaching and learning from various aspects, so as to better

understand the function of personality psychology in teaching and learning. A quantitative study of students was conducted by measuring their basic personality, learning motivation scale, academic performance record, and learning satisfaction. Big Five Personality Questionnaire was used to assess the personality traits of the students and Learning Motivation Questionnaire was used to measure the level of motivation of the students. This paper explores the perceptions, experiences, and feelings of students, teachers, and educational administrators regarding educational interventions at three levels. The immediate and long-term effects of the intervention were tracked and evaluated based on three phases of data collection before, during, and after the teaching intervention. The main research methods used in this study were: before the implementation of the health promotion, the implementation of the mid-period questionnaire, and the follow-up and evaluation of its long-term effects at the end of the study. To solve the above problems, this paper will be tested through the pre-testing phase to ensure the universality of the developed method. Secondly, the standardization of data collection is strengthened to make data collection more standardized. It also establishes a relevant data processing system to carry out real-time monitoring and quality control of the collected information to ensure its truthfulness and completeness.

3.2 Instructional Intervention

The teaching intervention was a key component of this study, designed to explore the application of personality psychology principles in enhancing teaching effectiveness. Specific details of the teaching intervention are shown in Figure 1:

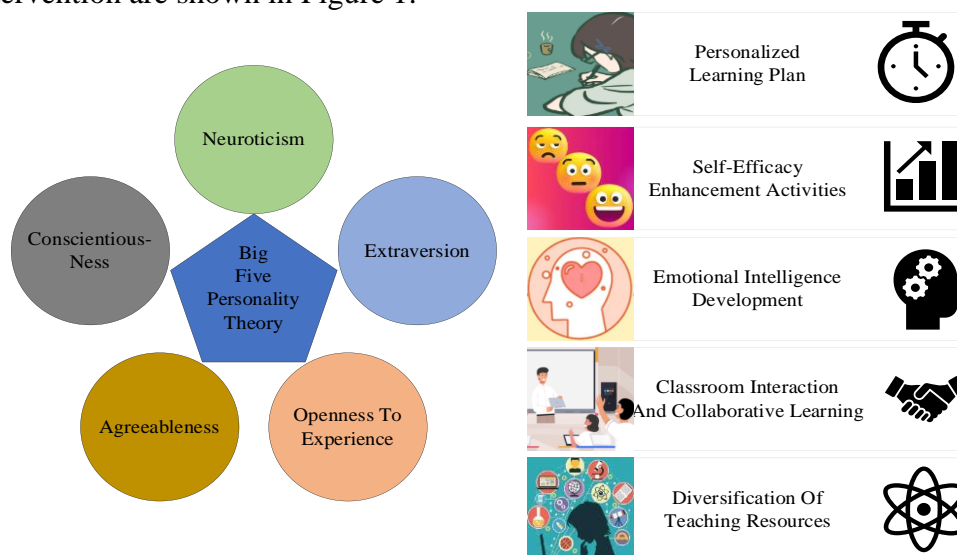


Figure 1: Instructional Interventions

This study plans to implement a series of personality psychology-based instructional interventions that are designed to enhance student learning experiences and outcomes through individualized instructional strategies. The interventions include personalized learning plans, self-efficacy enhancement activities, emotional intelligence development, classroom interaction and cooperative learning, and diversification of instructional resources. The personalized learning plans are designed to be individualized based on students' personality traits and learning styles, including more exploratory and creative learning tasks for students with highly open-minded personality traits. Self-efficacy enhancement activities enhance students' self-confidence and self-efficacy through group discussions, role-playing and reflective writing, encouraging them to actively participate in classroom discussions and learning activities. Emotional Intelligence Development: Emotional Intelligence training helps students to better understand and manage their own emotions, as well as

recognize and respond to the emotional needs of others, thus promoting positive interpersonal relationships and learning atmosphere. Classroom Interaction and Cooperative Learning uses group cooperative learning, peer teaching and interactive lectures to increase student participation and collaboration, while promoting complementarity and mutual support among students with different personality traits. Diversification of Teaching Resources Diversified teaching resources are provided, including multimedia materials, online courses and interactive software, to meet the needs of students with different learning styles and personality traits [11-12].

