THE IMPACT OF RESILIENCE AND COPING STRATEGIES ON TECHNO-STRESS AND REDUCING CHINESE STUDENTS' TECHNO-STRESS THROUGH INTEGRATIVE GROUP COUNSELING

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THE IMPACT OF RESILIENCE AND COPING STRATEGIES ON TECHNO-STRESS AND REDUCING CHINESE STUDENTS' TECHNO-STRESS THROUGH INTEGRATIVE GROUP COUNSELING

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Title	THE IMPACT OF RESILIENCE AND COPING STRATEGIES ON TECHNO-STRESS AND REDUCING CHINESE STUDENTS' TECHNO-STRESS THROUGH INTEGRATIVE GROUP COUNSELING
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This aims of this study are as follows: (1) to investigate the impact of resilience and coping strategies on techno-stress among Chinese students; (2) to develop an integrative group counseling program for reducing techno-stress; and (3) to study the difference in techno-stress between the intervention group receiving the integrative counseling program and the control group proceeding. Phase 1 involved 280 students selected via stratified random sampling, with personal interviews conducted with five students. In Phase 2, 20 students were randomly assigned to experimental (10 students) and control groups (10 students), followed by group interviews with 10 participants. The research instruments included the Resilience Scale, Coping Strategies Scale and the Techno-Stress Scale. These three scales measured by α and IOC values are 0.895, 0.4-0.9; 0.789, 0.6-0.8; 0.927, 0.8-1, respectively. For quantitative analysis, descriptive statistics, Person correlation, multiple regression repeated measurement ANOVA, and qualitative analysis used content analysis. The results revealed the following: (1) resilience components such as optimism and strength, coping strategies components such as seeking help and problem-solving, and self-regulation significantly negatively influenced techno-stress except for fantasy and evasion in significantly positively influenced techno-stress (R^2 = 0.41, R^2_{adj} = 0.40, F = 32.08, df = 6, 273, $p \leq 0.01$); (2) the integrative group counseling program consisted of eight sessions; (3) the experimental group reduced the techno-stress of students before, after, and follow-up showed a significant difference at the 0.05 level; and (4) the experimental group to reduce techno-stress of students before, after, and follow-up was significantly different from the control group at 0.05 level.

Keyword : Resilience, Coping strategies, Chinese students, Techno-stress, Integrative group counseling

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CHAPTER 1
INTRODUCTION

Background

With the change in technology and learning style during the pandemic, students have increased techno-stress on students, a disease caused by people's maladaptation to innovation, psychological problems related to the use of innovation, and changes in social conditions, resulting in an inability to adapt. When individuals cannot properly adapt to changes based on data innovation, they experience techno-stress(Tarafdar et al., 2007). College life, especially for undergraduates, is in a critical transitional period to adapt to the changes at the intersection of school life and social life (Wang et al., 2014). The changes at this stage have affected the psychological and emotional well-being of Chinese students, as well as their mental health (Contreras et al., 2017). Studies showed that information technology work, such as people's use of video terminals, may have adverse physical and psychological effects, including physical and mental disorders, mental stress, and other issues.(Arnetz & Wiholm, 1997), work dissatisfaction, and dissatisfaction with life(La Torre et al., 2019).

Mental health issues continue to arise, especially as students and institutions heavily Change from offline physical courses to blended or pure online courses learning platforms, In many cases, these platforms not provide undergraduates with the space to express their feelings through direct physical interactions. Some scholars have pointed out that innovative and improved learning methods are needed. Nevertheless, the pace of change is questionable, expanding the techno-stress gambling of all stakeholders involved in the educational environment(Murphy et al., 2021). This new learning model often led to additional time requirements, expansion preconditions, information, and capabilities(Weinert et al., 2020). Studies have reported that spending long hours on a computer screen makes students feel stressed and tired, just as they usually do when using computer screens for long periods. They also complained that they become restless when interacting longer with the computer screen(Ishola et al., 2022). Researchers have found that studying and performing educational tasks under stress is

associated with anxiety and lower well-being(Cant, 2018; Goodall, 2015). The reported that negative personal experiences cause high blood Stress, increased heart rate, and high stress hormone levels(Riedl, 2012). Issues including ergonomics(Gerr et al., 2006), mental health, and techno-stress (stress response to technology use) have been studied. (Berg et al., 1992) Thus, it can be seen that education increasingly adopts online formats. Investigating how ongoing interactions with technology affect student mental health is crucial and highlights the need for interventions to mitigate these effects.

Therefore, the continuous and long-term use of technology and its consequent consequences require urgent measures as the researchers' reported mental state, behavior, and health are affected by stress(Sydney-Agbor et al., 2018). This study explored and investigated the impact of techno-stress from two factors: resilience and coping strategy, and reducing the techno-stress through group counseling(Woolston, 2020). Some studies suggest that coping strategies influence the relationship between resilience and psychological issues. Others suggest that coping strategies could have a predictive effect on resilience, which may play a mediating role in coping with mental health or adverse effects(Chen, 2016; Chen et al., 2019). Studies have identified the factors of undergraduate coping strategies. Their panic, stress state, and resilience provide useful information for intervention measures to develop an educational environment.

Resilience has become a conceptual umbrella or advanced structure with rich sources of protective factors that enable adaptive development in adversity(Hjemdal, 2007). Resilience experts pinpointed specific factors that protect in challenging or risky situations. (Masten, 2001; Masten & Cicchetti, 2016). The concept of overcoming challenges and thriving in difficult situations was called resilience (Masten et al., 1990) .Techno-stress is an adversity faced by modern students, and encountering adversity is a strong predictor of impaired psychological functioning. People respond differently to adversity; some face prolonged challenges, while others see little impact or positive change. Scholars called this outcome (performing well in challenging situations)

resilience (Troy et al., 2023). People experience exposure to different stressful events throughout their lifetime, leading to positive or negative outcomes, and those who remain physically and mentally healthy in challenging and troublesome conditions are considered 'resilient'. They employ adaptive coping mechanisms that frequently turn stressful circumstances into chances for growth and education(Boyden & Mann, 2005).

Using coping strategies is an important attribute that protects personnel from the adverse consequences of stress and assists in their adaptation. According to previous studies, coping entailed modifying cognitive and behavioral approaches to handle perceived excessive internal or external pressures(R. Lazarus & S. Folkman, 1984). Individuals often turn to coping mechanisms when dealing with stressors, requiring them to consistently make efforts through both thought and action to manage the sources of stress. (Lazarus, 1993); To clarify resilience, it is crucial to grasp the concept of adaptive coping, as the success of coping strategies is determined by the surrounding environment. (Folkman & Lazarus, 1980). A greater likelihood of resilience can be seen when there is a closer alignment between the specific characteristics of the stressor and the coping strategies implemented. Positive personal characteristics emerged after brief trauma; skills in stress, loss, and challenge (Begun, 1993; Bonanno, 2008).

Social support is crucial in assisting individuals in dealing with this process. Essentially, social support refers to the social and psychological assistance that individuals receive from their surroundings and others, like peers, family, and teachers, to help them cope with challenges(Gottlieb & Bergen, 2010). Nevertheless, a crucial aspect of psychological interventions is teaching coping and problem-solving skills. Participants talked about coping strategies that appeared to align with therapeutic components seen in evidence-based prevention and treatment methods. This study used group counseling to obtain social support and help, thereby reducing technical pressure (Clark, 2013).

As undergraduate students' demand for counseling and treatment services for mental health disorders rapidly increased, researchers often refer to undergraduate mental health as a "crisis"(Xiao et al., 2017). A study highlighted additional stress factors

linked to COVID-19, including disruptions to academic routines like online tutoring, evaluations, non-traditional classes, and challenges with online teaching resources. These factors could influence Chinese students' well-being. A good way to solve this problem was to rely on psychological counseling. In educational institutions, counseling services were essential to helping clients experience. Evidence in the literature suggests that seeking formal psychological assistance was more fulfilling than seeking informal support (McLennan, 1991). Moreover, psychological assistance contributed to prevention efforts by supporting students in their college retention and teaching them valuable skills to excel in their educational and personal pursuits(Danger et al.; Turner & Berry, 2000).In collectivist Asian societies, psychological counseling was a form of social support that contributes to a positive attitude towards it (Daudi et al., 2023). Moreover, psychological support is a preventative measure by aiding students to remain in university and recognizing and developing skills necessary to reach academic and personal objectives successfully(Turner & Berry, 2000). Numerous studies have emphasized the significance of counseling in decreasing stress and techno-stress.

Group counseling involves a therapeutic approach where a counselor works with multiple clients simultaneously in a group setting. It aims to support, encourage, and guide individuals facing similar challenges or issues. It is a therapeutic approach where a counselor facilitates discussions and activities with a small group of individuals facing similar issues or challenges(Wirt et al., 1969). The goal is to create a nurturing space where members can exchange experiences, acquire new perspectives, and collaborate on building coping mechanisms to enhance students' resilience.

The research underscores the importance of group counseling in various contexts. For instance, studies emphasized its effectiveness in improving social skills, enhancing self-awareness, and promoting personal growth among participants (Berg et al., 2017). Group counseling also offer a cost-effective way to simultaneously deliver therapy to multiple individuals, making mental health support more accessible. group counseling was vital in therapeutic settings as it facilitated mutual support, personal development, and skill-building among participants. This method is essential because it

enables participants to get feedback and assistance from their peers, promoting a sense of community and minimizing feelings of loneliness. It leveraged the dynamics of group interaction to promote healing and resilience, making it a valuable tool in mental health treatment and support programs. Research indicated that group counseling could effectively reduce stress among students. For instance, a study found that group counseling sessions decreased stress levels and improved coping strategies among university students. This highlighted the therapeutic benefits of group dynamics and peer support in managing academic and personal stressors; thus, it could be seen that group counseling could also help alleviate techno-stress, concerning stress triggered by the use of technology(Dami et al., 2019). In today's digital age, many individuals experience techno-stress due to information overload, constant connectivity, and digital distractions. Group counseling is a valuable therapeutic intervention that fosters mutual support, enhances coping skills, and addresses specific stressors like student stress and techno-stress. It offer an opportunity for people to interact, exchange ideas, and benefit from each other's stories, ultimately enhancing mental health and overall wellness in different situations. (Dastbaaz et al., 2014).

Chinese group counseling had initially formed its own theoretical system and practical application technology. Actively exploring the unfinished path of localized group consultation. In recent years, China had made great progress in consulting services. During the epidemic, the number of people in need of consulting had increased, and the techno-stress issues that arise in response to the epidemic environment ha become apparent and prominent(Leung et al., 2000).

Previous literature reviews showed that in phase 1, researchers were interested in studying resilience and coping strategies, as well as their respective effects on stress. However, there was relatively little research on the impact of both on techno-stress. Some literature explored how integrative group counseling could alleviate stress, but there was limited research on its effectiveness in reducing techno-stress. Furthermore, no intervention studies utilized integrative group counseling as a framework. Therefore, in phase 2, this study integrated group counseling to develop an intervention program,

enhance the most potent predictive factors identified for reducing techno-stress in phase 1, and examined the effectiveness of such interventions in reducing techno-stress behaviors.

Research questions

In the face of Chinese students in the special group of values. The author raises the following questions:

1. What is resilience and coping strategies affect techno-stress Chinese students?

2. How does the integrated group counseling program reduce the techno-stress of the Chinese students?

3. Can the integrated group counseling program reduce the techno-stress of the Chinese students?

Objectives of the Research

1. Investigate the impact of resilience and coping strategies on techno-stress among Chinese students.

2. Explore an integrative group counseling program for reducing techno-stress.

3. To study the difference in techno-stress between the intervention group receiving the integrative counseling program and the control group proceeding.

3.1 To compare the differences in scores with techno-stress in the experimental group before and after participation in the integrative group counseling program.

3.2 To compare the differences in scores with techno-stress in the control group and the experimental group after participating in the integrative group counseling program.

Definition of terms

Resilience refers to the individual effective response and adaptation to loss, difficulties, or adversity. It mainly contains two connotations: first, the individual faces major threats or difficult situations, and second, the individual can still develop normally under the influence of difficult situations. Resilience can be effectively improved through the dimensions of Tenacity, Strength, and Optimism. Revised based on the opinions of IOC experts and previous student try-out testing opinions using the Connor Davidson Resilience Scale (Yu & Zhang, 2007).25 items are to be rated based on their own experience using a scale ranging from 1 to 5, with 1 indicating 'Never' and 5 indicating 'Always' with the item. High scores represent higher levels of resilience than the ones who scored lower.

Coping strategies refer to actively deciding to regulate emotional, behavioral, cognitive, psychophysiological, and environmental factors to handle stress from everyday events or situations. The coping strategies include Self-regulation, Fantasy and evasion, and Seeking help and problem-solving. Revised Simplified Coping Style scale (SCSQ) (Xie, 1998) based on the opinions of IOC experts and previous students trying out testing opinions. 20 items are scored using the 4-point (1 point not take; 4 points frequently take), which consists of 20 items. Individuals who scored higher mean that/she has a higher level of coping strategies than those who have a lower.

Techno-stress refers to when people struggle to deal with the difficulties of using technology; they experience psychological stress due to adaptation issues. Techno-stress is related to the technology itself and to changes in many aspects of learning, such as designing and delivering content and teaching, learning processes, and evaluation. Universities worldwide have been exploring new teaching methods such as the Flipped classroom and mixed learning, as well as digital resources for flexible degree programs like MOOCs, leading to an increase in techno-stress; this new learning model often requires more time, knowledge and skills, and the psychological stress of these digital agendas on students is the techno-stress, and the main factors include Techno-overload (OV), Techno-complexity (CO), Techno-invasion (IN) , Techno-

uncertainty (UN), Techno-insecurity (INS), Techno- learning pressure(TLP). Revised Techno-stress scale based on the opinions of IOC experts and previous student try-out testing opinions. Questions about educational technology pressure factors were added based on university students' techno-stress characteristics. The project adapted for end-user satisfaction is based on Doll and Torkzadeh (Doll & Torkzadeh, 1989). The Likert 5-point scale was utilized to gauge all items, with 0 points" Never" and 4 points " Always be." Individuals who scored higher mean that/she has a higher level of techno-stress than those who scored lower.

Integrative group counseling refers to a psychological intervention method with preventive and remedial effects. It promotes personal growth in discovering internal forces, attempts to bridge the boundaries between single schools of thought, and seeks inspiration from other theoretical therapies, allowing visitors to benefit from a range of constructive methods. A single-treatment theory does not limit most psychotherapists but rather adopts an integrated perspective.

Chinese students refer to Chinese university students from the first year to the fourth year, excluding art and sports majors.

Scope of the Study Conceptual

The number of people:

This study focused on the research subject of Chinese private and public students. Students adopted a random sampling method and randomly selected Chinese students in their first, second, and third years. Phase 1 Sample selection: Stratified random sampling was employed. The first stage of stratified sampling is stratified by research field and divided into three research fields by school and college: Humanities, Science and Engineering, and Social Sciences. Second stage random sampling: Randomly group students of all levels. One-third of the samples came from the humanities field, one-third from the science and engineering field, and one-third from the social sciences field. The qualitative research sample (2 public and 3 private) for Phase 1 came from a random selection of public and private students in the quantitative research of Phase 1. The Phase 2 quasi-experimental study was conducted through

random selection from a private university in Phase 1 quantitative study (selected 11 participants from each group in the experimental and control conditions. Ultimately, selected 10 participants to remain in both the experimental and control groups). phase 2 qualitative research came from the experimental group of 10 students in the phase 2 quasi-experimental study.

The specific steps were as follows:

Phase 1: Explore the impact of resilience and coping strategies on techno-stress

Quantitative Sample:

The quantitative analysis of the impact of resilience and coping strategies on techno-stress was conducted using the sample size calculation method of multiple linear regression analysis α = 0.05, power=0.95, and effect factor f2=0.15. The sample size calculated using computer software is 107 students for each type of school, totaling 214 students. Considering the rule of thumb for sample size calculation, it is generally necessary to include at least 300 research subjects (Faul et al., 2009; Wolf et al., 2013). Considering the rule of thumb and computer software calculation results, this study has decided to include at least 300 research subjects. The study's final sample was 305 people, and samples that answered too quickly or repeatedly were deleted. The final sample comprised 280 students (137 from public universities and 133 from private universities).

Personal interviews Sample:

Although there is no participant standard for qualitative interviews on the impact of resilience and coping strategies on techno-stress in qualitative research, information saturation is the recruitment goal (Malterud et al., 2016). It is unnecessary to gather more data or analyze the existing data further (Saunders et al., 2018). Qualitative 5 students (personal interviews): Some studies suggest that 5 to 50 participants were sufficient (Morse, 2000), which means that capturing the possible range of opinions was ideal for this study. Among the 5 students, 2 are public university students, and 3 are private university students, 60 minutes per person, which could cover the target population of this study (Seidman, 2006).

