The Development of an Instructional Model Based on Rogers' Theory to Enhance the Adversity Quotient for Guangxi International Business Vocational College

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Abstract

This study aimed to investigate the current status of adversity quotient (AQ) development, develop an instructional model based on Rogers' theory, and assess the impact of the model on students' AQ. The study involved 33 first-year students from infant care services and management majors at Guangxi International Business Vocational College. Research tools included questionnaires, interviews, lesson plans, the Adversity Quotient Scale, observation forms, and interview forms. The study comprised three steps: studying the current situation of AQ development, developing the instructional model, and implementing and improving the model. Data were analyzed using statistical and qualitative methods. Results showed four aspects of existing problems in college students' AQ: students, teachers, learning processes, and environment. The instructional model comprised four components: Principle, Objective, Learning Process, and Result. After implementing the model, students' AQ significantly improved compared to pre-class levels ($p < 0.01$). This study provides insights into addressing challenges in college students' AQ development and demonstrates the effectiveness of an instructional model grounded in Rogers' theory for enhancing students' AQ. Enhancing college students' adversity quotient is of significant importance for effectively coping with adversity in their daily learning life.

Keywords: instructional model, rogers' theory, adversity quotient, vocational college

1. Introduction

1.1 Introduce

Education in the 21st century aims to improve the education and quality of life of the population in each country by setting aspirations to lead to a better life for everyone to have a chance to lifelong learning. However, many college students are under great ideological pressure, such as pressure to study, lack of independence, pressure to adapt to the environment, employment pressure, etc. In addition, college students are young, lack life experience, and have a poor ability to resist frustration and adjust. In the face of difficulties and adversities, it is particularly easy to fall into the mire of negativity and be unable to extricate themselves. More and more college students can't bear the problems of poor interpersonal relationships, loveliness, poverty, employment, etc., and unhealthy psychological phenomena such as anxiety, insomnia, depression, and fear. Some college students even hurt themselves, have mental breakdowns, and commit suicide. According to World Health Statistics (2022), suicide was the third leading cause of death among girls and young women aged 15–29 years and fourth among boys and young men in the same age group in 2019. From Report On National Mental Health Development In China (2021-2022): Among college students, 13.28 % were at risk of mild depression, and 3.30 % were at risk of major depression. At the same time, 32.53% of students had mild anxiety risk, 3.47% had moderate anxiety risk, and 1.43% had severe anxiety risk.

Ministry of Education of the People's Republic of China (2011) issued the "Basic Requirements for the Teaching of Mental Health Education Courses for Students in General Institutions of Higher Education," specifically putting forward requirements for the main teaching contents such as "College Students' Stress Management and Setback Coping." Through teaching, students can correctly understand stress and setbacks and learn to manage stress and deal with adversity properly.

Therefore, it is very important to develop an effective method to cultivate students' resilience and mental health, improve students' adversity quotient, and help students better cope with adversity.

As a mental health teacher for freshmen at Guangxi International Business Vocational College, the researcher found that freshmen have mental health confusion in many aspects based on eight years of experience in psychological teaching and psychological counseling. Some students with serious psychological problems often do not know how to respond effectively when faced with adversity. Therefore, researchers believe that improving students' adversity quotient is of great significance to students' life development. The teaching method under the guidance of Rogers' theory can cultivate students' interest in a wide range of activities, form an optimistic attitude, help them grow healthily and happily, and help form a good way of thinking, forming, and behaving in the face of adversity. Therefore, according to the policy, this study designed a new teaching model based on Rogers' theory to improve the adversity quotient of college students, which is of great benefit to improve the health level of students.

1.2 Rationale

It can be observed that each student reacts differently to adversity. Some students will feel sorry for themselves when encountering adversity, complaining that life is not easy and God is unfair. On the contrary, some students become more courageous with every setback, just like brave mountaineers who keep climbing up. It can be said that this is all due to their high adversity quotient. Adversity Quotient is when people face adversity or setbacks; different people will have different reactions to adversity or setbacks, which is adversity quotient, that is, the ability to withstand pressure in the face of adversity and the ability to get rid of and solve difficulties (Stoltz, 1999). The adversity quotient can help college students overcome setbacks and difficulties and form a correct world outlook, values, and outlook on life. Enhancing students' adversity quotient can improve students' coping methods and coping skills, relieve self-pressure, improve self-quality, accumulate life experience, and cultivate anti-setback ability.