3.3 Research Design

This paper utilizes a tracking methodology to examine the role of students' personality psychology as it applies to teaching and learning. Through tracking, it was observed how teacher interventions impacted student learning outcomes in the classroom. Undergraduate students in the School of Psychology were selected to ensure a representative and diverse sample. A stratified sampling method was used to ensure a balance of factors using different grade levels, gender, and basic personality tests. The variables included: personality traits, motivation, academic achievement and engagement. A questionnaire was administered to the subjects by using a standardized personality test scale to assess the personality traits of the students. Students' achievement was recorded in the form of quizzes and classroom assessments, while students' engagement was presented in the form of classroom observations and student feedback. By analyzing the personality traits, motivation, academic performance, and engagement of college students, these variables were empirically analyzed using structural equation modeling. Data were collected at three time points: pre-intervention, intervention and post-intervention.

3.4 Implementation

The implementation of educational interventions in accordance with the predefined objectives and norms is a key aspect of this study. Through a new curriculum model based on teacher training, this paper provides specialized training for participating teachers, including the basic principles of personality psychology, the use of teaching strategies, and teaching methods tailored to different personality traits. In terms of curriculum, the structure and outline of the courses are reorganized for different purposes and contents of the educational interventions, and different teaching materials and assignments are designed for the trainees in accordance with their individual characteristics and learning needs. In order to help participants to become more involved in the classroom, a support system is provided to help them familiarize themselves with the new curriculum, to help them solve any problems they may encounter in the course, and to build an evaluation and monitoring system to ensure the effectiveness of the project. In this way, teachers are able to keep track of classroom activities, evaluate their effectiveness, and make appropriate modifications based on feedback.

4. Results and Discussion

This study collects information about the individual differences of students at different levels through a careful assessment method, so as to achieve the purpose of individualizing education for teachers. Table 1 shows the scores of the 20 students who participated in the study in various aspects, which include grade level, gender, cognitive level, learning styles, personality traits and previous academic performance. Cognitive ability scores refer to students' ability to process knowledge and solve problems, while the classification of learning styles (1 for visual, 2 for hands-on, and 3 for listening) can reflect which learning style is favored by different students. The Prior Academic Foundation Score, on the other hand, is based on students' academic performance

prior to enrollment and provides important contextual information for instructional interventions. Individual student difference data are shown in Table 1:

Table 1: Individual student differences

Student ID	Grade	Gender	Cognitive Ability	Learning Style	Prior Academic Assessment
S01	Freshman	Male	85	1	64
S02	Freshman	Female	81	2	85
S03	Freshman	Male	92	2	63
S04	Freshman	Female	95	1	60
S05	Freshman	Male	92	3	66
S06	Sophomore Year	Female	83	2	63
S07	Sophomore Year	Male	88	3	62
S08	Sophomore Year	Female	81	2	63
S09	Sophomore Year	Female	87	1	82
S10	Sophomore Year	Male	85	3	65
S11	Junior Year	Female	81	2	63
S12	Junior Year	Male	84	2	81
S13	Junior Year	Female	93	2	66
S14	Junior Year	Male	92	1	83
S15	Junior Year	Male	86	3	62
S16	Senior Year	Female	89	2	60
S17	Senior Year	Female	86	2	60
S18	Senior Year	Male	91	1	81
S19	Senior Year	Female	90	3	73
S20	Senior Year	Male	95	2	82

By analyzing the data in Table 1, several key trends can be observed. First, cognitive ability scores varied among students and there was diversity in learning styles. In addition, the distribution of prior academic foundation scores reveals the level of knowledge and ability of students prior to enrollment, which provides an individualized starting point for instructional interventions.