Phase 2: Reducing Chinese students' techno-stress through developing an integrative group counseling

Quasi-experiment Sample:

The participants of the quasi-experimental study on "Reducing Techno-stress through Group Counseling" selected 22 new students who voluntarily participated in group counseling projects from the first stage of data collection in private universities. In the quasi-experiment of group counseling, some studies suggest that the number of people seeking group counseling should not exceed 3 (Meyer, 1952). The general rule is that the effective small-scale group size is 5-12 people (Trotzer et al., 1979), and 8-10 people from young to adult are more suitable (Corey et al., 2018). Considering that some students withdrew midway or the collected experimental data had low validity, it was necessary to organize and delete them during the experiment. A total of 22 people were collected from the control group of 11 people and the experimental group of 11 people. Randomly select from the sample of private college students in phase 1. It is not ruled out that students will give up halfway through the experiment. Therefore, conservatively estimated, the minimum number of people in the control group is 10, and the minimum number in the experimental group is 10, totaling 20 people. The program was carried out with the experimental group but not with the control group.

Focus group interview Sample:

According to previous research, in order to determine the population size, each focus group interview takes approximately 60-90 minutes (Schwander-Maire et al., 2023). According to a practical handbook on applied focus group research, groups with 6-8 participants were more likely to show promising outcomes (Krueger, 2014). Focus group interviews were conducted with 10 students from the second phase of the quasi-experiment, lasting for 60 minutes.

Variable:

Phase 1:

Independent variables: resilience, coping strategies

Dependent variable: techno-stress

Phase 2:

Independent variables: Integrative group counseling

Dependent variable: techno-stress

Significance of the study

1. Theoretical Significance

1.1 The research results can help to understand the structure of techno-stress from two aspects: resilience and coping strategies.

1.2 Beneficial for improving the psychological level of Chinese students and providing theoretical guidance for program counseling issues.

2. Practical significance

2.1 The research results explain the reasons for techno-stress among Chinese students, providing reference and guidance for instructors and psychological counselors in different types of universities.

2.2 It is beneficial to apply this study to the learning and life of college students, cultivate good coping strategies through resilience training, and improve their mental health level.

2.3 Provide experience in integrative group counseling in disaster and traumatic events.

Conceptual Framework

1. In the conceptual framework of phase 1 of the study, the author dissected how resilience and coping strategies influence outcomes on the various factors of techno-stress. As shown in the figure below:

2. In Phase 2, the author adopts integrated counseling to select and develop a group counseling program suitable for contemporary Chinese students to reduce techno-stress's impact. Based on the results of the first research stage, suitable resilience and coping strategies should be selected and applied to the group counseling program, key indicators developed, and a training group plan for the healthy development of Chinese students to reduce techno-stress.

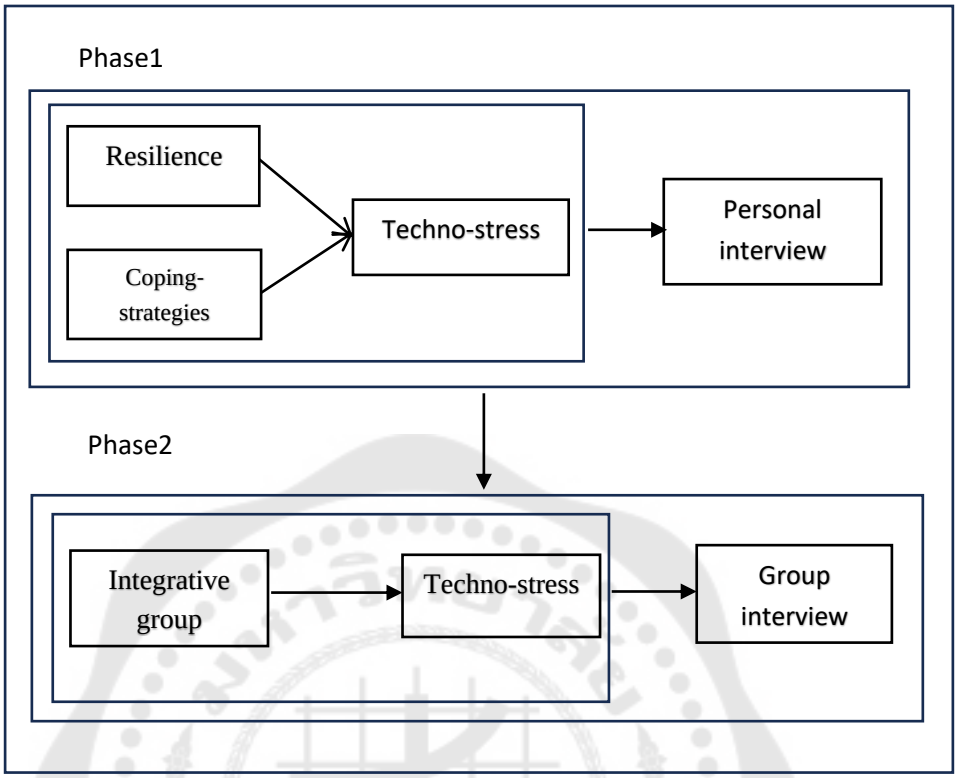


Figure 1 Conceptual Framework

Hypothesis of the Study

This study focuses on how resilience affects the techno-stress of Chinese students through psychological counseling programs. In addition, whether the techno-stress was effectively alleviated through the intervention of group counseling programs is another focus of this study.

For this purpose, the following assumptions are proposed in this study:

1. The resilience and coping strategies of Chinese students affect techno-stress.

2. After participating in the integrative group counseling program, resilience and coping strategies score was higher than before participating in the program score.

3. After participating in the integrative group counseling program, the experimental group's techno-stress was lower than the control group.

CHAPTER 2
LITERATURE REVIEW

This chapter examined the literature and research on resilience, coping, techno-stress, and group counseling programs to explore the effects of protective factors and techno-stress and explore available data on reducing techno-stress through group counseling. The following provided a synopsis of the literature:

1. Concept of Resilience

1.1 Definition of Resilience

1.2 Resilience Theory

1.3 Resilience Research

2. Concept of Coping strategies

2.1 Definition of Coping strategies

2.2 Coping Strategies Theory

2.3 Research on Coping strategies

3. Concept of Techno-stress(TS)

3.1 Definition of Techno-stress

3.2 Techno-stress Theory

3.3 Research on Techno-stress

4. Research on the Relationship between Resilience, Coping strategies and Techno-stress

4.1 Relationship between Resilience and Coping strategies

4.2 Relationship between Resilience and Techno-stress

4.3 Relationship between Coping strategies and Techno-stress

4.4 Relationship between Resilience, Coping strategies and Techno-stress

5. Integrative Group Counseling

5.1 Definition of Group Counseling

5.2 Techniques of Group Counseling

5.3 Stage of Group Counseling

5.4 Group Counseling Research

1. Concept of Resilience

1.1 Definition of Resilience

The study of psychological resilience (Resilience) originated in the 1970s and 1980s. From the psychological point of view, "resilience" not only means that individuals can return to their initial state after experiencing major setbacks or stress trauma but also persist under stress and grow into new life after experiencing setbacks. Different scholars had different definitions of concepts. Some believed that resilience is the ability to overcome challenges, setbacks, and hardships(Ledesma, 2014), and Luthans (Luthans, 2002) believed that resilience is a developable ability, progress, and increased responsibility for a rebound or rebound from adversity, conflict, failure, and even positive events can be sources of inspiration (Masten, 2014). Some researchers pointed out that psychological resilience is a process in which an individual faces internal and external stress, stimulates internal potential cognition, ability, or psychological characteristics, and actively repairs and adjusts the mechanism through the use of internal and external resources in order to obtain the ability, course or results towards a positive goal. Psychological resilience is an effective response and adaptation of individuals to loss, difficulties, or adversity. Resilience is not an innate unique trait of some people, but can be improved and explored through various ways(Ungar, 2013).

The key to improving resilience is to grasp the coordination between the three resources: individual internal quality, family support, and external environment support (Yu & Zhang, 2007). This is also in line with the research idea of positive psychology(Ungar, 2013), which suggested that the focus should be on exploring the inner potential of individuals and stimulating their positive potential rather than simply repairing their psychological problems (Luthar et al., 2014).

In general, the nature of psychological resilience contains two elements: one is that the individual faces major threats or encounters difficult situations, and the other is that the individual can still develop normally under the influence of difficult situations. According to the characteristics of the Chinese people, Chinese scholars have improved the resilience scale (Connor & Davidson, 2003), which divided resilience into three factors: Tenacity, Strength, and Optimism, and removed the control factor Control and the mental influence factor Spiritual influence(Yu & Zhang, 2007).

From the psychological level, in the post-epidemic era, people shifted from an acute stress moment to a period of chronic stress. Psychological resilience (also known as psychological resilience), as a positive psychological quality, can help individuals face a series of challenges in this process and then deal with many chain reactions in the post-epidemic era(Song & Shi, 2021).

The concept of psychological resilience mainly focuses on an individual's ability to recover from setbacks and thrive under stress. Resilience can be cultivated in various ways and is divided into multiple factors. This study considered various factors as key factors for individuals to cope with chronic stress and subsequent challenges effectively.

1.2 Resilience Theory

Resilience has evolved over the past 70-80 years and has seen a renewed interest in the last two or three decades. Research on the origins of children has evolved into a broad, dynamic, and exhilarating field. Resilience theory involves individuals, families, communities, workplaces, and policies, encompassing both children and adults. Resilience theory influences almost every aspect of life, originating from

investigating adversity and examining how negative life events impact individuals (Van Breda, 2001). The foundation of resilience theory lies in a focus on pathology and greater strength (Rak & Patterson, 1996). Antonovsky (1979) called it a "pathogenic" focus, indicating that the origins of disease or the decline in social functioning or well-being are key areas of interest in social and medical sciences.

Psychologists advocate shifting away from vulnerability/deficit models and concentrating on success in the presence of adversity. Researchers in child development have also emphasized the importance of focusing on dominance. The scientific literature is showing more examples of this paradigm shift. Scholars also observed a comparable pattern in family therapy: longitudinal research on children born in challenging circumstances is the foundation for the current theoretical comprehension of adult and family resilience.(Hawley & DeHaan, 1996). Over the decades, researchers have increasingly been able to identify characteristics relevant with children beyond their environment (Werner & Smith, 2019). Children in Kauai, Hawaii, showed that certain factors could protect vulnerable children from functional impairment. Vulnerable children's life trajectories could alter unexpectedly and were not entirely set during early childhood. Although childhood adversity did increase the probability of later-life psychopathology (Cederblad et al., 1995), Resilient children are those who can overcome these challenges. "Children who are exposed to risk factors can overcome them and prevent negative outcomes like crime, behavior issues, mental health disorders, academic struggles, and physical health problems. High consistency, high mastery, and internal control points" are protective factors that help deal with adversity(Rak & Patterson, 1996).

The "Sense of Coherence" (SOC) is a core contribution to Antonowski's theory of beneficial health. SOC This is a fairly common lifestyle that mobilizes specific coping resources. It is a global orientation expressed in a degree of universal, enduring; the internal and external environment's dynamic confidence can be reliably predicted, with a high chance of things working out as expected. Antonovsky (1998)identified the three main components of the SOC: comprehensibility, manageability, and

meaningfulness. Antonovsky The SOC is assumed to be dynamic and established around 30 years of age and remains stable and dynamic thereafter.

Masten (2018) was a respected figure in the field of resilience research and his work in aiding families and children during tough times; he characterizes resilience as the capacity of a system to effectively adjust to major obstacles that jeopardize its operation and existence or advancement at risk. Researcher explored the historical background of the theory and its investigation in the field, aimed to incorporate practical uses, models, and information that could support the development and adjustment of children and their families(Walsh, 2016). researcher conducted in-depth analysis of the concept of family resilience from a family systems perspective(Berkes & Ross, 2013). Examined two different approaches to studying community resilience: one from a social-ecological standpoint and another from the perspective of mental health and developmental psychology, making a valuable contribution to the expanding field of community resilience research (Vogus & Sutcliffe, 2007). Examined the cognitive, emotional, and structural dimensions of organizations in order to define and comprehend organizational resilience, along with its key drivers(Gerber et al., 2013). Investigated whether teenagers with high mental resilience could endure stress and found that they served as a protective barrier against elevated stress levels and symptoms of depression.

Resilience is frequently associated with positive psychology. Both address the role of facilitators and the benefits of supportive structures in enhancing our well-being(Luthar et al., 2014). Resilience theory and positive psychology, two fields within applied research, emphasize the significance of social relationships.(Luthar, 2015; Sheldon et al., 2011). Studies have pointed out that some personality advantage hope, courage and enthusiasm and the challenges have the most extensive relationship, which makes the researchers speculate that determination, social connection, emotional regulation process in play, resilience and emotion, intelligence and restraint related advantages have special correlation(Martínez-Martí & Ruch, 2017). According to some experts, a study by Cohn and colleagues in 2009 revealed that individuals who

frequently feel positive emotions like happiness tend to enhance their life satisfaction by developing resources like self-resilience to tackle difficulties(Cohn et al., 2009). Previous studies have demonstrated that positive emotions can boost resource accumulation and are connected to mental resilience, physical health, mental well-being, and positive mood. (Lyubomirsky et al., 2005; Nath & Pradhan, 2012).

In conclusion, it can be seen that resilience theory has developed into a broad and dynamic field. It emphasizes overcoming adversity rather than vulnerability, emphasizing protective factors such as high consistency, mastery ability, and internal control. The research of experts has revealed its application in improving individual and group happiness and cultivating positive psychological states. Resilience conforms to the principles of positive psychology, and this understanding of resilience is crucial for the development of effective intervention measures in this study, such as the proposed integrative counseling program to enhance optimistic factors. The program's goal was to reduce techno-stress and enhance the mental well-being of Chinese students in their academic and personal lives.

1.3 Resilience Research

Early studies on resilience concentrated on finding factors linked to resilience. The identification of these factors involved two methods: human-centered and variable-centered methods. The person-centered approach compares the traits of individuals who showed resilience in a given situation with those who did not. A variable-centric approach evaluates the relationship between individual characteristics and their environment, leading to resilience outcomes. Studies have identified the protective and facilitative factors associated with the resilience outcome. Experts identified factors associated with children, families, community, and cultural and social characteristics. Scholars created an extensive compilation of factors linked to resilience following adversity or risk (Mizuno et al., 2016).

The research then turned its focus to the process-related problems. Create elements that foster resilience and shield against risks or adversity(Wright et al., 2013). Research and theory during this period also aimed to comprehend how the factors

found in earlier research influence and work together to create resilient outcomes. As described by Flach (Flach, 1988), the resilience process involves a two-step model consisting of the law of disruption and reintegration. Challenges and stress can result in destruction, but individuals find ways to reintegrate. Some scholars have suggested a resilience framework(Wright et al., 2013), expanding on the theory of breakdown and restoration. Another author considers. The resilience theory a meta-theory due to its integration of elements from various other theories. The resilience model is a straightforward linear model that outlines the individual's levels of homeostasis, disruption, and reintegration, along with various potential outcomes, with resilience reintegration being the most beneficial. The process of resilience reintegration, as described by Richardson et al. (1990), involved obtaining developmental insights and experiencing personal growth.

Resilience researchers started investigating ways to foster resilience in situations where it is not innate. Scholars emphasize initiating this stage by creating prevention and intervention plans to improve resilience(Masten, 2007). Experts have found that resilience development is dependent on facing risk or adversity but in a controlled manner. Likewise, determining the optimal timing for implementing resilience-building interventions can improve and extend their effectiveness. Richardson (2002) and colleagues adopted a distinct yet complementary approach and started examining resilience as a driving force that motivates us to reintegrate and adapt when faced with challenging events or circumstances. This perspective is considered resilience, serving as an internal drive for us to reach high levels of goals; for example, driving us towards higher self-fulfilling goals in the sense of Maslow.

Following ongoing research revisions, it is important to highlight that studies should view resilience as a multidimensional concept. Resilience is currently acknowledged as a multi-level concept, known as resilience spanning multiple systems and their interactions. The research has primarily concentrated on the biological and neuroscience underpinnings of resilience(Bryan et al., 2018). They declared that moving away from trait-based models of resilience and embracing a dynamic perspective on

resilience is essential for gaining a deeper understanding of the mechanisms underlying resilience. They acknowledged the importance of embracing a versatile concept of resilience that resonates with the diverse nature of the processes at hand. The researchers also pointed out that resilience is not only dynamic but also required taking into account other concepts, such as self-regulation.

Researchers have focused on the biological and neuroscience bases of resilience. To gain a deeper understanding of resilience processes, it is essential to shift away from trait-focused methods and adopt a more dynamic view of resilience. Initially, they recognized the necessity of embracing a dynamic resilience definition based on processes, in line with the multifaceted nature of the processes at play. The researchers stressed that resilience is not only dynamic, but also needed to take into account other concepts, such as self-regulation (Bryan et al., 2018).