Based on summarizing the clinical psychology experience, Rogers proposed the theory of "non-guided customer-centered therapy" and the principle of nondirective teaching. A non-directive approach that "trends away from guiding and directing the client" and places "stress upon catharsis and insight" (Rogers, 1946 b, p. 415). Rogers argues that education should be student-centered, and students are the main body of education. Students are not passive recipients and indoctrinated objects of knowledge. In the learning process, students carry out learning activities according to their interests and hobbies and actively choose "meaningful" learning content according to their goals. The teacher's main responsibility in the teaching process is to create a "free, comfortable, sincere, accepting and understanding" learning atmosphere to guide students to self-learning and self-realization.

The teaching method under the guidance of Rogers' theory can cultivate students' interest in a wide range of activities, form an optimistic attitude, help them grow healthily and happily, and help form a good way of thinking, forming, and behaving in the face of adversity. Therefore, according to the policy, this study designed a new instructional model based on Rogers' theory to improve the adversity quotient of college students, which is of great benefit to improve the health level of students.

1.3 Literature Review

The adversity quotient was proposed by Stoltz (1997). He pointed out that in addition to IQ and emotional intelligence (EQ), another factor in learning success is the adversity quotient. According to Juwita et al. (2020), the adversity quotient is a person's response to overcoming an obstacle or problem. Pong and Lam (2023) believed that the adversity quotient is the ability to survive in the face of problems or difficulties in life.

Stoltz (1997) points out that the adversity quotient has the following effects:

1) The adversity quotient tests the ability to withstand and conquer adversity.

2) The adversity quotient predicts who will overcome adversity and who will be knocked down by it.

3) The adversity quotient predicts who will exceed expectations and who will not.

4) The adversity quotient predicts who will give up and who will persevere.

5) The adversity quotient is a scientifically based tool that can be used to improve responses to adversity and enhance

overall professional effectiveness.

6) The Adversity quotient is a new concept of success that tells you how to reach your potential.

Inverse quotient can predict: performance, motivation, empowerment, creativity, productivity, learning, vitality, hope, happiness, vitality, emotional health, physical health, persistence, resilience, ability to continuously improve, attitude, permanence, and response to change.

There are four dimensions of the adversity quotient, namely CO2RE (Stoltz, 1997)

1)Control: related to the extent to which there is control over the difficulties experienced.

2)Origin and ownership: answering the question about who or what the problem's origin is. The extent to which the source of difficulty is acknowledged.

3)Reach: answering the question of to what extent the difficulties will affect other aspects of life.

4)Endurance: answering the old question of how long these problems will last.

According to the clinical experience of psychological counseling, Rogers (1994) advocated humanistic educational thought in the process of education and teaching, and people-oriented education exists in the process of educational goals, educational ideas, educational content, educational means, and educational evaluation. People have the potential to learn and can consciously explore the unknown world towards their own goals. Education should conform to this essence and serve the realization of human individuality and freedom.

Research on adversity quotient (AQ) in education primarily focuses on students, exploring its impact on various aspects of their lives. Studies have investigated its effects on Mathematics learning achievement (Amir et al., 2021; Anggraini & Mahmudi, 2021; Juwita & Usodo, 2020; Darmawan et al., 2019; Hastuti, 2018), student performance, learning autonomy, and achievement (Safi'i et al., 2021). Ismawati & Andriyani (2022) found a significant positive correlation between self-efficacy and AQ, indicating that higher self-efficacy corresponds to higher AQ. Nimitniwat (2011) conducted a study aiming to enhance students' AQ in private universities through non-formal education activities based on Neo-humanist concepts and collaborative learning. The quasi-experimental research involved 40 freshmen, confirming that the experimental group exhibited significantly higher AQ scores than the control group and improved in endurance, origin and ownership, reach, and control aspects. Additionally, the experimental group showed significant improvement in AQ and learning achievement scores post-experiment. Zhao and Sang (2023) investigated the influence of emotional quotient (EQ) and AQ on individuals' career success, finding that certain aspects of EQ were positively associated with affective commitment. Resilience and grit, dimensions of AQ, showed varying effects on organizational commitment and job position, with resilience positively predicting job position. Menzies et al. (2024) examined the entrepreneurial development of Australian Indigenous female entrepreneurs (AIFE) amidst adversity, highlighting the role of AQ in enabling them to navigate challenges and establish businesses successfully. AIFEs' resilience, persistence, and proactive approach were crucial for managing adversities and achieving business success.