4.1 Changes in Students' Personality Traits

This paper focuses on personality traits that are related to individual development and serve as important markers for evaluating the effectiveness of educational interventions. In order to gain insight into the long-term effects of the personality psychology instructional intervention on students' personality traits, baseline personality tests were administered to all participants through standardized personality assessment tools that included, but were not limited to, the Big Five Personality Inventory to quantify traits such as openness, responsibility, extroversion, agreeableness, and neuroticism. The same evaluation was carried out in the middle and final phases of the experiment to track personality traits over time. A combination of qualitative and quantitative research methods was used to collect and analyze the data over the three-year length of the study. Figure 2 shows the data on personality trait changes, demonstrating the personality trait scores of

the 20 students at the beginning, middle and end of the study:

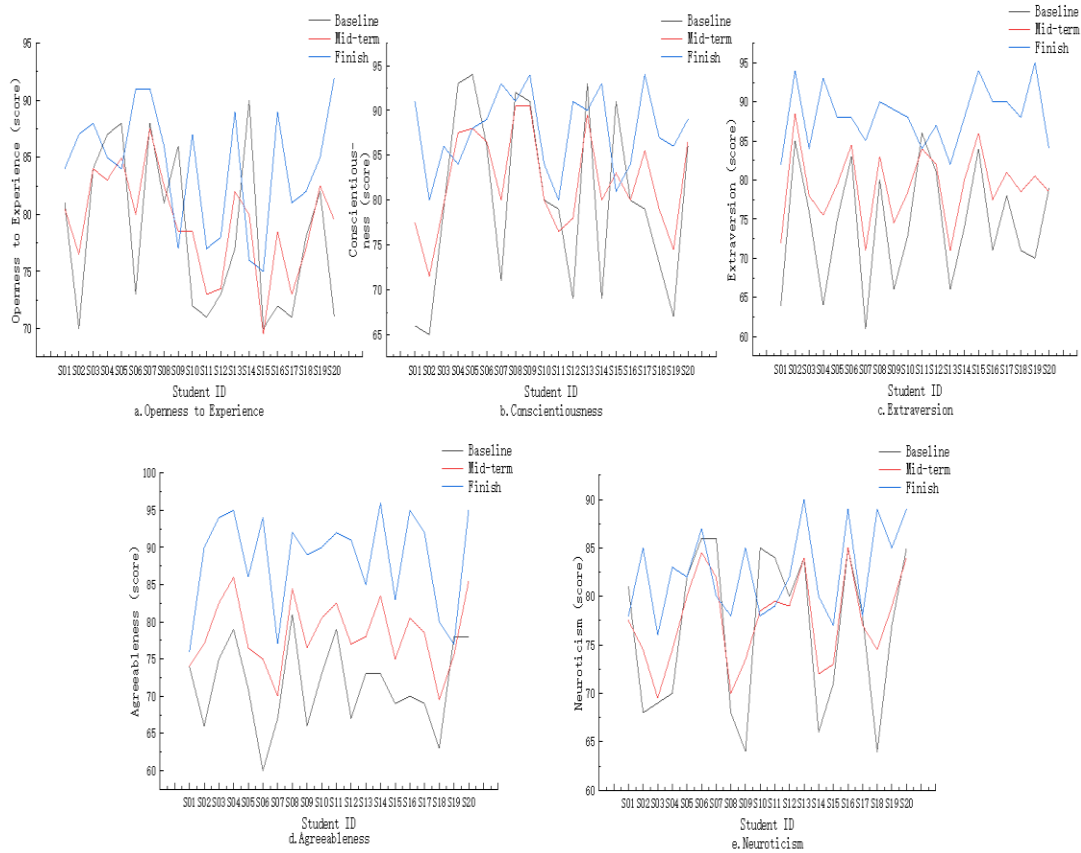


Figure 2: Student personality trait scores

From the data in Figure 2, it can be seen that students' traits of Openness, Responsibility, Extraversion, Likability, and Neuroticism in general increased to varying degrees from the beginning to the end of the study, with the majority of the students increasing their scores on Openness, and that the instructional interventions may have facilitated the receptivity of the students to new ideas, experiences, and creative activities. By comparing the data at baseline, midterm, and end, some students' scores fluctuated between midterm and end, reflecting to some extent the process of adaptation to the instructional intervention or changes in the students' personal growth cycle. The data in Figure 2 demonstrate that the instructional intervention positively impacted students' personality trait development, particularly in the areas of openness, responsibility, and extraversion.