Adding or leaving out the word "resilience" in a research framework or scholarly article does not directly confirm or erase the association with resilience investigations. That is to say, in some studies, even if the word resilience does not appear, its associated hidden factors include resilience, which can also be defined as resilience. The expected results and measures are generally indeed consistent with the resilience conceptual framework (Brown et al., 2023).In 2017, a study of over 185,000 U. S . In 2017, a study of over 185,000 U. S. In a study, army recruits undergoing basic combat training were analyzed to investigate the relationship between physical fitness, body composition, and injury risk in men and women, indicating that resilience research should not exclusively concentrate on illness, risk factors, or hardships. Instead, resilience study designs should focus on health maintenance, growth capacity, and prevention and/or protective pathways. Resilience involves the capacity to withstand, adjust to, rebound from, or thrive in the face of stressors or challenges (Crawford et al., 2022). Therefore, researchers should accurately detail the stressors or challenges when studying resilience outcomes.

Encouraging resilience in psychological intervention programs, particularly during public health emergencies like the pandemic, is essential due to its strong correlation. Research conducted in various cultural settings, such as China, has showed the significance of acknowledging Chinese cultural beliefs regarding the importance of controlling. emotions and actively dealing with problems using positive coping strategies (Xia & Duan, 2020b), in addition to the ways in which coping mechanisms empirical method in social support can be advantageous. Associated significantly with a decrease in psychological distress (Yu et al., 2020).

Other studies addressed the importance of sleep health as a measure of resilience and the need to expand research on sleep as a molecular, physical, and psychological resilience promoter (Guida et al., 2023).

Newer research highlighted the importance of an ecological resilience perspective, which asserts key interactions between individuals, communities, and cultures. Experts argued that resilience depends on the environment, influenced by political, historical, and temporal conditions(Tugade & Fredrickson, 2004). Others also believed that cultural values are the "cornerstones" of resilience because they provide information about pain and adversity, positive adaptation and health functioning, and social and ethical norms(Theron & Liebenberg, 2015). Even in the same country or population, communities with different cultural ideals may respond differently to disasters and must be more sensitive in understanding how cultural backgrounds shape positive development after adversity.

Research indicated potential for future exploration into protective factors and their acquisition and enhancement, particularly in understanding resilience as a multi-dimensional concept. Delving into the complex nature of resilience through multidimensional models to create strategies for boosting resilience in different groups or individuals dealing with diverse challenges. It also explored resilience's biological and neurological foundation and how these discoveries intersect with the other areas mentioned earlier. This aligned with the author's study, which conducted university studies of different natures to understand how culture shapes resilience mechanisms. It

will also focused on cultural resilience in in-depth interviews with qualitative research(Vella & Pai, 2019).

As stated in the review, early research on resilience mainly focused on human-centered methods and variable-centered methods. These studies have identified promoting factors in various fields, such as personal characteristics, family dynamics, community characteristics, and cultural background. Over time, research has shifted towards understanding the resilience process, exploring how these factors interact, advocating for a dynamic definition of resilience, and shifting from trait-based methods to processes including self-regulation. This study focused on self-regulation in resilience and whether different family and school environments impact techno-stress among Chinese students. this study could also try to improve techno-stress through person-centered therapy.

2. Concept of Coping Strategies

2.1 Definition of Coping Strategies

Multiple definitions of response were proposed(Carver, 1997), Recognizing reactions as how individuals cope with and alleviate the impacts of traumatic and stress-related circumstances. Coping strategies are cognitive and behavioral adjustments made in response to individual-specific external/internal stressors management (Billings & Moos, 1981; Folkman & Lazarus, 1985), a means by which individuals deal with stimulus situations and maintain psychological balance (LI, 2021). The literature emphasizes two coping strategies: Problem-solving approaches such as active coping, planning, and seeking practical social support, and acceptance are utilized to tackle the underlying cause of stress and lessen its impact. Emotion-focused coping includes turning to others for support, finding silver linings, using humor, and expressing emotions to lessen the impact of stress. The scholar suggested three ways of coping: focusing on the problem, focusing on emotions, and avoiding the issue.(Chen, 2016; R. Lazarus & S. Folkman, 1984). A problem-focused response is an action-driven response that aims to address a stressful situation by actively working to solve the problem or minimize its negative impact. Emotion-focused coping decreases stress by using

emotional reactions like self-blame, anger, or self-focus. Avoidance coping entails evading a stressful situation by engaging in social distractions or avoiding the situation instead of confronting and managing it actively.

According to the characteristics of Chinese people, scholars have divided the ways into positive and negative two ways of coping(Xie, 1998). Some researchers divided them into three factors: self-regulation, fantasy and escape, help and problem-solving, and conducted good validity and reliability tests (Fang et al., 2018).

2.2 Coping Strategies Theory

Coping has been seen as a multifaceted process for a long time (Folkman & Moskowitz, 2004), involving the strategies individuals employ to address the demands of challenging situations (Folkman, 2012). Coping is characterized by cognitive and behavioral efforts made by individuals to address stress, which is triggered when internal or external demands exceed personal resources (R. S. Lazarus & S. Folkman, 1984). Individuals used coping strategies to consciously and voluntarily regulate various aspects of their well-being in reaction to stress from everyday situations. These resources focused on two distinct aspects: internal factors such as personality traits, genetics, age, and gender, and external factors such as strategies to meet challenges in specific situations or cultural contexts. These two dimensions work together to allow individuals to exhibit distinct and recognizable behaviors (Zeidner & Endler, 1995). Experts presented distinguished scholars by cognitive coping strategies and behavioral coping strategies. The first one seeks to help deal with stressors and their outcomes, whereas the second one includes particular strategies to handle situations or emotions. Considering the problem situation, the closeness (active) or distance (passive) aspect is also taken into account (Billings & Moos, 1981). Assessing situations and previously used strategies will be the main focus of active cognitive coping, whereas directly addressing stressful situations and their effects will be the main focus of active behavioral coping. Putting the problem aside is a way to avoid cognitive coping. The emotion-focused coping strategy, whether employing cognitive or behavioral methods, aims to restore emotional balance in some way.

People's mental health is affected in many ways. In previous studies, coping strategies were a protective factor for mental health (Yalcin, 2015). Positive coping and negative coping were the exact opposite of coping strategies. Individuals with mainly positive coping strategies experience less emotional distress, while the opposite was true for those with negative coping strategies(Yan et al., 2021). Forgiveness has been postulated as a coping mechanism that can potentially decrease acute stress and consequently impact health positively (Worthington & Scherer, 2004).

Implicit theories are widely backed by evidence in their association with adaptive and maladaptive outcomes. Implicit theory and coping strategies have been examined in the context of romantic relationships(Knee, 1998). The findings indicated that seeing relationships as evolving positively correlated with various ways of maintaining relationships, including actively coping, planning, prioritizing the relationship over other activities, and reframing negative events in a positive light. Behavioral disengagement and resistant coping strategies were connected with an entity view of relationships. Researcher study suggested that individuals' coping strategies may be influenced by their implicit theories about a situation. Individuals who felt they can influence outcomes are more likely to used problem-solving techniques to cope, while those who perceived events as beyond their control may have turned to emotion-focused and externally-driven approaches(Roussi et al., 2000). When individuals faced challenging or intricate negative situations, it impacted their psychosocial outcomes, particularly mental well-being.

In summary, coping strategies included cognitive and behavioral adaptation to manage stressors and mitigate their impact. They were divided into problem-centered strategies and emotion-centered strategies. Cultural factors have led to a further classification of positive and negative coping methods in the Chinese environment, emphasizing the importance of self-regulation, fantasy, and avoidance, as well as seeking help and problem-solving. The coping strategies of this study were based on these classifications.

2.3 Research on Coping Strategies

Some evidence suggested that women tend to prefer emotion-based or avoidance coping strategies, whereas men tend to opt for a problem-centered approach when faced with stressful situations. Contrary to other findings, certain studies have demonstrated that gender did not play a role in problem-solving or avoidance behaviors, with women often opting for positive responses, seeking social support, and taking a problem-centered stance(Tamres et al., 2002). Nevertheless, the specific trends in how genders differ in coping mechanisms at universities or among university students have not been explored. It was crucial to study how various majors and grade levels affect outcomes. Some studies suggested that older students tend to employ more positive coping mechanisms compared to their younger counterparts, while students from various majors in college were inclined to utilize distinct coping strategies(Kumar et al., 2018).

Several studies have specifically examined the coping mechanisms used during the pandemic. For instance, a recent investigation examined how Pakistani Chinese students aged 19-25 years utilized emotional and problem-based coping techniques such as seeking social support, compassion, acceptance, and psychological detachment; The findings indicated that women and those with higher anxiety levels had a higher propensity to engage in social support and compassion seeking methods (Baloch et al., 2021). A different research project involving Chinese international students revealed that they faced significant stress as a result of the pandemic and that embracing Chinese cultural values could assist them in managing adverse feelings and creating successful coping mechanisms. In addition, people with lower levels of perceived social support (Xia & Duan, 2020b) had higher levels of psychological distress among Chinese people who used passive coping methods. Positive restructuring (strategies emphasizing positive emotions), acceptance, and humor were coping strategies associated with improved mental health in the Australian population sample, whereas self-blame, venting, behavioral disengagement, and self-

decentralized coping strategies were linked to poorer mental health(Gurvich et al., 2021).

Most students attempt to cope with this situation by concentrating on the positive elements, as indicated by research. Most students also reported utilizing targeted approaches to problem-solving, examining the root causes of the issue in order to confront it, and creating a plan of action.(Gaeta et al., 2021).

It was consistently found that students who participated in relaxation activities such as sports, exercise, and music during the pandemic lockdown benefitted when evaluating behavior-type strategies(Baloran, 2020).

Positive coping strategies, particularly positive reappraisal, were the main methods utilized by students. Some students preferred to seek social support and spirituality and engage in negative self-focus instead. Nevertheless, the majority of students mentioned using behavioral avoidance tactics when dealing with social distancing, including positive reevaluation, self-criticism, emotional openness, avoidance, seeking support after social interactions, and, to a smaller degree, turning to religion, which was prevalent in Chinese students. The tendency of participants to use problem-specific strategies over emotions could imply an awareness of the pandemic situation being outside of their control(Piergiovanni & Depaula, 2018), students believe they can handle the situation, even if their family and living conditions are supportive. For decades, researchers have placed emphasis on the importance of social resources in practical coping strategies(Billings & Moos, 1981), a possible supplement to personal resources. Yet, when faced with danger, individuals commonly exhibit a blend of different emotional reactions (R. S. Lazarus & S. Folkman, 1984).

Another research indicated that students with a strong tendency to seek information as a way of coping had better risk perception and greater well-being. (Yeo et al., 2014). Previous studies have highlighted the link between stress-coping methods and mood disorders such as anxiety and depression, supporting this discovery (Evans et al., 2015). The researchers considered efficient emotion regulation a practical approach, especially when analyzing prosocial behavior to manage stress (Eisenberg et

al., 1996). Research showed that ineffective coping could be a consequence of negative emotional reactions (Sandler et al., 2000). Individuals with lower emotional regulation skills might have exhibited more negative social behaviors when interacting with peers. (Eisenberg et al., 1993).

Coping methods are an important indicator of the mental health of Chinese students. Studies (Tan et al., 2021)showed that more Chinese students who use active coping methods perform better in interpersonal relationships, sleep quality, and negative emotional regulation. Getting social support was the main form of Chinese students' active response. One could better cope with environmental challenges if they have a strong social support network.

Studies have demonstrated that gender plays a role in coping mechanisms, and academics hold varying viewpoints on the extent to which males and females are affected differently. During the pandemic, research emphasized different coping strategies for global students, including emotional and problem-based approaches such as seeking social support and actively reassessing. During the lockdown period, sports and music activities are beneficial for relaxing and effectively responding. Overall, this study should focus on using positive coping methods and gaining social support to reduce techno-stress, which can help students recover and feel happy in challenging environments.

3. Concept Techno-Stress(TS)

3.1 Definition of Techno-Stress

Techno-stress is a form of work-related stress that emerges from the utilization of information and communication technology (Ayyagari et al., 2011). In a society witnessing a rise in IT and new technologies, a new psychosocial risk is emerging due to the growing use of information and communication technology. Campbell-Sills et al. (2006) said that stress is an adverse reaction of people due to long-term Stress or other demands imposed on them. The groups now ask about possible side effects from long-term computer exposure or other technology-related screens. The definition of techno-stress has evolved from the 1980s to now. The initial definition, put

forth by Brod (1982), Characterizes the TS phenomenon as "the struggle to acclimate or react to a new ICT in a beneficial way. " Weil and Rosen (1997) expanded the concept of TS to encompass "any adverse impacts on attitudes, thoughts, behavior, or physical health resulting from technology use, whether directly or indirectly. Individuals experience techno-stress when they find it challenging to manage technology-related demands (Tarafdar et al., 2007). Techno-stress is connected not just to technology but also to evolving changes in various learning areas. Develop and provide content, instructional materials, learning activities, and assessment tools. (Jena, 2015; Jung et al., 2012). There were five recognized techno-stressors in the scientific literature, which Tarafdar et al. (2007) supported, first described by et al., These factors were technology overload: ICT could motivate employees to work more quickly and for longer periods. Employees with constant access to ICT might feel obligated to stay in touch, leading to technical intrusion into their personal lives. The intrinsic quality of ICT is defined by its technical complexity. Make employees feel that their computer skills were insufficient; Technical insecurity: a situation where a user felt threatened by losing his / her work; Software and hardware changes and upgrades could place a burden on employees by creating technical uncertainty (Ragu-Nathan et al., 2008; Tarafdar et al., 2007).

On the other hand, three techno-stress inhibitors have been proposed: providing technical support, literacy promotion, and engagement promotion (Ragu-Nathan et al., 2008). Further inhibitors were also under consideration, such as improving technical efficacy (Shu et al., 2011) and adjusting regulatory priorities (Hwang & Cha, 2018). Research on the second topic has explored the wide consequences of excessive techno-stress, including psychological, physical, and social. In particular, special attention has been paid to studying the consequences of personal and professional life (Fuglseth & Sørebø, 2014; Tarafdar et al., 2015).

All these studies pointed to the effects of ongoing and excessive techno-stress and emphasized the need to address this issue for individual well-being and organizational success.The definition of techno-stress has evolved over time. Experts initially discussed the challenge of adjusting to new information and communication

technologies but later broadened the scope to encompass the negative impacts of technology on attitudes, behavior, and physiology. Providing technical support, promoting literacy, and encouraging participation have been recommended as strategies to alleviate techno-stress. This study highlighted how techno-stress significantly affects the mental, physical, and social health of Chinese students in both personal and academic settings, underlining the importance of individual requirements and the success of institutions.

3.2 Techno-Stress Theory

Experts have proposed that techno-stress was a term that describes the negative psychological and emotional impact of human interaction with technology. It covers all aspects of the pressure caused by using digital devices, software, and online platforms. According to the "role theory" applied to techno-stress, individuals may experience stress due to unclear expectations or role conflicts brought about by technology. For example, when employees are constantly connected through digital devices, distinguishing between work and personal life may be difficult for them (Tarafdar et al., 2010). In addition, experts have proposed the "cognitive theory" of techno-stress, which focuses on how excessive information from various digital sources can overwhelm individuals, decreasing stress and productivity. This overload could impair decision-making and increase anxiety(Eppler & Mengis, 2008). Ragu-Nathan et al. (2008) proposed the concept of "technology intrusion" which indicated that technology could invade individuals and social spaces, disrupt relationships, and cause stress. For example, constant notifications and updates interfered with face-to-face interaction or leisure time, leading to stress. Work-family interference was a theory that focuses on how technology blurs the line between work and family, causing challenges for individuals to unwind and relax. This continuous connection led to fatigue and decreased happiness(Derks et al., 2014). In terms of workplace impact, experts have explored how these techno-stress affect individuals in the workplace, affecting job satisfaction, stress levels, and overall productivity. The rapid pace of technological change led to a sense of pressure and the need for sustained adaptation. In order to

better capture the value of techno-stress, experts have conducted measurements and analysis and developed a microcomputer-based measurement method that indirectly captures some of the pressures and challenges related to technological use in organizational environments(Igbaria, 1994). In addition, some researchers have established a P-E fitted techno-stress scale to measure the techno-stress of Chinese students in technology-enhanced learning. Measuring techno-stress mainly includes two aspects, individual ability and individual needs. Individual abilities include their ability and skills to participate in technology-enhanced learning and the time and effort available to them. Individual needs included their need to improve the learning experience and improve learning performance through technically enhanced learning (X. Wang et al., 2020).

Markus and Keil (1994) discussed how designing information systems without considering human factors could lead to user stress and dissatisfaction. The author proposed a comprehensive psychological and technical framework to understand user proposed to information systems. They believed that designing and implementing IT systems affected user stress levels. There were many factors that could cause technological pressure: they identify various factors in the IT environment that contributed to technological pressure, such as information overload: users were overwhelmed by the large amount of information provided by the system; Role ambiguity: Unclear responsibilities or expectations related to the use of technology may led to stress; Interruption: The continuous interruption and notification of IT systems could disrupt work and increase stress; Work-life balance: Blurring the lines between work and personal life with IT systems can resulted in stress and fatigue; Empirical evidence, etc. This research theory provides empirical evidence and case studies to support their arguments, demonstrating how poorly designed IT systems had a negative impact on user satisfaction and productivity(Fleck et al., 2015).