Rogers' humanistic view of teachers and students is "student-centered" and "creating a good atmosphere". Starting from the theory of "client-centered therapy", Rogers believes that education should be student-centered, and students are the subject of education. The primary responsibility of teachers in teaching is to create a learning atmosphere of "freedom, comfort, sincerity, acceptance and understanding", and guide students to learn independently and realize themselves. The most basic and valuable attitude of a teacher is truth or sincerity. Lessons will be more effective if teachers are face-to-face with students to establish barrier-free communication and relationships. The way to promote student growth and learning is for teachers to provide students with a safe and supportive environment based on a sincere emphasis on personal worth and dignity. This puts each student on a path of self-discovery and helps them develop self-esteem and autonomy in their learning.

Rogers' theory helps teachers create an atmosphere of trust in the classroom to foster and enhance curiosity and a natural desire to learn. They help students reward themselves and build confidence and self-esteem. It can reveal the excitement of intellectual and emotional discovery, leading students to become lifelong learners.

According to this study, Rogers's theory refers to that in a student-centered teaching environment, teachers promote students' learning with an indirect guiding ideology based on trust, empathy, understanding, and holding attitudes. More important is to promote students to become a sound personality and develop outstanding talents.

Research on adversity quotient (AQ) in education has shown its significant impact on learning outcomes, particularly in skills development. High AQ students demonstrate better resilience and problem-solving abilities, exhibiting a strong motivation to overcome challenges and maximize their potential. Studies by Hulaikah et al. (2020) and

Widodo et al. (2022) further emphasize the relationship between AQ and problem-solving skills, as well as its influence on teachers' professional competence. Bingquan et al. (2019) developed a standardized AQ measurement tool, demonstrating its reliability and validity for assessing AQ in Chinese universities. Additionally, interventions such as AQ development programs have been effective in enhancing resilience and stress management, as evidenced by Prakaew and Leesattrupai's (2017) study. Saguni et al. (2021) explored the correlation between AQ, teacher professionalism, and student-autonomous learning, highlighting the importance of improving AQ among educators to support student achievement and societal progress. These findings underscore the significance of AQ in education and its role in fostering resilience, problem-solving skills, and psychological well-being development among both students and teachers.

1.4 Research Question (s)

1) What is the current situation of adversity quotient development?

2) How to develop an instructional model of adversity quotient based on Rogers' theory?

3) What are the results of implementing an instructional model based on Rogers' theory for the first-year students at Guangxi International Business Vocational College?

1.5 Objectives

1) To study the current situation of adversity quotient development.

2) To develop an instructional model based on Rogers' theory.

3) To compare students' adversity quotient before and after using the instructional model based on Rogers' theory.

1.6 Research Hypothesis/Hypotheses

The students had a higher adversity quotient after using the instructional model based on Rogers' theory.

1.7 The Variables

Independent Variable: The instructional model based on Rogers' theory

Dependent Variable: Students' adversity quotient

2. Method

2.1 Population and Sample Group

2.1.1 The Population

104 first-year students of Infant and child care services and management major of Guangxi International Business Vocational College

2.1.2 The Sample Group:

The cluster random sampling method selected 33 first-year students from Infant and child care services and management major at Guangxi International Business Vocational College.

2.2 Research Instruments

1) Questionnaire about the current situation and existing problems of the adversity quotient of college student

2) Interview form about the current situation and existing problems about the adversity quotient of college student

3) Lesson plans

4) Adversity Quotient Scale

5) Observation form about student behavior

6) Interview form about opinions on teaching

2.3 Research Process

This study was conducted in three steps: a study of the current situation of adversity quotient development, the development of the instructional model, and an experimental improvement of the instructional model.