4.2 Learning Motivation

In exploring the aspect of motivation to learn, we will concentrate on analyzing the changes and influences on students' motivation to learn in response to instructional interventions. Learning motivation is seen as a key driver in the learning process, influencing students' learning behaviors, engagement, and academic achievement. This study will use both quantitative and qualitative methods to assess students' motivation to learn. Quantitative data will be collected through a standardized learning motivation questionnaire that includes assessment indicators for intrinsic motivation (e.g., curiosity, interest in learning) and extrinsic motivation (e.g., rewards, evaluations). Qualitative data, on the other hand, will be obtained through semi-structured interviews, focus groups, and classroom observations to gain a deeper understanding of students' personal feelings,

attitudes, and reasons behind their motivation. Table 2 shows the assessment data for learning motivation, demonstrating students' intrinsic and extrinsic motivation scores at different points in time:

Table 2: Assessment of learning motivation

Student ID	Intrinsic motivation score			Extrinsic motivation score		
	Baseline	Mid-term	Finish	Baseline	Mid-term	Finish
S01	5.9	6.2	6.8	8.5	8.8	9.1
S02	6.7	7.1	7.3	5.1	5.7	5.8
S03	5.4	6	6.1	6.4	6.7	7.2
S04	7.8	8.2	8.7	6.4	7.2	7.4
S05	7.8	8.3	8.4	7.5	8.4	9.2
S06	7.8	8	8.5	8.4	8.6	9.5
S07	7.2	7.9	8.2	6.6	7	7.5
S08	5.2	5.8	5.9	6.9	7	7.9
S09	5.4	5.6	5.8	7.7	7.8	8.5
S10	5.9	6.1	6.3	6.5	7.2	8
S11	8.6	8.8	9.6	8.4	9.1	9.9
S12	5.9	6	6.6	6.5	7.3	8.1
S13	7.4	7.6	7.8	6.8	6.9	7.7
S14	5.3	6.1	6.7	8.3	8.7	9.3
S15	6.5	7.1	7.3	6.4	6.8	7.2
S16	8.4	9	9.8	6.3	7.1	7.2
S17	5.9	6.2	6.6	6.6	7.2	7.8
S18	6.2	6.7	7.1	8.3	8.6	9.4
S19	7.6	7.9	8.7	6.3	7.1	7.8
S20	8.1	9	9.6	7.8	8	8.9

From baseline to end, most students' intrinsic motivation scores showed an upward trend, suggesting that the instructional intervention may have enhanced students' interest and engagement in the content. Students S11 and S16 showed more significant increases in intrinsic motivation change, from 8.6 and 8.4 to 9.6 and 9.8, respectively. In the extrinsic motivation change data, the majority of students' extrinsic motivation scores also increased over the study period. Student S05's extrinsic motivation score increased from 7.5 to 9.2, and the instructional intervention was effective in motivating students by providing positive feedback and reward mechanisms. Teacher intervention in teaching can be effective in improving students' internal and external dynamic learning. The overall improvement of learning motivation cannot be achieved without personalized teaching methods to create a good learning atmosphere and motivate students. However, as there are differences in students' motivation due to differences in the types of students, teachers should pay more attention to the needs of students during the teaching process to ensure that students are properly supported and motivated to learn.