In summary, understanding the performance of techno-stress in different environments had an impact on individual happiness and organizational outcomes. The theory emphasized the importance of effectively managing the use of technology to

alleviate its negative impact on stress and productivity. It could provide reference suggestions for the formulation of qualitative research interview questions in the later stage and also provide theoretical support for the development of phase 2 group counseling.

3.3 Research on Techno-Stress

Many studies have been conducted since the 1980s to investigate the nature, causes, and consequences of TS and potential methods to prevent it. Nevertheless, they tended to concentrate on various employee categories or integrate technology into their personal lives. The initial researchers were librarians, who were among the first individuals to engage in the technological revolution that gave rise to digital libraries. They reacted to introducing new technologies, displaying behaviors like resistance, and frequently exhibit an inability or reluctance to train or learn new ICT systems. The absence and lateness were the ultimate outcomes of this phenomenon (Bichteler, 1987).

Universities worldwide are eagerly promoting the integration of technology into education (Brooker et al., 2018; Flavin, 2016) . Experimenting with new teaching methods, such as Flipped classrooms and mixed learning, as well as digital resources for flexible degree programs like MOOCs, has resulted in a minimal focus on students' psychological reactions to these digital initiatives. Technology-enhanced learning methods like MOOC, blended learning, and flipped classrooms can offer students personalized learning opportunities, broaden their access to high-quality educational materials, and foster innovative approaches to knowledge acquisition(Brooker et al., 2018; Tuapawa, 2017). Nevertheless, students are frequently burdened with psychological stress due to the increased time, knowledge, and skills demanded by this new learning model(Brooker et al., 2018; Jung et al., 2012). Chinese students may experience techno-stress, a condition that arises from the challenges of adjusting to new technology and the evolving cognitive and social demands associated with its use (Brod, 1984; Ragu-Nathan et al., 2008). Techno-stress could have various adverse effects on individuals and their organizations (Fuglseth & Sørebø, 2014). Fatigue,

anxiety, and depression can lead to dissatisfaction with work, the intention to give up technology, and reduced productivity. Techno-stress in education can result in dissatisfaction with learning, frustration, lack of engagement in learning, and decreased performance (Jena, 2015; Jung et al., 2012). These issues are likely due to techno-stress from multitasking, information technology, and workloads related to information and communication technology (ICT) (Ibrahim et al., 2007). Goff (2011) believed that Chinese students had experienced some challenges in online learning, which means they clearly had obvious mental health problems. The most common mental health challenge experienced among Chinese students was stress. Technology-mediated techno-stress in Chinese students was their inability to adapt or respond appropriately to physical, emotional, or psychological needs in learning activities (Koolhaas et al., 2011; Kwaah & Essilfie, 2017).

The rise of the COVID-19 outbreak has increased the time for students to interact with technicians (Gualano et al., 2020). This is because, more than ever, students must use technology to ensure that learning continues. This has also made the previously more face-to-face education a form of student technology, bringing a major change to how teaching is presented to students globally. While the technology used in education is not new, they increasingly use content, preferring their devices more than ever before through online teaching platforms for online learning, online education, or e-learning, especially with the arrival of the COVID-19 pandemic (Ishola et al., 2022). Common factors contributing to increased stress/anxiety are the general uncertainty about the pandemic, rapid transition to and participation in online courses, and effects on their lives related to COVID-19 (C. Wang et al., 2020).

Regarding gender, different studies have reported differences in the amount of student perception of technology-induced stress. Regarding age (Thomee, Ekloof, Gustafsson, Nilsson, & Hagberg, 2007a), reported a high association between the high use of technology, weekly computer use, smartphones, Internet access, and mental health problems among Chinese students aged 19 to 25. Specifically, in this case, stress is a response to long-term use of computers, and in stress theory, stress is

thought to be caused by stressors, just as a techno-stressor causes techno-stress(Currie et al., 2009; Fitzgerald, 2021).

Long time working on a specific computer can cause stress and reduce attention(Dekker et al., 2020). Researchers on technology-related stress have presented strong evidence, claiming that stressors derived from technology use (technology stressors) affect stress responses and reduce individual well-being(Ayyagari et al., 2011), based on his comments on the body's feedback on user interaction with technology, reported that negative personal experiences cause high blood Stress, increased heart rate, and high-stress hormone levels (Srivastava et al., 2015). Essentially, users' reliance on technology triggers a high level of techno-stress. In other words, this is a technology-related problem stress that can significantly reduce the individual's level of cognitive function, thus reducing the level of technology-based task performance (Jurek et al., 2021).

In conclusion, ongoing research on techno-stress focused on understanding its nature, causes, consequences, and prevention methods. Universities worldwide were increasingly integrating technology into education through digital methods. However, the heightened demands for time, knowledge, and skills associated with these approaches often lead to psychological pressure among students, who exhibited resistance to technology and engage in negative coping behaviors. Furthermore, prolonged computer use could induce stress and reduce attention span, thereby affecting cognitive function and task performance. Overall, techno-stress research underscores its detrimental effects on individuals within and beyond educational settings. Therefore, it was crucial for this research to highlight these impacts and develop strategies to mitigate them, thereby enhancing overall well-being and performance.

4. Research on the Relationship between Resilience, Coping strategies and Techno-stress

4.1 Relationship Between Resilience and Coping strategies

One study suggested that although the neuropsychiatric burden of the COVID-19 epidemic is currently unknown, it may be severe (AlAteeq et al., 2020). Coping skills and resilience play a pivotal role in safeguarding individuals from blockade-induced fatigue and other psychological and mental health effects resulting from the pandemic and measures implemented to curb the disease.

Research on American students has indicated that resilience is linked to using task-focused coping methods in a positive way and avoiding emotion-focused strategies. Avoidance was not part of this study due to the researchers' hypothesis that it encompasses both adaptive and maladaptive responses(Campbell-Sills et al., 2006). Studies of 17–18 year students who survived in Italy yielded comparable findings. This study showed that resilience is positively related to a task-oriented approach(Dumont & Provost, 1999; Stratta et al., 2013) and a lack of emphasis on emotion-oriented style. The link between resilience and avoidance remains unexplored, while attachment stands out as a key factor in predicting resilience and coping strategies.(Craparo et al., 2018), Previous research has demonstrated a relationship between secure adult attachment and emotional regulation with successful coping mechanisms and resilience, suggesting a positive correlation between resilience and problem-solving coping strategies and a negative correlation with emotion-focused coping strategies. Furthermore, research indicated that there was no correlation between resilience and avoidance.

Research showed that students who adopt a growth mindset are more likely to employ adaptive coping techniques, including active coping. and fewer maladaptive coping strategies (such as behavioral disengagement) in confronting challenges associated with COVID-19, thereby enhancing their coping resilience (Janssen & van Atteveldt, 2023). In adults, resilience factors can also be identified through positive coping mechanisms(Helmreich et al., 2017) . Earlier investigations have demonstrated the direct and indirect influence of psychological resilience on mental health, which is

channeled through active coping strategies. People with greater resilience exhibit superior coping mechanisms and problem-solving skills and are less likely to avoid challenges (Steinhardt & Dolbier, 2008). Resilience is linked to positive coping strategies, which enable individuals to manage stress effectively (Feder et al., 2010). The presence of more adaptive coping strategies during the COVID-19 epidemic was significantly associated with reduced levels of depression and anxiety (Munk et al., 2020). Individuals with mental illness who exhibit more adaptive coping responses tend to have greater coping flexibility, leading to increased resilience and reduced negative emotions. In general, there was a strong correlation between resilience and adaptive coping. Chinese students opt for different coping strategies after evaluating events based on their psychological resilience. Coping methods step into the mediation role at this juncture(Xu & Yang, 2023).

The research above showed that highly resilience individuals typically employ effective task-centered coping methods. Attachment style was also a significant predictor of resilience and coping strategies, while a growth mindset correlates with adaptive coping strategies. Resilience was linked to positive coping skills and strong problem-solving abilities among adults. Coping strategies played a mediating role in how psychological resilience influences responses to events, with resilience individuals often experiencing lower levels of depression and anxiety. In conclusion, comprehending the connection between resilience and coping strategies is essential for research to leverage these abilities to mitigate techno-stress among Chinese students.

4.2 Relationship Between Resilience and Techno-stress

The use of ICT is essential in the organizational field. It should focus on resilience research, where the relationship between resilience and technology overload is regulated by work, and resilience is negatively associated with technology overload (Diller, 2016). There has not been much focus on mechanisms that enhance the positive view and potential of telecommuting, like boosting productivity and facilitating communication through ICT (Ayyagari et al., 2011), except for self-efficacy, to reduce the perception of technology overload. "Self-efficacy, optimism, hope, and resilience are

all positive attributes that help individuals to assess, improve, and successfully handle performance challenges in the contemporary workplace (Luthans, 2002). A closely related concept to self-efficacy is resilience, which serves as a buffer against stress, depression, and positive, yet possibly overpowering, experiences (Avey et al., 2011). Everyday problems might involve annoyance or tension, but they can also result in beneficial opportunities like more duties or modifications in the workplace. These individuals can better cope with daily problems by embracing positive emotions. Resilience, as a component of psychological capital, is anticipated to enhance the benefits of using information and communication technology and alleviate drawbacks like technology overload(Diller, 2016). Some scholars believed that resilience, in addition to the usual background, had a strong relevance to today's labor force, especially the working environment of employees. Given the ongoing Stress, keywords such as "survivor syndrome" were become increasingly important. Resilience is therefore becoming necessary to survive in an ICT-dominated working world (Luthans et al., 2006).

Resilient individuals are better equipped to cope with both positive and negative events compared to those lacking resilience. Resilient individuals can use high levels of positive emotions to access resources that help them recover from stress or adverse events (Tugade et al., 2004). The theory proposed that positive emotions expand individuals' cognitive capacity and facilitate the exploration of novel cognitive and behavioral pathways. Individuals who discovered new ways to act, such as using ICT to enhance their productivity and decrease their stress, developed various resources in areas like physical, intellectual, social, and psychological aspects (Fredrickson & Joiner, 2002). Technology may overwhelm people because they have to handle more tasks, work faster, or adjust their routines because of ICT (Tu et al., 2005) . This results in a feeling that one must always be working. Studies have used technical overload as a measure of techno-stress, viewing it as a trigger rather than just a feature.(Ayyagari et al., 2011). Hence, if we can reduce technical overload, we should be able to prevent techno-stress from occurring in the first place. Resilience views risk

factors as individual strengths rather than dangers(Masten et al., 2003) . For example, technical overload, in this situation. This aligns with a prior investigation conducted by researcher who investigated the inverse relationship between psychological capital and stress symptoms. Despite all the criticism surrounding the pervasive nature of technology and its impact on the workplace, it was important to acknowledge the paradox of using ICT. It was crucial to acknowledge the dual nature of ICT usage in this context argue that employees who have high levels of resilience could effectively utilize work resources and demonstrate greater dedication to their work(Avey et al., 2009). Individuals can overcome challenges and maintain resilience in stressful situations by being able to bounce back. Resilient individuals are at lower risk of vulnerability since they have acquired skills to handle adversity and shield themselves from harm. "This "growing inclination to face the challenge (Grant et al., 2009). Combining "self-efficacy" and "personal sense of control" enables individuals to harness their resilience potential, influencing their cognitive use of personal information technology and shaping their approach to managing technology. Resilient individuals believe that technology overload is less harmful and appreciate the advantages of information and communication technology.

Research indicated that minimizing technical overload could prevent techno-stress, with resilience acting as a buffer against stress symptoms associated with ICT. Resilient individuals viewed technology as a beneficial tool rather than a hindrance, effectively addressing work challenges and maintaining commitment. In this study, it was essential to investigate beneficial resilience strategies from students' research findings to help them turn techno-stress into opportunities for personal growth.

4.3 Relationship Between Coping strategies and Techno-stress

Stress systems and coping behaviors are both adaptive mechanisms that have been positively selected through evolution. Coping behavior can be deemed successful based on how well it reduces physiological stress indicators or eliminates unpleasant situations to promote health restoration (Wechsler, 1995).

Research showed that seeking social support for different stressors is frequently seen as a beneficial strategy for coping with stress during crises (Sun et al., 2020). People used various adaptive coping strategies to deal with stress. Common coping strategies included distraction, active coping, and seeking emotional social support as their go-to coping strategies. Women more commonly utilized multiple emotion-centered strategies. Similarly, caregivers demonstrated higher levels of emotional and religious support coping and a substantial increase in the utilization of positive strategies and seeking instrumental social support. Less efficient strategies such as substance use, behavioral disengagement, and humor were more commonly utilized by younger participants and financially unstable individuals (Park et al., 2020). Prior studies had shown that despite the availability of psychological support for Chinese students, they tended to rely more on informal sources like friends and family for help(Raunic & Xenos, 2008). Studies also indicated that students who utilize "seeking social support and avoiding stress coping strategies" were more likely to have favorable attitudes towards seeking psychological assistance. Conversely, students who relied on the self-preservation strategy exhibited more negative views toward seeking psychological assistance. (Yelpaze & CEYHAN, 2020). Research from other sources had suggested that Chinese students are not inclined to seek psychological help (Krow, 2020; Xien & Zakaria, 2022).

There is a notable lack of research on how positive emotions and coping mechanisms are utilized in high-stress scenarios, suggesting a limited focus on understanding the issue internally (Jackson & Warren, 2000). Self-regulation can help lessen the impact of stress on regulating childhood behaviors (Lengua & Long, 2002). Additionally, it has been found that optimistic evaluations of stressful circumstances (having confidence in one's ability to deal with them) often lead to successful coping mechanisms.

Coping methods have an impact on psychological issues. Numerous studies have demonstrated a link between coping strategies and mental health and well-being. Positive coping led to increased positive cognitive and behavioral adaptation

when dealing with stressful situations, thereby lowering the likelihood of anxiety and depression (Andrews et al., 1978; Zong et al., 2010). Chinese students who exhibited higher levels of optimism and employ positive coping strategies were said to be more inclined to engage in social interactions and effectively handle the adverse impacts of stress (Rui & Xiao, 2016).

Researchers investigated how ICT coping strategies affect work exhaustion levels in different groups and individuals' reactions to work-family conflict or distress. Classified coping strategies were emotional concentration, problem concentration, cognitive, behavioral, control, avoidance, functional, and dysfunctional strategies (Gaudioso et al., 2016). The Carver Coping Strategies Scale adjusted to the ICT context and distinguished two sets of coping mechanisms categorized by two distinct factors, labeled as adaptive (or problem-solving) and maladaptive (or ineffective) coping strategies(Carver et al., 1989). The initial group includes these tactics: direct active response, technical assistance, and strategic planning. The second cluster consists of denial, detachment, and venting. A distinct grouping of coping methods within the emotional category was not identified following an initial factor analysis involving all coping techniques or in attempting a subsequent confirmatory factor analysis incorporating the organization of coping methods within the emotional category. Some research indicated that elevated distress levels lead to increased employment of both adaptive and maladaptive coping mechanisms. ICTs ineffective coping methods did not effectively decrease work exhaustion levels. They indeed raise them. Using ICT to adapt coping strategies and lower work fatigue levels. Also, work exhaustion and adaptive coping strategies were positively related to gender (female). On the contrary, daily work hours result in conflicts between work and family responsibilities, prompting individuals to employ adaptive coping mechanisms. The strength of the relationship and negative consequences between perceived techno-stressors and stress responses largely depend on the more or less adaptive way of dealing with techno-stress (Beaudry & Pinsonneault, 2005; Gaudioso et al., 2017). investigated the coping strategies of IT users based on the challenges posed by learning new computer technologies. Their

findings indicate that using emotion-based coping mechanisms can alleviate stress to a certain degree, but they do not contribute to the long-term reduction of techno-stress. (Pirkkalainen et al., 2017). Furthermore, it was shown that the more intense the technical distress caused by perceived ICT overload and invasion, the greater the inclination to use maladaptive coping mechanisms. Some knowledge of coping strategies for techno-stress did not align with knowledge of training to reduce techno-stress and the effectiveness of interventions. There was a particular absence of longitudinal studies(Gaudioso et al., 2017).

Studies examined various approaches to dealing with techno-stress, which may include finding information about what to do under any techno-stress, avoiding any technology-stress action, elucidating the rationale behind decisions and actions taken to alleviate the emotional toll of techno-stress. Emotion-focused coping methods include the act of avoiding recognizing mistakes, withdrawing from social interactions, using humor in stressful situations, refusing to acknowledge errors, and resorting to medication (Monat & Lazarus, 1991). Despite this, coping strategies focused on emotions may not effectively address intimidation or stress, while both problem-focused and emotion-centered strategies for managing techno-stress have their drawbacks(Wang et al., 2008). Much attention is given to how individuals cope with stress, while the focus on organizational dynamics is limited, suggesting that the internal environment and organizational culture influence work stress among employees. Each organization should take practical measures to reduce technology-related stress (techno-stress) and ensure the productivity and well-being of its personnel(Lansisalmi et al., 2000; Rowold & Schlotz, 2009).