2.3.1 The Study on the Current Situation and Existing Problems of Adversity Quotient Development

1) Collect data about the current situation and existing problems of students' adversity quotient from 5 Academic experts. by using as follows:

a) Questionnaire about the current situation and existing problems of students' adversity quotient.

b) Interview form about the current situation and existing problems of students' adversity quotient.

2) Analyze data about current situations and existing problems.

2.3.2 The Development of an Instructional Model

1) Studied about the instructional model development process.

2) Determined the instructional model components.

3) Drafted the details of the instructional model: Principle, Objective, Learning Process, and Result.

4) Verified the details of instructional mode by the 5 professional scholars and modified instructional model according to suggestion.

5) Modify the details of the instructional model according to suggestions

2.3.3 The Experimental and Improvement of the Instructional Model

1) The Adversity Quotient Scale was administered to 33 first-year students from the Infant and childcare services and management major of Guangxi International Business Vocational College before using the instructional model.

2) 33 first-year students from Infant and Childcare Services and Management major of Guangxi International Business Vocational College were taught in 3 units according to the instructional model, for 20 class hours per week, with 5 hours of lessons per week.

3) The researcher observed and interviewed students of Infant and childcare services and management major of Guangxi International Business Vocational College about the activities gained after learning from the lesson plan according to the instructional model.

4) 33 first-year students from the Infant and childcare services and management major of Guangxi International Business Vocational College were tested after using an instructional model through the Adversity Quotient Scale.

2.4 Data Analysis

The data are analyzed as follows:

1) Qualitative data were analyzed through content analysis.

2) Quantitative data were analyzed through descriptive statistics, frequency, percentage, means, and standard deviation, and the different scores of mathematics achievement before and after using the instructional model were analyzed through dependent t-test for paired samples.

3. Results

3.1 Results of the Current Situation and Existing Problems of Undergraduate Students ' Adversity Quotient

5 experts in adversity quotient education participated in the questionnaire. The results of the survey are shown in Table 1.

Table 1. Summary of factors

(n=5)

Factors	$\bar{x}$	SD.
Student	3.80	. 32
Teacher	4.52	. 18
Learning process	2.76	.22
Environment	4.40	. 14

From Table 1, it can be seen that the lowest score is the learning process factor (($\bar{x}$ =2.76, SD. =0.22). Then it went to the students (($\bar{x}$ =3.80, SD. =0.32), then to the environment (($\bar{x}$ =4.40, SD. =0.14), and finally the teacher (($\bar{x}$ =4.52, SD. =0.18).

3.2 Results on the Development of Instructional Model Based on Rogers' Theory

3.2.1 Principle

Rogers's Theory focuses on "meaning learning theory" and the development of students' personalities. Rogers' Theory emphasizes the purpose of education: not only to impart knowledge but more importantly to build a perfect personality and improve students' self-learning ability by developing their potential (Dong L.2019). The learning process should be carried out around the students. The arrangement of learning content and the generation of learning results should consider the development of student's potential and the promotion of personality. Students should have a good personality, with lifelong personality qualities and psychological well-being.

In Rogers' theoretical view, acceptance of students by teachers without external evaluation and empathic understanding is important to promote meaningful learning and help students achieve self-realization. Students turn flexible problem-solving into their subjective intentions and freely and creatively use their previous experiences to solve new problems. This gives students a sense of control over their ability to solve new problems. That helps increase the sense of control dimension of the adversity quotient. The classroom atmosphere is safe and free from external evaluation: no external evaluation and criteria are used to define student creativity and value. In a safe learning atmosphere, students experience more openness and follow their innermost feelings. This helps students establish meaningful learning where they can learn independently, proactively, and responsibly. Active and responsible learning is the performance of students with ownership, which is also one of the dimensions of the adversity quotient. Teachers deeply empathize with students. This is to try to enter the inner world of students from the standpoint of students, feel their inner emotions, and understand their behavior and expression. Such empathy by the teacher can encourage the students to feel the bad feelings in themselves that were previously suppressed. Thereby reducing the scope of the impact of new difficulties on students and preventing adversity from reaching other aspects of students' lives. When students have a safe learning environment in which they can learn meaningfully, they become more confident, better at self-expression, more comfortable solving new problems, more flexible, and smarter at adapting to new dilemmas. This can shorten the period that adversity is expected to last, that is, the endurance of adversity will be increased.