4.3 Academic Performance

Academic performance is an important indicator of student learning outcomes and a key aspect of assessing the effectiveness of instructional interventions in this study. In this paper, we used a variety of methods to collect and analyze academic achievement data to gain a comprehensive understanding of students' academic performance. By comparing grades at baseline and post-intervention, we can assess the specific impact of instructional approaches on student academic

performance. Data on the change in student performance before and after the intervention are shown in Figure 3:

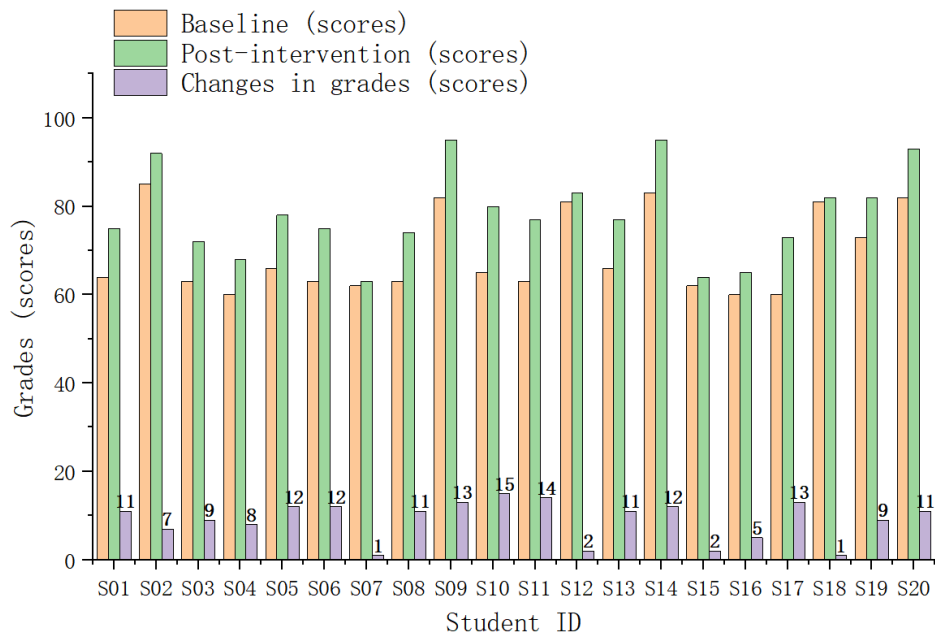


Figure 3: Changes in grades

From Figure 3, it can be observed that all students' grades generally improved after the intervention, and that the instructional intervention may have had a positive effect on students' learning outcomes. Specifically, students S10 and S05 showed the most significant improvement in their scores, by 15 and 12 points, respectively, which may reflect the positive response of these students to the instructional intervention or their adoption of effective learning strategies in the learning process. Students S07, S12, S15, and S18 showed smaller gains in achievement, ranging from 1 to 2 points, and for these students, the instructional intervention was less effective. Students with lower baseline scores (e.g., S16 and S17) had greater post-intervention gains, and the instructional intervention had a greater boost for students with weak baselines. Teaching intervention has a positive effect on learning performance, but its effect varies from individual to individual. In future research and teaching, more targeted and effective learning methods should be used according to the different characteristics of individual learners.

4.4 Results and Discussion

From the perspective of academic performance, most students' learning achievements have significantly improved compared to before the baseline, indicating that educational intervention has a certain promoting effect on their learning and application. Especially when the baseline scores are not high, teacher intervention can give them the support and support they need to help them keep up with their learning progress. The results of the study show that teacher intervention not only improves students' learning achievements, but also improves their internal motivation, which is achieved by increasing their interest in the knowledge they have learned and improving their self-efficacy.

5. Conclusion

Through three years of longitudinal follow-up, this article deeply explores the impact of

personality psychology teaching intervention on students' learning outcomes. Research results show that applying the principles of personality psychology to teaching practice significantly improves students' academic performance. By taking into account students' individual differences and learning motivations, educators can design more effective teaching strategies that promote the overall development of students. Through teaching intervention, students' learning motivation and enthusiasm have been improved. However, this study also faced shortcomings such as small sample size, diverse intervention methods, and inconsistent implementation processes. Further research should expand the objects of investigation, explore various intervention methods, and extend this research to broader educational contexts.

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