To sum up, the preceding information delves into how coping strategies were linked to techno-stress, highlighting the different ways individuals deal with this stress, both positively and negatively. It highlighted the significance of managing mental health efficiently in the face of technological challenges and underscores the need for proactive coping mechanisms like actively addressing problems and seeking emotional support. Studies demonstrated that resilience and optimism were essential in reducing

techno-stress. Organizational factors could impact how an individual experiences techno-stress. The central aimed of this study was to incorporate coping mechanisms to deal with the emotional and practical effects of techno-stress, aimed to positively influence both physical and mental well-being on an individual level.

4.4 Relationship between Resilience, Coping strategies and Techno-stress

Bataineh (2013) noted that stress is an adverse reaction of people due to long-term stress or other demands imposed on them. long-term computer use may led to psychophysiological stress responses caused by tension(Thomée et al., 2012). Both techno-stress and stress were mental and physical discomfort due to stimulation.

Resilient individuals possess a more adaptable cognitive framework than those who are vulnerable, relying on internal and external resources to navigate challenges such as psychological traits and family assistance (Friborg et al., 2003). Coping and stress involve mental and/or behavioral strategies to deal with challenging circumstances that strain personal resources. If an adaptive effort like planning and seeking social support is involved, this endeavor is seen as problem-centered. Being emotionally centered is indicated by the presence of maladaptive behaviors like blame and denial (Carver et al., 1989). Resilient individuals enhance their mental health outcomes by refining their coping mechanisms and concentrating on them (Mayordomo et al., 2016).

Certain academics suggested that resilience could be understood in alternative manners. Resilience was a distinctive and beneficial personality trait that helps individuals counter the adverse impacts of stress and minimize the risk of depression, showing a negative relationship with stress levels (Chen et al., 2017) .

In the midst of a pandemic, sufficient resilience was vital for recovering from challenging situations and managing the stress induced by the pandemic and other constraints such as lockdown measures (Elmer et al., 2020; Ye et al., 2020).

Mental health problems are still emerging, especially as students and institutions shift significantly from in-person classes to online learning platforms, which, in most cases, do not give undergraduates space to communicate their feelings in the

form of physical relationships directly. Therefore, undergraduates' continuous and chronic use of technology and its consequent consequences require urgent measures as researchers' reported mental state, behavior, and health are affected by stress (Sydney-Agbor et al., 2018). Moreover, issues related to Chinese students' mental health have received wide attention in education, especially online learning, which is a result of stress levels such as living independently, learning, academic workload, and stress (Kunjiapu & Kunasegaran, 2021). In previous studies, it has been demonstrated that resilience helps individuals cope with stress and challenges more efficiently, as well as prevented the onset of mental health problems. Resilience's influence on mental health depends on coping mechanisms. Chinese experts believed that Chinese students experience some challenges in online learning, which means that there were obvious mental health problems among them and that the most experienced mental health challenge among Chinese students is stress (Xu & Yang, 2023). Technology-mediated techno-stress in Chinese students was their inability to adapt or respond appropriately to physical, emotional, or psychological needs in learning activities(Goff, 2011).

Balancing the physical issues during the early and late stages post-COVID-19 infection was a pressing matter that needs addressing. For the different school systems, the training mode of students and the requirements for students were not the same. After the outbreak of Chinese students. Resilience experienced outbreaks of Chinese students in the face of various epidemics of how it tended to be more positive or more negative; in addition, in the face of various outbreaks because of environmental problems, reversed transmission using online teaching, and the new era of various online courses (MOOC, wisdom tree, the Chinese students' spontaneous use learning platform, etc.), whether students had techno-stress is the research needs to pay attention to.

The above content explored the relationship between resilience, coping strategies, and techno-stress. Resilient individuals were known for their adaptive cognitive framework and effective use of internal and external resources to manage stress and respond to challenges. Coping strategies played a crucial role in mental

health outcomes and stress management. Therefore, this study focused on the valuable trait of resilience, which could alleviate stress levels and reduce the risk of depression. Addressing these challenges requires a focus on understanding and managing techno-stress in the educational environment. This also had implications for the development of group counseling programs in this study, emphasizing resilience and effective coping strategies to support student mental health.

5. Integrative Group Counseling

5.1 Definition of Group Counseling

Group counseling has both preventative and therapeutic benefits in psychology. It focuses on promoting personal growth in the discovery of internal forces. The dynamics of group counseling provide a safe environment with feelings of trust, co-emotions, and encouragement for members to share experiences and explore their concerns. Support team members in developing new strengths and solving personal problems to better manage their lives and future (Corey, 2015).

Group counseling falls on a spectrum between group coaching and group psychotherapy. Implement group counseling sessions to address the issue before it escalates proactively. The educational curriculum does not systematically cover the content that includes vocational, personal, and social information. The average classroom accommodates between 20 and 35 students. Give precise details. Group counseling serves as a solution for individuals trapped in a self-destructive behavioral cycle yet capable of overcoming it without the need for counseling intervention. Nevertheless, counseling intervention can lead to a faster recovery and reduce emotional distress for the individual seeking help. The definition of group counseling was provided. Group counseling is an interactive process that emphasizes awareness of thoughts and behaviors, incorporating elements like tolerance, facing reality, emotional release, and the therapeutic benefits of trust, care, understanding, acceptance, and support. A small group was formed to cultivate and nurture the therapeutic function through the sharing of personal concerns with peers and consultants. Group consultants are regular individuals with worries that do not

necessitate a major overhaul in character. Through group interactions, consultants can enhance comprehension and approval of values and goals, as well as adapt or eliminate specific attitudes and behavior (Gazda et al., 1967).

5.2 Techniques of Group Counseling

Group counseling employs various techniques to facilitate therapeutic processes and achieve therapeutic goals within a group setting. Integrative group counseling combines principles and techniques from different therapeutic approaches to address a wide range of client needs within a group setting. This approach acknowledges that no single theory or technique fits all clients, so it integrates elements from various therapeutic modalities. Here are some common techniques used in integrative group counseling:

Icebreakers and Warm-up Activities: These are used at the beginning of group sessions to help members feel comfortable, build rapport, and establish trust among group participants. Psychoeducation: Providing information about mental health issues, coping strategies, or specific topics relevant to the group's focus (e.g., stress management, communication skills). Group Discussion: Open discussions where members can share their thoughts, feelings, and experiences related to specific topics or challenges. This fosters mutual support and validation among group members. Supportive Feedback: Encouraging members to give and receive constructive feedback from each other. This helps members gain insights into their behavior and perspectives while learning to communicate effectively. Group members challenge and change negative thought patterns or irrational beliefs through cognitive restructuring. This technique is often used in cognitive-behavioral group therapy. Behavioral Experiments: Structured activities where group members test new behaviors or coping strategies in a safe environment. This helps members gain confidence and insight into their own reactions and responses. Members can be taught mindfulness exercises. Utilize deep breathing, progressive muscle relaxation, or guided imagery as techniques to reduce stress and enhance emotional regulation. Experiential Techniques: Engaging group members in activities that facilitate emotional expression, exploration of interpersonal

dynamics, and experiential learning. This may include role-playing, guided imagery, or expressive arts. Narrative Techniques: Exploring group members' personal stories, identities, and the meaning they attribute to their experiences. This can help reframe challenges and promote resilience. Family Systems Perspective: Considering how family dynamics and relationships influence individual members. Group members may explore family roles, communication patterns, and generational influences. Gestalt Techniques: Using techniques such as empty chair work or role-playing to facilitate awareness, confrontation of unresolved issues, and integrating conflicting aspects of the self. Integration and Synthesis: Continually adapting and integrating techniques based on group members' responses, progress, and emerging therapeutic needs. This flexibility allows for a tailored approach to each group's dynamics and goals. Problem-Solving: Collaboratively identifying and exploring solutions to challenges or issues faced by group members. This technique encourages active participation and empowers members to take positive action. Psychoanalytic Techniques: Exploring unconscious thoughts, feelings, and behaviors through techniques like free association, dream analysis, or interpretation of group dynamics. Process-Oriented Techniques: Paying attention to the group's dynamics, interactions, and communication patterns to explore underlying issues, conflicts, or themes emerging within the group. Closure and Summarization: Concluding group sessions by summarizing key points discussed, reflecting on members' progress, and setting goals for future sessions. This provides closure and reinforces learning(Gladding, 1994).

Tailoring these techniques to meet the specific needs of group members and the objectives of group counseling is essential, whether focused on improving interpersonal relationships, managing specific mental health issues, enhancing coping skills, or fostering personal growth(Stephens et al., 2010).

The concept of group dynamics involves the methods employed in group mentoring, such as social dramas, popular groups, group discussions, and other related techniques (Gazda, 1969). Group guidance focuses on enhancing self-awareness and interpersonal understanding, with attitude change being a secondary outcome or

objective. Classroom teachers or counselors take on the role of leaders by utilizing different instructional tools and group dynamics principles to inspire students and encourage group participation. Teaching media consists of incomplete narratives, puppet performances, movies, short films, guest presentations, audio and video interviews, student presentations, and more.

Besides the main methods of the chosen counseling approach, numerous crucial counseling tactics include. Listening actively, reflecting, clarifying, asking questions, summarizing, linking ideas, giving mini-lectures, providing information, offering encouragement and support, setting the tone, modeling behaviors, sharing personal experiences, using eye contact, voice modulation, and energy, recognizing allies, working together, being aware of multicultural differences.(Jacobs et al., 2015).

In summary, group counseling required therapists to understand various treatment methods and proficiently adjust techniques to meet group members' unique characteristics and needs. This study aimed to provide comprehensive support and promote the reduction of techno-stress in Chinese students in a group setting by combining multiple technologies and integrative group counseling.

5.3 Stage of Group Counseling

Corey (2015) proposed a six-stage model: formation, positioning and exploration, impedance, work, consolidation, and effect evaluation and pursuit. Group development begins with the first three stages, which are considered the early stages, and progresses to the later stages, represented by the last three stages.

Stage 1: The formation stage is to prepare for the group counseling, by announcing the situation of the advisory group, recruiting members with screening and selection criteria, organizing a preliminary group meeting to grasp the group's objectives and its members.

Stage 2: The positioning stage is the initial stage of building a trusting environment so members can share their experiences. Basic rules, guidelines, and group norms have been formulated as the basis for group operation.

Stage 3: The transition phase is a time when members are contradictory about sharing their experience with the team and how much content they should share. They will still be partially defensive and anxious about expressing certain feelings, thoughts, and responses.

Stage 4: The work stage is when members have high trust and fully open sharing. They actively address their problems, translating insight into action and applying it to groups and the outside world.

Stage 5: The last stage is the time of integration. Group members are focused on applying insights from the group to daily life. Members shared their course of action, expressed positive views, and expressed concerns with others.

Stage 6: The evaluation and assessment of the group's impact are part of the latter group stage. It can be a follow-up test meeting to help members gain a realistic group impact on themselves and other members.

Other experts pointed out that overall group counseling can be divided into three initial stages: the initial stage (Jacobs et al., 2015).

Start stage: Time used to introduce and discuss topics such as group goals, possible events, concern group rules, comfort levels, group content, etc. At this stage, members examine the extent to which other members and themselves share freely in the group.

Work stage: the intermediate stage, namely the work stage, is the stage in which the members focus on the goals of the group.

End phase: The end phase is used to end the group. At this stage, members share their gains and changes, plan how to apply what they have learned, say goodbye to each other, and address the end of the group.

Numerous counseling, therapy, assistance, and development groups experience the transition period. Leaders should acknowledge that their group is in a transitional phase and ensure that their members are not pushed too quickly, which could cause discomfort. Johnson and Johnson (1991) proposed a seven-stage model to describe the development of members in the group: defining and building procedures;

following procedures; understanding maturity and building trust; resistance and distinction; commitment and identifying with the target program and other members; ending Currie was used to propose a six-stage model(Currie et al., 2009).

In summary, group counseling emphasized flexible and comprehensive methods, drawing on various counseling methods (such as cognitive-behavioral and solution-focused narrative counseling) to meet the different needs of participants. Therefore, this study aimed to utilize the power of group dynamics, mutual support, and diverse perspectives to promote transformative learning and sustainable change.

5.4 Group Counseling Research

Clinicians and researchers agreed that group counseling was a practical and successful approach to tackling various issues in children and adolescents. Various child and adolescent difficulties could be effectively addressed through group counseling, as limited literature reviews indicate (Whiston & Sexton, 1998). It was equally effective as receiving personal counseling (Hoag & Burlingame, 1997; Shechtman & Ben-David, 1999), and it was definitely more cost-effective. Most children's advisory groups were based in the school(DeLucia-Waack & Gellman, 2007). Group interventions have variations in their objectives and methods. They offer psychoeducational groups, counseling, interpersonal problem-solving, psychotherapy, and personal reconstruction (Gazda et al., 2001). Prevention-focused psychoeducation groups are typically structured around specific subject matter, with the goal of instructing specific skills and targeting specific training aims (e.g., life skills training). The groups all have different theoretical approaches, such as humanism, cognitive orientation, and behavioral orientation(Shechtman, 2014).

Many clinicians in individual therapy favored integration-oriented, expressive, and supportive advisory groups for children and adolescents (Hill et al., 2005) or panel counseling (Yalom & Crouch, 1990). Each stage in the comprehensive theory has its own corresponding theory. Initiating this process with a human-centered approach fosters the development of a strong client-therapist bond and a supportive group dynamic. (Prochaska, 1999). This method continues to utilized a psychodynamic

approach to help children explore their social and emotional difficulties and develop understanding and awareness. Clients apply the knowledge and insight acquired within the group to their everyday lives through a cognitive behavioral approach in the end. The therapist's guidance affects how much each theory is reflected in the process of change. Cultural distinctions and how they affect results are another issue to consider. The literature suggested that it was more difficult for children from collectivist cultures to play a role in supporting expressive group counseling; practitioners and theorists (De Piano, 2020) often recommend using cognitive therapy in collectivist cultures.

Group counseling was introduced to China in the 1990s. The rapid development of Chinese society in recent decades has provided a broad application space for group counseling(Ziyang & Wei, 2017). For more than 20 years, Chinese group counseling practitioners and researchers have had to improve the effect of group counseling, to adapt to social development, the localization of group counseling Chinese unremitting exploration, Chinese psychological counseling development faces many difficulties; the first is the Chinese inherent mentality of psychological counseling, the Chinese people by traditional ideas, such as each genre fusion is weak, less group counseling and counseling time is too long, etc. Finally, the cultural differences between the East and the West that Western psychological counseling cannot fully adapt to the Chinese people's psychological characteristics and behavioral habits in some aspects. Different national cultures and histories make people's consciousness, values, and personalities different. Psychological counseling is not necessarily universal on cross-cultural issues(Wen, 2009). Individuals in each culture have unique psychological lifestyles, which construct different psychological worlds. It is difficult for the product of any foreign culture to really enter, which is the internal impetus of the development of local psychology (Zhou, 2001).

Chinese group counseling has initially formed its own theoretical system and practical application technology. Actively explore the unfinished way of localization group counseling. Chinese group counseling has the following characteristics: First, it is based on China's national conditions, and practice is rooted in China and comes from

practice. It is in a period of China's social transformation and rapid economic development. Secondly, it is based on Chinese people's cultural background and psychological characteristics, not "mechanically". Finally, it is to draw lessons from the Western group counseling theories and techniques, "foreign for China" does not exclude any effective counseling techniques and methods, as long as the group counseling can help to improve the effect of counseling practice, can be used in the counseling. The application theme of group counseling is expanding. Group counseling is currently used not only for addressing individual psychological issues but also integrated with ideological and political education, serving as a significant platform for ideological and political education(Lu et al., 2010). In addition, group counseling is also used to stimulate students' learning potential. With the social reform and rapid economic development of China, the social consumer demand for psychological counseling services is increasing. Localized group counseling is not only suitable for the psychological characteristics of Chinese people, easy to be accepted by Chinese people, but also has high efficiency and good results. For Chinese students, struggling to avoid psychological exhaustion caused by stress and problems during the COVID-19 outbreak, switching to counseling is a concrete manifestation of positive response. Furthermore, the way mental health and my journey in obtaining psychological assistance play crucial roles in influencing the willingness of Chinese students to seek help for psychological issues(Liang et al., 2020). Getting psychological support is a coping mechanism for dealing with psychological distress. The virus spreading quickly among people is a barrier to traditional in-person psychological therapy. Online mental health counseling services are commonly available to offer a free 24/7 service for those in need due to their safety, convenience, promptness, and effectiveness.(Lu et al., 2010). Chinese students may have access to a wealth of psychological services from the state and different social institutions, but it remains unclear how much these resources are actually utilized. Studies conducted in the past have revealed that individuals prioritize taking care of themselves before attending to the needs of others when faced with psychological issues. (Jiang & Xia, 2006). There is a lack of full

utilization of professional psychological counseling and mental health services among Chinese students. (Liang et al., 2020). Psychological symptoms were observed in some students from the non-counseling group, with 64% not seeking help. Chinese students in this study exhibited a significantly low tendency to seek psychological assistance, even though there were plenty of resources provided by the Ministry of Education and other social institutions. Chinese students continued to have a significant chance of not being able to use mental health services and typically maintain a pessimistic attitude towards counseling, consistent with past research results (Guang-rong & Ming, 2003; Hunt & Eisenberg, 2010).