Adversity quotient related to personality and psychological well-being (Chadha, 2021). There is a significant correlation between psychological well-being and adversity quotient (Dewi et al., 2022). Based on Rogers' theory, the point of focusing on the adversity quotient is that teachers act as facilitators of students' learning in the classroom. Teachers create a free, safe, and comfortable learning environment for students, and provide students with the learning materials and resources they need so that students can freely absorb the "nourishment" and "air" they need in the "sunshine" of love. This kind of free teaching can cultivate students' sense of freedom and responsibility and find their intrinsic value and meaning. This sense of freedom and responsibility can make students more responsible in times of adversity and willing to take responsibility for new difficulties within their ability. And believe that the new dilemma is within their control and is their efforts can control its impact and duration. Spontaneous, free, and self-responsible students who are calm when adversity comes, are good at taking the initiative to deal with new problems. Therefore, using the instructional model based on Rogers' theory helps improve students' adversity quotient.

3.2.2 Objective

This instructional model aims to improve college students' adversity quotient including control, ownership, reach, endurance.

3.2.3 Learning processes

Step 1: Emotionally driven problem definition

Teacher: Provides new knowledge topics and creates a free and safe learning environment. Listen to, accept, and clarify students' emotional expressions to help them understand their feelings.

Students: Feel free to express their feelings in the face of new knowledge. Students further define questions based on emotional expression to ensure clarity.

Step 2: Problem Discussing

Teacher:

Presents and explains the problem to students.

Supports students and creates a good classroom learning atmosphere.

Attach importance to the establishment of teacher-student relationships. Students are encouraged to learn autonomously, meaningfully, experientially, and intuitively.

Students: Discuss the problem, explore what is known and would like to learn more about, focusing on the topic.

Step 3: Planning and decision-making

Teacher: clarifies possible decisions.

Students: Plan initial decision-making.

Decide which part of the responsibility to take to solve which part of the problem.

Step 4: Action

Teacher: provides students with an environment of trust and love where students can learn freely. Teacher should be:

-Realness in the Facilitator of Learning. Shows the teacher's true feelings in front of students instead of creating a false teacher image.

-Prizing, Acceptance, Trust. Teacher attaches importance to students' feelings, accept students' emotions, and believe that students are trustworthy.

-Empathic Understanding. This attitude of standing in the other's shoes, of viewing the world through the student's eyes, is treasured in the classroom.

Students: gain further insight and develop more positive actions.

Action is to do something.

• What additional information do I need?

• What could I do to gain even a little control over this situation?

• What could I do to limit the reach of this adversity?

• What could I do to limit how long the adversity endures in its current state?

Step 5: Evaluating and Feedback

Teacher: respects and appreciates students' learning results, gives students timely feedback on learning, and encourages students to actively explore knowledge.

Students: self-assess their learning. Students assess for themselves whether they have mastered.

-what they want to learn about the topic (Control)

- whether they have taken specific responsibility for overcoming adversity (Ownership)

- whether they have applied new knowledge in their lives to help them grow (Reach)

- whether they have achieved their goals within the time limit (Endurance).

3.2.4 Result

Students improve their adversity quotient including control, ownership, reach, and endurance.

3.3 Results on the Improvement of Adversity Quotient of First-Year College Student

This section compares students' adversity quotient before and after the experiment through paired samples t-test, which provides information on whether the differences are significant before and after using the instructional model based on Rogers' theory.

3.3.1 Comparison of Students' adversity quotient before and after the instructional model based on Rogers' theory.

After using the Paired Samples T-Test, the adversity quotient pre-test and post-test mean scores were shown in the table below:

Table 2. Comparison of Students' Adversity Quotient pre-test and Post-test Mean Scores

Adversity Quotient Scale	n	$\bar{x}$	SD	t	df	p
Pre-test	33	111.70	11.58	-4.23***	32	.00
Post-test	33	125.67	16.91			

***Statistically significant at the level. 001 ($p < .001$)

From Table 2, through the Paired Samples t-test, it was clear that the students 'post-test score ($\bar{x}$ =125.67, SD=16.91) was significantly higher than the pre-test score ($\bar{x}$ =111.70, SD=11.58), t=-4.23, p <0.001, indicating that the students' adversity quotient was significantly improved through the instructional model based on Rogers' theory.