Chinese students usually rely on friends and family for support instead of seeking professional mental health services during times of psychological stress. Numerous theories suggested to clarify their reluctance in seeking professional assistance for common psychological problems. People might have been hesitant to seek help due to psychological obstacles such as stigma, negative attitudes, and concerns about judgment(Gulliver et al., 2010). Psychological counseling is viewed as a crucial option for Chinese students with poor mental health, typically sought out as a final option in the absence of other sources of support.(Zhang et al., 2023). Turning to psychological help can be a helpful way to cope, whereas avoiding professional counseling, even in the face of serious psychological issues, is a way to avoid dealing with the problem. The traits of cultures that emphasize collectivism, such as the traditional Chinese Culture, are reflected in this type of remedy or coping mechanism. In traditional Chinese culture, avoidance coping is a prominent strategy used to deal with challenges, and it is linked to the psychological symptoms experienced by young Chinese individuals (Tao et al., 2000). However, found that avoidance coping may have been more stressful than uncontrollable stressors (Gan et al., 2004), They usually choose to overlook or steer clear of the stressor, thereby altering the situation to reduce the stress stemming from emotional issues. Stigma also hindered Chinese students from seeking psychological assistance. Many Chinese students with mental health issues attempted to conceal their struggles when their symptoms were not visible, afraid of

being stigmatized if they seek therapy. Studies have shown that mental illness can result in unfavorable attitudes towards seeking help, disrupt the selection of health-promoting behaviors, and obstruct the seeking of psychological assistance (Tang et al., 2015).

The above studies showed that resilience and stress had achieved consistent results, but it remained to prove whether this consistency could increase other variables and fully act on students' mental health in the post-epidemic era. In particular, how the role of protective factors such as resilience and coping strategies in the post-epidemic era had a short history from the concept to the empirical research and is still in the stage of theoretical improvement. First of all, in addition to analyzing the causes and consequences, how to form and develop the techno-stress environment of Chinese students in the post-epidemic era is also very important to improve the post-epidemic theory. It is necessary to master how the protective factors of Chinese students operate under the techno-stress, and there is no necessary attention at present.Secondly, China's counseling services have developed well in recent years. Under the epidemic situation, the number of people requiring counseling has become more, and the techno-stress in the epidemic environment has become obvious and prominent. The method of decreasing techno-stress through group counseling was another focus *of* this research.Therefore, this study focused on the importance of integrating group counseling flexibility, creativity, and evidence-based practices in addressing complex psychological issues in group environments.

5.5 Group Counseling Theory

5.5.1 Person-Centered Therapy (PCT)

Concept

Scholar follows the principles of humanistic psychology, holding the belief that individuals are reliable, capable, introspective, and autonomous, capable of enacting positive transformations and leading fulfilling and impactful lives. Therapists who can genuinely express sincerity, support, care, and nonjudgmental understanding are more likely to see changes in their clients.

As Corey (2012) perspective, therapists could cultivate a growth-enhancing setting for clients to progress and actualize their full potential by

demonstrating three fundamental traits: (1) consistency (authenticity); (2) unconditional positive regard (acceptance and empathy); and (3) accurate empathic understanding (profound insight into others' inner worlds).

Based on Maslow's (1970) Investigated of individuals who implemented changes independently, understanding this aspect of human behavior was crucial for psychotherapy. The therapist placed the main responsibility on the client because they trusted in the individual's inherent capacity to overcome maladjustment and progress toward mental well-being and personal growth. Person-centered therapy rejected the idea of the therapist taking on a controlling role, as it was believed that negative clients might rely on negative customers. Its therapeutic basis is the ability to perceive and self-guide changes in attitude and behavior(Corey, 2012).

Person-centered treatment and other humanist and existentialist approaches can be understood as a form of counseling and psychotherapy, emphasizing "conceptualization and engaging people in a highly valued and respectful manner" (Cooper, 2007). Although person-centered theorists consider certain psychological characteristics, such as conditions of value or value (Rogers, 2013), it noted that patient-centered treatment is "not centered on what the average patient will or should be." It is not centered on the theory outside of the client. The therapist focuses entirely on understanding the patient as an individual and his unique"(Levitt & Brodley, 2005).

According to the theory, human behavior always tends to be complete and self-fulfilling, and each group member and even the whole group can find their own direction without too much help from the group mentor [or "helper" (Facilitator]. Person-centered therapy focuses more on the personality traits of the group instructor than its guiding technique. Establishing a welcoming group environment is crucial for therapy focused on individuals. The theory should be seen more as being a guide to life rather than as a guide to behavior (Corey, 2015).

Establishing a good rapport with the group members is essential for the group helpers to cultivate a positive and therapeutic ambiance. This requires several

attitudes based on accurate empathy, acceptance, selfless enthusiasm, attention, and sincerity. If the helpers can show these attitudes, an atmosphere of acceptance and attention will be naturally presented. Once the atmosphere is established, group members will let down their psychological guards, tap into their inner strengths, and work towards their objectives. which in turn will promote important individual changes. Contemporary human-centered group therapy was the result of more than sixty years of continuous innovation, and the theory was still being revised (Cain, 2002). introduced the concept of non-directive counseling from Rogers in the early 1940s. It emphasized the sincerity and empathy of therapists and regards the therapeutic relationship as an important factor in effective group guidance. Rogers believed that customers should be able to move forward in an environment suitable for growth actively. He believed that organisms tend to maintain and improve themselves, and the core resource of this tendency is to seek satisfaction and self-realization. The client's tendency to self-realize was not to separate himself from relationships, interdependence, and interaction (Brodley, 1996). The identification of the individual self-realization tendency is always the basis of this theory.

Person-centered therapy (PCT) is based on humanistic psychology, which asserts that individuals possess the inherent capacity for growth and self-improvement. PCT prioritizing the uniqueness of each individual, PCT principles create a supportive atmosphere where group members feel accepted and understood. Overall, this study of person-centered therapy stands out for its emphasis on the client's autonomy and the role of the therapeutic relationship in facilitating self-actualization and personal growth.

Techniques

The implementation of human-centered therapy has no technical basis, and working with the client and entering their perceived world in an imaginary way is enough to advance the change of the customer. Therapists with person-centered therapy can also make recommendations to customers, but how to make them becomes crucial. The therapist is close to (presence) and fully committed to the client and what

they care about (Cain, 2010). Therapists must truly demonstrate the literacy and listening skills to accept, respect, understand, and respond. The therapist can use some techniques to promote the relationship with the client in an empathic way. However, technology does not try to be used to "do anything" to customers (Bohart & Watson, 2011).

Therapists can openly discuss their experiences, approach clients with compassion, and take a more hands-on role in the therapeutic process (Bozarth et al., 2002). Immediacy, or the interactions between the client and therapist, is important in this method. This development of person-centered therapies encourages therapists to adopt more diverse approaches and allows for considerable diversity in individual style.

Experts conducted a series of more important studies on the different types of empathy response. In these studies, the person-centered counseling text was analyzed in a "three times" way: the client stated, then the consultant stated and then the client stated. The analysis concluded that the consultants' empathy was more profound than the previous customer statements(Sachse, 1990; Sachse & Elliott, 2002), which led to a deeper level of customer discussion. However, customers occasionally enter deeper processes without a counselor's response. This study thus provided direct evidence of the impact of the counselor's empathy ability on the counseling process. Stiles et al. (2008) explored the way the consultant thinks with the contradictory self-configuration (or "voice") in the client's speech. This was the first study to examine the focus of contemporary human-centered practice theory and find that consultants seemed to be more effective in thinking about one configuration at a time and that customers were able to use this thought statement to start building a "bridge of meaning" between configurations that were previously self-fully polarized.

Consultant consistency and sincerity. Previously highlighted, lessons drawn from the Wisconsin Schizia Study emphasized the role of person-centered counseling practice in customer consistency or sincerity. Subsequent studied of this aspect of the counseling process more comprehensively evaluated the nature of this phenomenon. Geller and colleagues (Geller & Greenberg, 2002; Geller et al., 2010)

used qualitative conversations to develop the presence of the consultant ("My consultant was always present when he treated me"), which showed that the client considered the presence of the consultant was related to good meeting outcomes. So the concept of presence seemed to seize the consultant's broad experience of consistency, which was particularly important for customers in human-centered psychological counseling talks; the consistency of specific moments of thorough analysis found that the most powerful part of treatment is marked by the emergence of mutual consistent, the customers and consultants were open to each other (Grafanaki & McLeod, 2002). This high-impact experience of realism in the study of relationship depth has been discussed. In general, these studies-sex and relationship depth to a series of aspects of the treatment process, not well understood or documented before, the human-centered consultant was extremely sensitive to the possibility of an important study conducted by Schnellbacher & Leijssen(Schnellbacher & Leijssen, 2009) also produced a more subtle evaluation of the sincerity and consistency of consultants returned to the six customers to discuss their emotions and views on the relationship with the consultant. For two of the customers, the reliability and consistency of their consultants was very important and significant. Instead, one customer said that if her counselor could share his instantaneous experience during the treatment, it might be "too burdened" and "absent-minded." For the other three customers, the sincerity of the consultants is helpful, but only as one aspect of the valuable qualities of many consultants. The authors of this study argued that consultant sincerity or consistency was not helpful to all customers and emphasized "the importance of consultants being sensitive to their customer's specific needs and moving their interactions and communication style closer to their needs".

Person-centered group therapy emphasizes that the treatment style should have certain attitudes and skills, including positive and sensitive listening, acceptance, understanding, respect, reflection, clarification, overview, expressing personal experience, reaction, understanding, following the rhythm of the dominant group, sure that the ability of self-determination. Helpers should encourage members to

explore the disharmony between thoughts and actions and preferences for internal emotions and subjective experiences. The higher the level of awareness of their discoordination, the more they become open when they look at themselves.

Rogers (1971)was skeptical about the use of techniques and practice in groups. He believed that group events would become a gathering if certain therapeutic techniques were used. Assiders should avoid providing explanatory opinions that distract group members and slow the course of overall group activities. Rogers' theoretical view is that group members should be allowed to observe group activities by themselves and let them take responsibility for leading group activities.

Rogers (2013) initially, there was put a great emphasis on the method of emotional reflection. It should always be noted that the treatment techniques should not be separated from the individual characteristics of the helpers. Every intervention of the helper must be a sincere expression.

With the development of this theoretical view, group helpers can be more freely and more actively participate in group activities. Human-centered therapies attach great importance to diversity, innovation and personalization in practice (Cain, 2002). Therapists can express their responses in a larger scale, treat customers from the perspective of care, and actively devote themselves to the treatment process (Bozarth et al., 2002; Lietaer, 1984).Contemporary human-centered theory puts more emphasis on therapists 'representation of the field experience because it can stimulate members' deeper self-exploration.

Auxiliary technology. Rogers (2013) shift in views on counseling theory facilitated the use of more treatments and the diversity of treatment styles. Reflect is just one form of this; other treatment styles are equally effective. People should not imitate Rogers' healing style completely; they should develop their own.

In sum, Person Centered Therapy (PCT) emphasized the therapist's approach to clients with empathy, authenticity, and a no direct stance, avoiding subscribed technologies. This study Group counseling program, facilitated foster an environment of acceptance and resource self-exploration among members,

encouraged therapists to adapt their approaches to individual client needs while maintaining the core principles of empathy and authenticity.

5.5.2 Rational Emotive Behavior Therapy (REBT)

Concept

Ellis (2013)developed Rational Emotive Behavior Therapy (REBT). REBT is a proactive approach designed to help individuals confront irrational beliefs and develop abilities to manage their emotions, thoughts, and behaviors in a more rational and healthier way. Issues crop up when individuals hold illogical beliefs about themselves or their surroundings. With REBT, individuals learn to acknowledge and modify these beliefs and negative thought patterns to combat psychological issues and mental distress.

As well as any small modifications to cognitive-behavioral psychotherapy. The "ABCDE" model suggests that individuals encounter negative events (A) and hold both logical and illogical beliefs (B). These beliefs lead to emotional, behavioral, and cognitive consequences (C). Positive outcomes are a result of rational beliefs, while irrational beliefs (IBs) result in negative outcomes. After being generated, these outcomes (C) can transform into the triggering event (A) itself, leading to additional (meta) outcomes (such as Meta-emotion: Depression and depression-related depression) via the secondary RB and IBs. Customers in REBT are encouraged to question their irrational beliefs (IBs) and embrace more helpful adaptive and rational beliefs (RBs) that enhance their emotional, cognitive, and behavioral responses(Ellis, 1962; Walen et al., 1992). The ABCDE model has been expanded to encompass the idea of unconscious information processing now. (David et al., 2004). Beliefs are occasionally not consciously accessible but rather are evident in an implicit memory system. Behavioral techniques can control how they impact our responses. Alter the automatic associations and focus on the initial responses from unconscious processing or the subsequent processes resulting from these initial reactions (such as conscious beliefs and outcomes).

In both REBT theory and practice, the A-B-C framework is essential. This model provides a useful tool for understanding customer emotions, thoughts,

experiences, and actions(Vernon, 2007). According to this model, our interpretation of external events is the key factor in causing psychological distress, even though we tend to blame these events for our unhappiness. REBT is rooted in the overall aspiration for success and goal attainment. Nevertheless, there are times when illogical thoughts and emotions may impede the attainment of these objectives. It is believed that these beliefs shape individuals' perceptions of the environment and events.

in short, the ABC model forms the foundation of REBT theory and practice. In this study, an (activating event) was the known fact, the happening, and the catastrophe; B (belief) represented the individual inference of the event; C (consequence) was the result of individual feelings and behavior or individual reaction. And B was the root cause of C. After A, B, C is D (disputing: intervention and resistance to irrational beliefs). The final customer was able to enter the E (effective philosophy).

Techniques

REBT is a comprehensive approach to promote transformation and generally uses a combination of cognitive behavioral and emotional methods emotions, including unconditional acceptance of reasonable emotional imagination humor, practice of humiliation, and rational emotional role-playing(Bernard, 2018). No matter how bad the behavior is outside the treatment period, the customer should be given full and unconditional acceptance and the instructor should teach the members how to achieve unconditional self-acceptance (Unconditional Self-acceptance.USA) . Members are often afraid that once their true self is "discovered," the instructor can take the lead to demonstrate the actions and feelings of the admitted members. Let the members see clearly that, even if their actions may be inappropriate or immoral, they are by no means bad people.

Cognitive methods: REBT relies heavily on techniques such as thinking, refutation, debate, challenges, interpretation, analysis and teaching. There are mainly challenges to irrational beliefs, completing cognitive homework assignments, reading therapy, and psychoeducation methods.

Emotional technology: Reasonable emotional imagination (Rational Emotive Imagery.The customer can vividly imagine the worst things that may happen to him with a reasonable emotional imagination (REI). They can imagine the situation when they encounter problems, and then teach them how to develop healthy emotional responses in the troubled situation. Transform behavior in this context by allowing the customer to positively transform their negative emotional experiences. Members may imagine that their most worrying thing becomes a reality. Within the group, people can share this fear, thus gaining an emotional insight into how this fear affects their behavior and words, and then learn different ways of responding. This imagination is the beginning of members to learn to face the reality of fear in everyday life (Ellis, 2001).

Use of humor: Humor is beneficial to promote both cognitive and emotional shifts believes that when individuals become self-obsessed, they often lose their sense of humor and look too serious(Ellis, 2001). Humor is one of the main methods of dealing with the extreme thinking that bothers people, and it is often used in REBT. REBT encourages members to abandon their stubborn ideas by showing them how contradictory and absurd their ideas are. Once trust is built within the group, members can confront the absurdity of their actions and words without hesitation, and will really feel that some of their actions are indeed humorous.

Exercise (Shame-Attacking Exercises): There are a lot of self-exposure and humiliation during REBT group therapy (Ellis, 1996). Through the practice of humiliation, in addition to let members see their humiliation affect their realistic evaluation of self, to teach members no matter how to treat yourself to learn to improve self acceptance to enhance rational sense of responsibility to hit the most important is to let customers learn to others no matter how to their reaction, oneself no longer have feeling.

Role-playing involves elements of emotion, cognition, and behavior. Role-playing: Role playing includes emotional, cognitive, and behavioral components. One of the ways to help customers experience and deal with fear is to play other roles. Role-playing can also indeed adjust the thinking, emotions, and behavior of the

members. Ellis (Ellis believes that it will be better if the experience of the concept of color performance is enough. Behavioral techniques: REBT therapists use several standardized and behavioral therapy techniques, especially operant conditioning, self-management, systematic desensitization, relaxation training, and demonstration.

REBT (Rational Emotive Behavior Therapy) is a blend of cognitive, emotional, and behavioral technologies to facilitate personal transformation. Overall, this study REBT utilized homework, debate, humor, and role-playing techniques. Aimed to promote unconditional self-acceptance and empower individuals to adapt rational responses to life challenges.

5.5.3 Cognitive Behavior Therapy (CBT)

Concept

Scholars created cognitive therapy and rational therapy (Beck, 1963; Ellis, 1962) . Bias in thinking, such as catastrophizing and following the "must" rule, had been shown to play a role in psychological distress stemming from early experiences. They introduced a collaborative method to address these issues, along opened inquiry and verification of assumptions about reality, which explained further on. In the 1980s, it was distinctive as a CBT. According to Rachman (1997), Behavioral therapists recognized the constraints of pure learning theory and the benefits of cognitive science, while cognitive therapists incorporate a focus on empirical behavior into their treatment evaluations using objective and statistical approaches. One of the most notable examples of this fusion in CBT was the behavioral encounter(Bennett-Levy et al., 2004). A method for establishing a controlled environment where customers test a new behavior and gather evidence to verify or disprove their beliefs.

One can clearly differentiate the CBT into a single entity in three distinct but overlapping ways.

(1) These principles are disseminated in different forms through the fundamental concepts of CBT, such as collaboration, focusing on the present, empirical evidence, and rational thinking.

(2) CBT is described across various dimensions, encompassing principles, theory, evidence, service delivery, therapist expertise, practice, tools, techniques, and the current context in therapy.

(3)Treatment experience by CBT clients(Dryden & Branch, 2011).

Cognitive-Behavior Therapy (CBT) is a practical, goal-focused approach that has gained popularity as a psychotherapy for various mental illnesses. The CBT approach initially designed for depression and anxiety disorders was later modified for a range of other conditions like personality disorders and eating disorders (Beck, 1964; Minkoff et al., 1973), Additionally, they are utilized as complementary treatments for schizophrenia and bipolar disorder medications (Linehan et al., 1991; Turkington et al., 2006).

Clark et al. (2000) categorized CBT practice into three cognitive levels: full awareness, automatic thinking, and schema. Rational decision-making under full consciousness defined consciousness. On the other hand, automatic thinking operates independently and was usually a private form of cognition, flowing quickly in the stream of everyday thoughts without necessarily evaluating its accuracy or relevance. Schemas, which were influenced by development and life experiences, were fundamental guidelines or models for processing information. Schema were frequently addressed in CBT interventions because they were crucial in influencing self-worth and behavioral coping strategies. Some researchers suggested that changes in schema may influence how effective CBT was in decreasing the chances of relapse(Hales & Yudofsky, 2003).

Behavioral concepts and techniques combined with cognitive theory have been crucial in developing modern CBT approaches. Essential findings indicate that developing behavioral skills can successfully change depressive behaviors like low energy, disinterest, and helplessness. Exposure therapy and related techniques have a significant impact on anxiety management. Patients can improve their coping, social, and problem-solving skills through behavioral interventions(Reynolds & Stark, 1983; Wright et al., 2017).

Techniques

The primary cognitive techniques used in CBT are Socratic questioning, guiding discovery, examining evidence, assessing pros and cons, and pinpointing cognitive distortions. and changing changes to generate reasonable alternatives, images, role-playing, and rehearsal.CBT primarily uses behavioral techniques such as planning activities, assigning tasks gradually, facing fears, learning to relax, practicing deep breathing, creating coping cards, and rehearsing skills.

To sum up, Cognitive Behavior Therapy (CBT) focused on recognizing and altering distorted thought patterns that led to mental anguish stemming from past events. This approach integrated cognitive and behavioral techniques to address issues collaboratively, emphasizing empirical evidence and rational thinking. This study mainly used Behavior techniques, including activity planning, gross exposure to features, relaxation training, and skill rehearsal, to solved the thinking difficulties of Chinese students when faced techno-stress and thus come up with good coping methods.

5.5.4 Reality Therapy (RT)

Concept

Reality therapy (RT) is a technique applicable to the fields of instruction, teaching, and treatment, and its origins go back to the sixties when W. Glasser Started with or developed the technology. If it is necessary to set its goals or such treatment processes in the field of psychology, then its preferred location would be counseling psychology. The aim is to help clients better control their behavior, teaching them to make different choices more responsibly and adaptively to meet their basic psychological needs. This technology is mainly developed by the Reality Therapy Institute founder W. Glasser was developed in the United States and Canada in 1967 (Miranda Páez, 1993)

(1) Human nature: choice theory hypothesis: born is not a piece of paper, do not need to rely on the power around from my drive. The theory states that people cannot meet their needs, and we store information in our hearts and build expectation folders. This is the core of life, called the ideal world (quality world). In an

ideal world picture book, there are specific needs and needs for precise ways; some are fuzzy; the therapist lets the client see, and some can not distinguish the priority, To help the client see, the therapist must be willing to put the client put it into his world.

(2) Interpretation of behavior by choice theory

The theory is that people, from birth to death, are a process of spontaneous selection. The overall behavior theory points out that all behaviors comprise four parts: behavior, thinking, feeling, and physiology. The choice theory highlights the importance of thinking and behavior.

(3)Reality therapy is characterized by thinking about its effectiveness and exploring the parts that customers can control; emphasizing selection and responsibility; rejecting empathy: empathy is the refusal of therapists and customers to be true to themselves; making treatment focus on the present; avoiding treatment focus on symptoms; challenging the traditional perception of mental illness (against physical and mental symptoms)(Corey, 2012).

Techniques

Utilize the WDEP model to outline the fundamental stages of practical therapy(Wubbolding, 2013). Customers can utilize the WDEP system to delve into their desires (will), what they can do (do), self-assessment (self-evaluation) opportunities, and design improvement plans (Wubbolding, 2011). Selection theory suggested that the WDEP system assisted individuals in fulfilling their fundamental needs. A variety of strategies is symbolized by each letter in WDEP. W= desire, need, and perception; D= direction and behavior; E= self-assessment, and P= plan. These tactics aimed to foster change.

ABCDE, which is always polite, firm, and enthusiastic (Always Be Courteous, Determined, and Enthusiastic), represents advice to therapists who work with clients and is a good idea for church customers to replace harmful behavior. The code of politeness requires little training for therapists. However, to absorb some self-evident polite behavior, customers often need encouragement, practice, and a lot of discussions and sometimes feel like the purpose and possible results of new and

creative choices. An effective reality therapist is able to demonstrate and convey a firm confidence that customers can improve their lives. For example, the therapist's attempt to reflect the customers' powerlessness and pain to achieve empathy always creates a desperate victim atmosphere. However, using the WDEP system takes the customers out of this depression. They can see hope and the willingness of the therapist to help them and also begin to believe that they can climb out of the barren inner abyss or at least become less painful.

The practice of reality therapy mainly consists of two parts: counseling and guiding the specific process of behavior change. The art of counseling repeatedly interweaves these two parts, guiding members to evaluate their lives and pushing them in a more effective direction(Christensen & Gray, 2002). these two parts are "the counseling loop " (Cycle of Counseling)". This cycle generalizes the application of real-world therapy into practice. The counseling setting includes specific guidelines for the intervention and is the basis of the change process afterward.

Reality therapy is a process; if applying these methods is very rigid, following the steps and copying the "textbook" is quite wrong. According to(William, 2000), there is no uniform pattern of "new reality therapy", problem techniques , and counseling time for therapists to foll

In summary, Reality Therapy (RT) emphasized personal responsibility and choice in behavior. It aimed to help clients manage their behavior effectively by teaching them to make responsible choices that meet their psychological needs. RT challenged traditional views of mental Illness by focusing on the presentation and rejecting symptom-based treatment. Therefore, this study adopted the WDEP model (Want, Do, Evaluate, Plan) to guide clients in exploring their desires, actions, self-evaluation, and planning for change. the therapist's role was to maintain courtesy. Allowing students to fantasize no longer and avoid and allowing them to be determined and enthusiastic engagement to empower clients toward constructive life changes.

5.6 Definition of Integrative Group Counseling

Integrative group counseling is a treatment approach combining elements of different counseling theories or models into a cohesive group therapy framework. It involves integrating technology, principles, and intervention measures from different psychological perspectives to effectively meet the diverse needs of team members(Trotzer, 2013). Corey (2018) defined the integrative counseling approach as rooted in theory, systematically borrowing from other methods and customizing them according to the client's needs. He developed his own comprehensive style based on the personality and expected types of clients consulted by the consultant.

Theoretical conflicts with application characterized the early history of counseling. Experts discussed the most effective methods for bringing about personality change. Most therapists have seriously thought about combining the best therapists from different schools since the 1980s. Therapists recognized certain theories' inherent constraints and the possible benefits of alternative theoretical frameworks. Most practitioners nowadays utilize integration in some form to examine the efficacy of integration support methods(Norcross et al., 2016). Group counseling integration offers a broad structure for counselors to comprehend various aspects of the screening process and offer direction through their words and actions.

5.7 Method of Integrative Group Counseling

The characteristic of the integration method is to integrate different theories and technologies in different ways with an open attitude, and it is believed that using integration is more suitable than compromise (Norcross et al., 2005). Integration aims to enhance the efficiency and relevance of psychotherapy. Norcross and Beutler (2014) discussed four key aspects of the psychotherapy integration movement: technical integration, theoretical integration methods, and assimilation integration. While all of these integrated approaches aim to transcend a single therapeutic theory, they transcend in different ways. Integrative psychotherapy (psychotherapy integration) tries to cross the boundaries of a single genre to find the ground in other theoretical therapies, and customers can benefit from a range of constructive approaches. The monotherapy theory does not limit most psychotherapists but rather adopts an

integrated perspective (Norcross et al., 2006). Psychotherapeutic experts predict that integrated therapies will become more popular over the next decade, particularly for mindfulness, cognitive behavior, multiculturalism, and integration theory (Norcross et al., 2013).

Integrated group counseling often combines elements of cognitive-behavioral therapy (CBT), psychodynamic therapy, humanistic-existential approaches, and other therapeutic modalities to address diverse client needs within a group context(Norcross & Goldfried, 2005). Research demonstrates that integrating multiple therapeutic techniques in group counseling can improve outcomes compared to single-modality approaches. For example, combining CBT with interpersonal therapy (IPT) in groups has shown efficacy in treating depression and anxiety disorders (Cuijpers et al., 2008). Integrated approaches capitalize on group dynamics to facilitate interpersonal learning, social support, and collective problem-solving among group members. Group cohesion and therapeutic alliance play crucial roles in the effectiveness of integrated group interventions. Effective implementation of integrated group counseling requires specialized training and ongoing supervision from therapists. Research emphasized the importance of therapist competence in integrating diverse techniques while maintaining therapeutic integrity (Binder et al., 2010). Future research aims to refine integrated group counseling models further, explore innovative combinations of therapeutic techniques, and evaluate the long-term effectiveness of integrative approaches in promoting sustained psychological well-being and personal growth(Lambert, 2013).

As seen from the above integration, integrated group counseling was a customized integration theory based on user needs and group counseling methods. Therefore, in my counseling program, content was developed according to the characteristics of Chinese students and the actual strength of their impact on resilience and coping strategies.

CHAPTER 3
METHODOLOGY

Research Design

The study had two phases, both employing a mixed method and a cross-sectional interpretation sequence design, starting from the quantitative stage and providing background and participants for the subsequent qualitative stage. Quantitative research using Computer Software, significance level $\alpha = 0.05$ for analysis: First, independent sample t-tests and descriptive statistics were used to determine whether each variable of Chinese students was of different significance; Secondly, conducted variance analysis on resilience, coping strategies, and techno-stress to determine the impact of independent variables on dependent variables; Afterwards, In a quantitative research sample, a group of Chinese private students who engaged in a group counseling project were chosen as the experimental group, while a group of Chinese private students who did not participate in the project were chosen as the control group. 10 people in each group, comparing differences in techno-stress; Finally, while participating in a group counseling project, each variable was included in the regression equation, and the data was compared to explore preventive factors. Qualitative research used computer software, referencing quantitative research content and used different backgrounds from family, society, and school to divide each variable into different themes. After conducting semi-structured interviews with students, empirical methods compares data. Different themes were selected and compared with different themes and then conceptualized and coded. Qualitative research aimed to discover the unfinished content of quantitative research, delve deeper into the specific situations of different individual students, and compared and supplement quantitative research results.

Phase 1, a study of the impact of resilience and coping strategies on techno-stress, is as follows:

(1) It was an online survey (quantitative), in which the researcher first collected and analyzed quantitative (i.e. digital) data to evaluate the impact of resilience and coping strategies on techno-stress and the study also examined mental health status and psychological reactions of higher education students due to techno-stress The research question was generally understood through the use of quantitative data and analysis. (Ivankova et al., 2006).

(2) The study involved collecting and analyzing qualitative (i.e., textual) data through personal, in-depth interviews (qualitative)(Creswell & Clark, 2017) that delved into the coping students use to deal with techno-stress. It aimed to elucidate or elaborate on the quantitative results acquired in the initial phase. Refining and explaining statistical results was achieved through the analysis of qualitative data, which explored the perspectives of participants in greater depth(Creswell & Clark, 2017; Ivankova et al., 2006). In addition, the tools related to group interview answers have high adaptability, while the results of in-depth interviews are efficient (Cataldi, 2018).

(3) Combined the quantitative and qualitative information of the research phase.

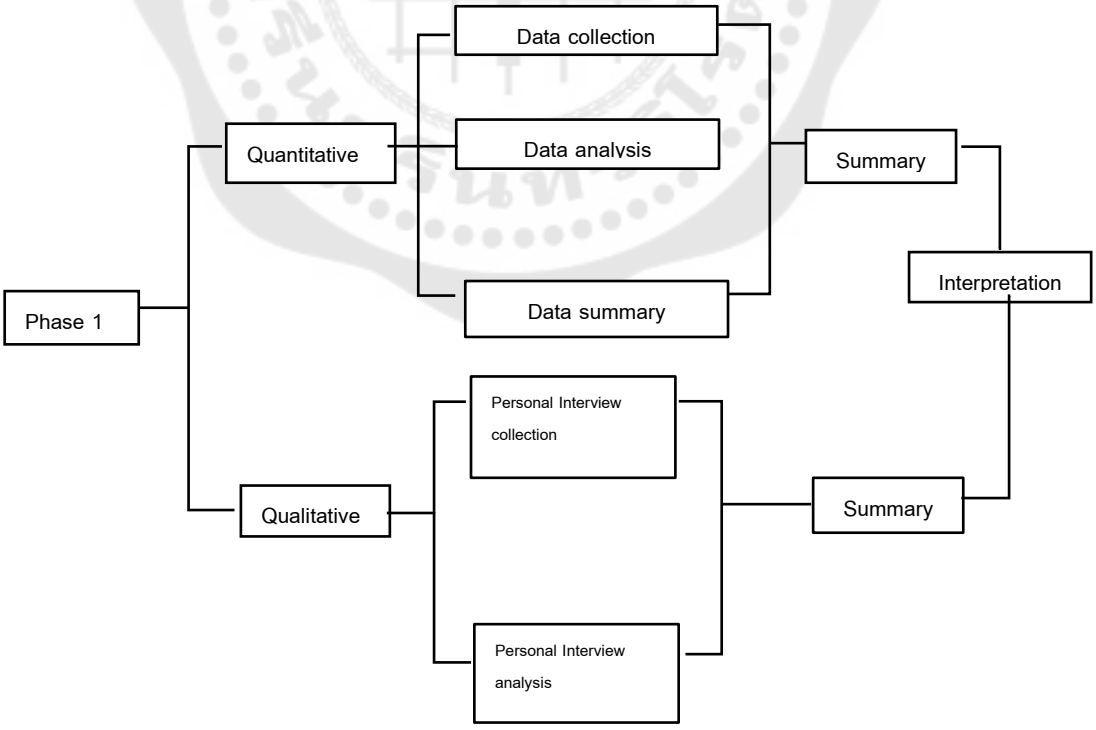


Figure 2 Research Design (Phase 1)

Phase 2 Reduce techno-stress through "integrative group counseling" using an explanatory order design(Ivankova et al., 2006):

(1) Qualitative research following quasi-experimental research. Two groups were formed in the study: the experimental group and the control group. An integrative group counseling was used to intervene with the experimental group after the pre-test. After the integrative group counseling, a techno-stress post-test was conducted, and a follow-up test was conducted three to four weeks after the counseling ended. The control group used traditional teaching methods and compared the follow-up test results. Discuss the effectiveness of the training group program in improving students' techno-stress.

(2) Select phase 2 experimental group student sample for focus group interviews, focusing on studying the occurrence and changes of psychological counseling intervention, resilience and coping strategies, and techno-stress. According to Liamputtong (2011), the method was applied to sensitive topics and vulnerable populations. Focus group interviews helped explore differences in opinions. They provided an opportunity for in-depth research through interactive discussions on the phenomena in the study and the experiences and attitudes of participants in a group context.