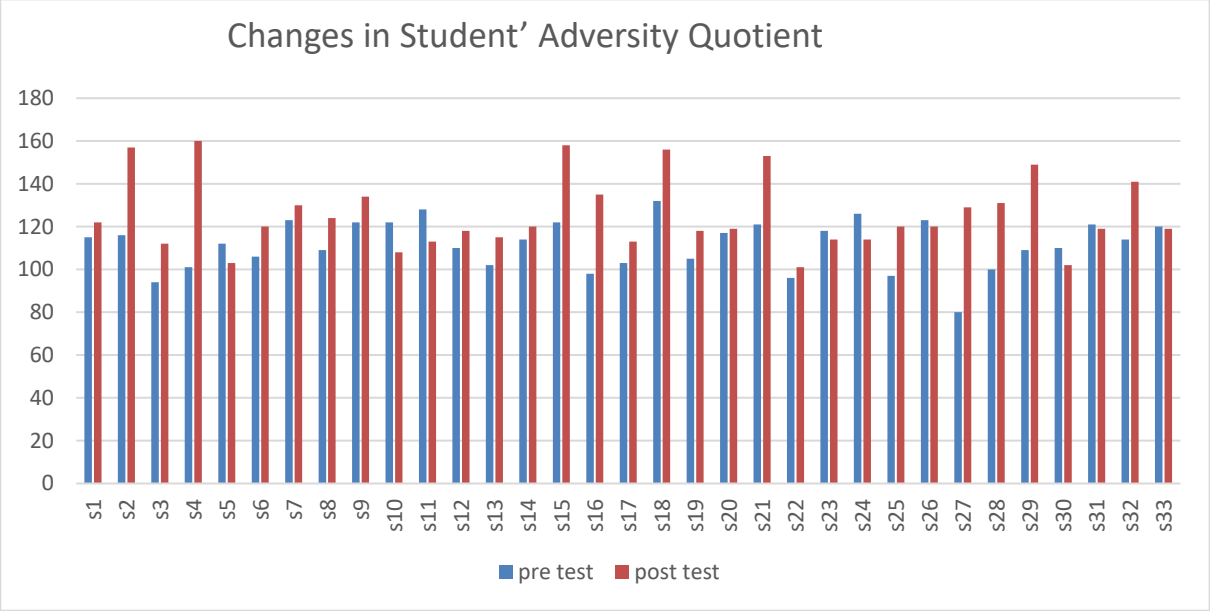

Figure 1. Changes in Student Adversity Quotient

Figure 1 shows that a total of 24 out of 33 students showed an improvement in the adversity quotient, more. than two-thirds of the total. This shows that the adversity quotient teaching model is based on Rogers' theory can effectively promote the learning and development of students' adversity quotient and achieve positive teaching results.

4. Discussion

The analytical discussion of the study is divided into three parts, which are discussed in turn in this section:

4.1 Discussion on the Current Situation and Existing Problems of First-Year College Students' Adversity Quotient

The findings of this study on the current situation and existing problems of first-year college students adversity quotients show that: the worst factor in adversity quotient is the learning process, followed by the student factor, the environment factor, and the teacher factor ranking last.

The main challenge to improving college students' stress quotient level is the teaching process and teaching method. In the current adversity education of college students, the Ministry of Education has issued a guiding document on training and improving students' ability to cope with adversity. These guidelines encourage schools to pay attention to the adversity education of college students. Schools provide a lot of resources and help for students to learn adversity knowledge. Teachers also continuously improve their quality and actively participate in the learning and training of adversity knowledge. However, there are still many deficiencies in the teaching process. For example, Dai et al. (2012) believe that the teaching content of adversity quotient is not consistent with the actual situation of students, the teaching environment is not interesting enough, and the teaching focus is difficult to understand. These current conditions and problems need to be improved. Some researchers have proposed some good improvement methods, such as using appropriate teaching methods in the teaching process, paying attention to the arrangement of the difficulty level of teaching content in the teaching design, focusing on cultivating students' self-learning ability and self-monitoring and promoting students to have a good learning attitude. Help students to master the knowledge of adversity quotient more consciously, more deeply, and more continuously, to obtain the satisfaction of self-realization, a sense of accomplishment, self-confidence, tenacious willpower, and finally improve the ability to cope with adversity.

Improving students' factors can also improve college students' adversity quotient, stimulate students' interest in adversity quotient, and improve students' awareness of the importance of adversity quotient, to stimulate students' active learning of adversity quotient knowledge. At the same time, students' psychological quality and self-confidence are very important to whether students can successfully overcome the challenges they encounter in learning (Sigit et al., 2019).

The comprehensive quality of teachers and the school environment are also very important to improving the adversity quotient of college students. The higher the professional status of the teacher, the higher the AQ is, and the greater the student's learning independence. Teachers with high levels of AQ can enhance students' academic achievement, whereas low levels of psychological resilience in teachers are associated with lower student performance. Teachers need to possess qualities of resilience, diligence, and patience to elevate their professionalism in handling various learning challenges. They must exhibit enthusiasm, dedication, and innovation, be willing to explore new ideas, and have the ability to learn from their mistakes, thereby fostering a professional attitude toward their work (Saguni et al., 2021).

Therefore, the most important development of student adversity quotient needs to be the teaching process, and then to improve students' cognition of adversity quotient, enhance teachers' skills, and build school environment and resources.

4.2 Discussion on the Development of Instructional Models

This study systematically combs the concepts and theories of adversity quotient, Rogers' theory, instructional model, and mental health education course. On this basis, it innovatively combines the relevant contents of Rogers' theory and instructional model to build an instructional model for the mental health education course in the first year of college. which consisted of four components: principle, objective, learning process, and result. In addition, the instructional model has passed the Objective Coherence Index (IOC) test. The course consists of three modules with a total of 20 credit hours, including test anxiety, friendship conflict, and loneliness.

The teaching of adversity quotient designed in this study is based on the adversity situations often encountered by college students in real life. After learning how to deal with adversity, students can apply it to all kinds of adversity in real life, and finally improve students' adversity quotient. The specific process is as follows: By creating a free and safe learning environment, psychology teachers can help students express their emotions and feelings freely, to better help students define and discuss problems. Then, the teacher introduced the LEAD skills of improving adversity quotient to the students and then guided the students to independently develop a plan to deal with adversity. Through continuous implementation, modification, and improvement of the plan, the final result was to solve difficulties, overcome adversity, and improve students' adversity quotient.

This study systematically combs the concepts and theories of adversity quotient, Roger’s theory, instructional model, and mental health education curriculum. On this basis, we combine Roger’s theory and instructional model to construct an instructional model for the first-year adversity quotient, which includes four components: principle, goal, learning process, and result. In addition, the instructional model has passed the Objective Coherence Index (IOC) test. The course consists of three units of 20 credit hours covering test anxiety, friendship conflict, and loneliness.

The adversity Quotient teaching designed in this study takes the common adversity situations of college students as the theme. In a safe and free teaching environment and a harmonious and friendly relationship between teachers and students, interesting classroom interactive activities are used to attract students' interest in the adversity quotient and realize the importance of the adversity quotient for life development. It is designed to help them learn ways to cope with adversity and to apply what they have learned in real life. The specific process is: that psychology teachers create a free and safe learning environment, encourage students to freely express their emotions and feelings, and better help them define and discuss problems. Then, the teacher introduced to improve the LEAD skills of adversity leaders and guided the students to independently make plans to deal with adversity. Through continuous implementation, modification, and improvement of the plan, students are eventually able to solve difficulties, overcome adversity, and improve the adversity quotient.

4.3 Discussion on the Effectiveness of the Implementation of the Instructional Model

After implementing the instructional model based on Rogers' theory, the adversity quotient of most of the 33 students improved. the experimental results show that the instructional model based on Rogers' theory can significantly improve the adversity quotient of students.

Rogers' theory emphasizes the importance of a free and safe learning environment, as well as a good teacher-student relationship, which is also helpful for students to calmly face difficulties. In the teaching of adversity quotient,

improving the instructional model and teaching process is helpful for students to improve adversity quotient, similar to the study of Lardika and Tulyakul (2020). Septiana (2015) believes that teachers should pay attention to and take care of students in all groups regardless of their adversity quotient. The new teaching method designed by the author integrates adversity knowledge with students' real-life situations, encourages students to further understand the significance of learning adversity quotient knowledge, and enhances students' motivation to learn adversity quotient knowledge. Through the implementation of new teaching methods, it is proved that improving teaching methods can help students better cope with the difficulties encountered in school life, cultivate students' courage to cope with difficulties, and ultimately improve students' adversity quotient. During the teaching discussion and sharing of this study, students also expressed: We prefer the new learning process because, in class, students can learn independently more easily and happily. When making learning plans, they can make plans for themselves according to their actual situation and expectations, without worrying about being criticized by teachers or questioned by classmates. This can promote self-discipline and self-drive to better cope with difficulties and improve adversity.

5. Conclusion

1) Current Status and Existing Problems: We found that college students' AQ is influenced by multiple factors, including students themselves, teachers, the learning process, and the environment.

Specifically, individual student characteristics and psychological traits, the quality of teaching and guidance provided by teachers, the effectiveness of the learning process, and the campus environment and resources all play a role in shaping college students' AQ. Among these factors, we identified the learning process as the most urgent issue to address. Deficiencies in the learning process may result in students lacking effective coping strategies and resources, thus impacting their ability to deal with adversity effectively.

2) Instructional Model Based on Rogers' Theory: The instructional model we developed is based on Rogers'

3) theory and encompasses four basic elements: principles, objectives, the learning process, and outcomes. The learning process is divided into five steps: emotionally driven problem definition, problem discussion, planning and decision-making, action, and evaluation and feedback. This model is designed to create a positive learning environment, stimulate students' interest in learning, and cultivate their problem-solving skills and resilience. Through this instructional model, students can learn and continually improve their adversity-coping strategies in practice, thereby enhancing their AQ.

4) Validation of Experimental Results: By comparing pre-test and post-test results, we found a significant improvement in college students' AQ overall. This finding further validates the effectiveness of the instructional model based on Rogers' theory. The experiment demonstrates that through optimizing the learning process and providing effective learning support, students' AQ can be significantly improved.

This study offers a deep understanding and analysis of college students' AQ and its influencing factors, as well as an exploration of the effectiveness of an instructional model based on Rogers' theory in improving college students' AQ. These findings provide valuable insights for future educational practices and academic research, offering theoretical and practical support for cultivating college students' AQ.

6. Recommendations

Based on the results of the study, it is recommended that:

1) The research results show that in the current situation of college students' adversity quotient, the most important factor is the learning process. Schools and teachers should attach importance to teaching design used in the teaching process, the difficulty of the content of adversity should be based on the different backgrounds of different students to properly arrange a learning plan suitable for each student, add interesting teaching methods to attract students' interest, and combine the teaching theme with the adversity encountered by students in actual school life to make students pay attention to the knowledge point of adversity. Both the national and provincial levels attach great importance to the cultivation of students' ability to cope with difficulties. Therefore, teachers should be good at applying the environmental resources provided by the state and schools and using advanced science and technology to help improve the efficiency of students' learning about adversity.

2) Teachers can further study the instructional model based on Rogers' theory and based on creating a safe and free learning environment for students, to improve students' adversity factors, use instructional models that are more suitable for students' psychological development and personal growth to scientifically cultivate students' ability to

resist setbacks.

3) This study shows that the total score of adversity quotient of college students is significantly improved. Among the four dimensions of the adversity quotient, endurance (statistically significant) improved the most. 0.001), followed by control (statistically significant p=0.001), reach (statistically significant p=0.004), and finally ownership (no statistically significant p=0.074). The experiment proves that there is a big gap between the improvement of ownership and other dimensions. To better improve students' adversity factor and realize the joint improvement of all dimensions, it is suggested that teachers pay attention to the learning content of students' ownership, improve students' sense of responsibility in the face of difficulties, and guide students to deal with adversity in a correct attribution way.

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