(3) Combine the quantitative and qualitative

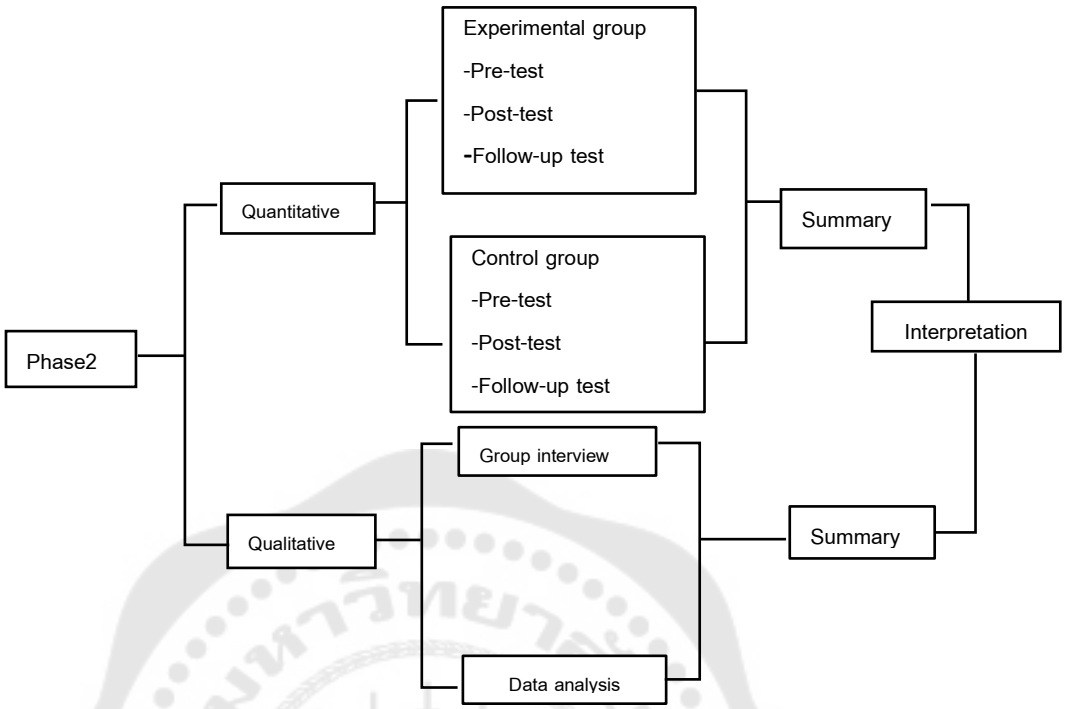


Figure 3 Research Design (Phase 2)

Phase 1 The impact of resilience and coping strategies on techno-stress

1.1 Population and Sample

1.1.1 Sampling method

Random sampling and an online survey were used to obtain the study sample. Divide the majors of private and public universities into three categories: humanities, social sciences, and science and engineering, and conducted stratified sampling with equal numbers of people.

1.1.2 Establishment

The scale was presented in bilingual format, with the English version converted into Chinese using conventional translation and reverse translation strategies. In international research, reverse translation is a widely used verification tool. Researchers used reverse translation as a rule to verify the quality of translation research tools, which includes three steps: 1) The research tool was applied to translate the source text into another language, 2) The text was retranslated the text back into the source language, 3) The reverse translation was compared with the original document,

and if not found, the translation was considered equivalent(Tyupa, 2011) Reverse translation was a well-known method of maintaining equivalence between the original text and the translated version (Behling & Law, 2000).

Two writing teachers at my school, who had over a decade of experience in the Chinese language major, translated the original English version into Chinese, and then another public health doctor translated it back. Later, this study compared the translated version with the original version and made minor adjustments, ultimately confirming that the Chinese version accurately conveyed the intended meaning of the items in the original English version. A pilot test with 10 eligible participants was then carried out on the scale to assess the logic, length, wording, and encountered issues during the survey process and gather recommendations. Following that, the wording of several questions was refined and simplified, with additional paragraph explanations provided prior to testing each scale in order to improve participants' understanding.

1.1.3 Sample size planning

The research object of this article was Chinese private and public university students. Students adopted a random sampling method, with stratified sampling among students majoring in humanities, science, and art. The Chinese students participating in this experiment were from both public and private universities in mainland China, and the sample does not include specialty students.

Quantitative research employed the sample size method of multiple linear regression analysis to calculate the sample size with $\alpha = 0.05$, power = 0.95, and effect size $f^2 = 0.15$. The computer software determined a sample size of 107 students for each category of school, totaling 214 students. It is generally recommended to include a minimum of 300 research subjects when calculating sample size according to the rule of thumb. Considering both the rule of thumb and the computer software calculation results, this study decided to include at least 300 research subjects, comprising 150 public and 150 private students. 305 samples were actually collected, The scale with a passing time or obvious regularity was removed, and the final sample number was 280.

Qualitative research involved 5 students (personal interviews): Some studies suggested that 5 to 50 participants are sufficient(Morse, 2000), which meant that capturing the possible range of opinions is ideal for this study. Among the 5 students, 2 were from public university students, and 3 are from private universities, which can cover the target population of this study (Seidman, 2006).

1.1.4 Data quality management

The researcher exceeded the initial study's estimated sample size by 10% when recruiting participants to secure enough valid scales. Only survey scales that have been completed can be submitted as well. Another way to identify invalid scales was by looking at the time it takes to complete the survey. To prevent duplication, participants were restricted from completing the scale multiple times by linking it to Mobile software account.

1.2 Research Instruments

1.2.1 Development of quantitative research instrument

Instrument development

1) Resilience Scale

Analysis of the Connor Davidson Resilience Scale (CD-RISC) by Yu Xiaonan (Yu & Zhang, 2007). Revised based on the opinions of IOC experts and previous student try-out testing opinions, Klenbach α The coefficient is 0.895, including 3 dimensions: Tenacity, Strength, and Optimism. The partial reliability was 0.889, 0.888, and 0.899. 25 items to be rated based on own experience using a 5-point Likert scale where 1 point indicates 'Never' with the item and 5 points indicated "Always be" with the item. High scores represent high levels of perfectionism.

Some of the items are as follows:

Questions	1	2	3	4	5
1.I can adapt to change in my life.					
2.I have an intimate and safe relationship.					

Coping strategies Scale

Revised Simplified Coping Style scale (SCSQ) (Xie, 1998) based on the opinions of IOC experts and previous students try out testing opinions. This scale is revised on the coping style (Cronbach α= 0.789). The 4-point scale is used to score 20 items (1 points not take; 4 points Frequently take), which consists of 20 items. The study has proposed a three-factor structural model, with factor 1 consisting of 8 items, including items 1, 3, 4, 5, 6, 11, 12, and 13. could be summarized as "self-regulation" with a reliability coefficient of 0.774; Factor 2 includes 7 items, including items 14, 15, 16, 17, 18, 19, and 20. can be summarized as "fantasy and evasion ". The reliability coefficient was 0.834; Factor 3 consists of 5 items, including 2, 7, 8, 9, and 10. could be summarized as "seeking help and problem-solving." The reliability coefficient is 0.782.

Some of items are as follows:

Questions	1	2	3	4
1.I relieve yourself through work, learning, or some other activities.				
2.I can talk to people and tell your troubles in your inner heart.				

Techno-stress scale

Revised Techno-stress scale based on the opinions of IOC experts and previous student try-out testing opinions. Questions about educational technology pressure factors were added based on university students' techno-stress characteristics. The project adapted for end-user satisfaction is based on Doll and Torkzadeh (Doll & Torkzadeh, 1989). The Likert 5-point scale was used to measure all items, with 0 points=" Never" and 4 points =" Always be". The total scale had a coefficient alpha from validity testing of 0.927. The reliability of each factor is Techno-

overload (OV)=0.924, Techno-invasion (IN)=0.923, Techno-complexity(CO)=0.923, Techno-insecurity(INS)=0.923, Techno-uncertainty (UN)=0.926, Techno- learning pressure(TLP)=0.923

Questions	1	2	3	4	5
1. When there are test and homework reminders on the learning platform, I may panic.					
2. I find it difficult to switch between learning states on different technology platforms.					

Quality examination

In this study, research instruments were developed, and their quality as follows steps:

1. The literature related to measuring the variables of techno-stress and Factors Influencing Techno-stress Resilience and Coping Strategies were studied.

2. The instruments were developed based on scales used in previous studies.

3. All drafted instruments were submitted to the advisor and co-advisor for counseling.

4. The instruments were revised based on their counseling before being sent to five (Three Thai and two Chinese) experts in behavioral science or psychology fields to examine for content validity. The Item-Objective Congruence (IOC) was employed to examine the consistency between the items of the instrument and the operational definition. The experts' opinion was assessed according to the following criteria:

A Score of +1 indicates that the sentence/phrase/question accurately reflects what the instrument is measuring.

A score of 0 indicates uncertainty as to whether the sentence/phrase/question is indicative of what the instrument is measuring.

A Score of -1 indicates that the sentence/phrase/question is not in alignment with the instrument's measurement.

5. After experts returned the IOC forms, this study calculated the scores for Item-Objective Congruence (IOC) to determine the alignment between the item and its operational definition. All sentences/phases/questions in each instrument must achieve an IOC score of at least .5 or equal to .5 in comparison (Mohan, 2015). The instruments were modified by selecting a sentence/phrase/question that achieved IOC scores of .5 or higher to create the finalized instruments. The outcomes were as follows:

According to the experts' feedback, the instruments were revised from 0.65 to 1 on the IOC.

6. After the instruments had been finalized, they were utilized in a pilot study with a sample of 280 university students to evaluate the quality of the instrument through reliability testing, including the calculation of Cronbach's alpha coefficient. (Cronbach; as cited in Aiken, 2002). Applying the reliability coefficient rule of thumb was done in the following manner (George & Mallery, 2003):

Nunnally and Bernstein (Nunnally & Bernstein, 1994) also mentioned that alpha values 0.70 and 0.95 are considered to be adequate. The findings indicated that sections of the scale had Cronbach's alpha coefficient within the range of 0.772 to 0.928, with no excluded items.

7. The last revised instruments were used to collect data.

The revised data, based on the evaluation results of IOC experts and Cronbach's alpha coefficient analysis, shows that the Resilience Scale, Coping Strategies Scale, and Techno-stress Scale possess strong reliability and validity and are accessible.

1.2.2 Qualitative Research Instrument Development

Personal interviews question the impact of resilience and coping strategies on techno-stress.

Quantitative data collection assumes that each email or Mobile software account limited to one response, and for China, one sample conducted in higher education institutions.

Qualitative data collection: This study also used an in-depth personal interview method for qualitative investigation. Chinese students were invited to share their life experiences. The advantage of in-depth qualitative interviews was that they provide a more comprehensive understanding of human behavior and social phenomena. Although the results of qualitative research could not generalized, they reveal the subjective views of individuals and the background of participants, which was often overlooked in quantitative research. After referring to relevant literature, the depth interview section determines the theme under the guidance of the Education and Life Transformation (ELT) model (Jindal-Snape & Ingram, 2013), the Stress and Coping Model (R. S. Lazarus & S. Folkman, 1984), and Berry's Cultural Adaptation model (Ward & Kennedy, 1994), and opinions from supervisor and experts, modifications were made. Individual interviews, and descriptive coding used to conduct semi-structured interviews from three aspects: Theme 1: Techno-stress performance and source, Theme 2: Resilience, Theme 3: Coping strategies

The specific interview content was as follows:

Theme 1: Techno-stress performance and source

-What changes have occurred in the classroom format for technical students during the post-pandemic period?

-Do you think Techno stress is a problem for you? What are the main issues?

-"What changes have the pandemic brought to you in terms of changing your mindset towards learning technology?"

-"How do you think your cultural and social adaptation experiences will affect your mental health and lead to techno-stress?"

-Will family growth bring you less or more Techno stress? How did you handle its social environment

Theme 2: Resilience

-Have you shown a good state and adaptability in the face of difficulties? (For example, what methods successfully solved the techno-stress problem? What Resilience methods were used (resilience, strength, or optimism)?

Theme 3: Coping strategies

-Are you afraid of Techno-stress in society when facing the post-pandemic environment? How do you plan to respond

-How do you achieve with or without Techno-stress? What Coping strategies are used?

1.3 Data Collection

1.3.1 Collection steps

(1) After obtained ethical considerations from human subjects approved by the Ethics and Research Standardization Department of Xi'an Eurasian University in China.

(2) The researchers brought proof of permission and contacted the Random University Academy to obtained permission to collected data.

(3) After obtained permission to collect data, the researcher collected. The multi-stage sampling technology was adopted as follows:

The first stage of stratified sampling: stratified by the research field, divided into three research fields according to the school's 9 branches; Humanities (science, engineering, agriculture), science and engineering (management, law, and education), and social sciences (literature, history, philosophy).

Second stage random sampling: Randomize students from all levels. One-third of the samples were from the humanities field, one-third from the science and engineering field, and one-third from the social sciences field. The details are as follows:

Table 1 Random Sampling Chart of College Student Divisions

Research Interests:	Sampling Academy
Department of Humanities	College of Humanities and Education, School of Culture and Media, College of Art and Design, School of Leisure Management, School of Logistics and Trade
Department of Science and Engineering	School of Information Engineering, College of Human Settlements and Environment
Department of Social Science	Faculty of Finance, Faculty of Accounting, Faculty of Business Administration

Third stage random sampling: 50 people were selected from each of the three classification directions of a public university, with 150 people from the public. 50 people were selected from each of the three classification directions of a private university, with a total of 150 people, totaling 300 people.

By inviting information and participant information, they were required to voluntarily complete the online Scale by scanning the QR code.

1.3.2 Data Integrity

(1) All scales were checked for completeness.

(2) Data codes were assigned as standards and the scale scores were checked.

(3) Statistical analysis was conducted on the data.

1.3.3 Quantitative data collection

The researcher contacted the deans of various institutions to showcase research and obtain authorization to disseminate our online survey to

students. The researcher used a convenient sampling method to collect information from potential participants. Table 2 presented the relationships between scales, subscales, and variables, lists the scale entries used to measure each variable, and the reliability index of each subscale. Before the scale started, the author conducted a small-scale experiment on the scale. The experimental students provided their opinions on the length and understanding of the items in the scale and experienced English background teachers checked the English version of the scale and proposed revisions. I and another experienced Chinese writing teacher made revisions to the Chinese version. Afterward, we made minor adjustments to some scale entries. The scale survey was completed through scales Star and sent to the respondents through WeChat. One week before the start of the study, the researcher recruited respondents through both student and teacher forms. The data collection period is from March 1, 2024, to April 1, 2024. It is expected to collect 150 scales from private and public institutions, totaling 300. Assuming that each WeChat account will limit one reply, sampling conducted in two types of universities: private and public. The online scale was anonymous and requires around 15 minutes to finish. Every finished scale produced a reference number, with no specific identification being documented. At the end of the survey, participants saw a page thanking them for their participation and encouraging them to share the research announcement with their peers or friends on social media. This study assessed the scale's reliability and validity by using descriptive statistics, frequency distribution, and internal consistency reliability index (which includes various coefficients such as the overall project correlation coefficient and adjusted coefficient).

1.3.4 Qualitative data collection

Qualitative data collection on the impact of resilience and coping strategies on techno-stress

Preparation of interview outline

The outline was developed using the quantitative research findings from the initial phase. Qualitative research seeks to offer a more in-depth understanding of the outcomes generated by statistical tests (Creswell & Clark, 2017).

The researcher hoped to explain why certain predictions had varying degrees of 'contribution' to each group. In the interview outline, the three themes of variables (Techno-stress performance and source, resilience, and coping strategies) were unfolded in the three major environments of school, society, and family, and the statistical results also showed significant explanatory power for the sample. Based on the results, the research fine-tuned the order of questions in the interview outline and added additional exploratory questions to the in-depth testing interviews after the focus interviews.

The online survey results served as the basis for raising questions to facilitate key individual discussions. The qualitative description provided a direct and rich experiential description to understand the basic principles of an individual's viewpoint and behavior (Creswell & Clark, 2017). This study defined a fixed number of semi-structured topics, each requiring approximately 10 minutes of discussion time. The initial 5-minute ice-breaking introduction forced each participant to speak early and prevented silence throughout the discussion process. In addition, the host was asked to simply ask participants to return to their questions and limited subsequent questions to clarify their opinions.

This study gathered student data by seeking input from university teachers and students. The researchers got permission from the participants and verified their credentials before sending Mobile software reminder message to 5 participants an hour before the interview. Additionally, they had to work in a calm and well-lit space, assessed the network's reliability, and selected aliases beforehand for the interview. Several rounds were repeated until information saturation was achieved. Tencent Meeting will be used to conduct and record focus group interviews. Researchers bear the responsibility of arranging, executing, and overseeing the focus group process. The focus group was conducted in the target audience's native Mandarin. The interview took approximately 60 minutes. Participants utilized nicknames for identification to maintain anonymity throughout the study. Once data collection was finished, computer software was used to transfer the records.

1.4 Data Analysis

1.4.1Quantitative Data Analysis

Quantitative Data Analysis on the Impact of Resilience and Resilience on Techno-stress

Export the data collected on the online scale platform to Computer Software. Invalid scales that use less than 480 seconds (according to our pilot test, the minimum time for carefully reading and fully completing the survey) or incorrect answers to fill-in questions are excluded from the analysis. All analyses' statistical significance level was $p<0.05$ (Kim, 2013). Descriptive, correlation, and regression analyses were conducted.

1. Analyze sample demographic data (n,%).

Identify the demographic variables included in your dataset (e.g., age, gender, major).

2. Descriptive analysis of variables (M, S.D.)

Quantitative data from standardized measurements were input Computer Software for analysis. Descriptive data analysis involved calculating absolute and relative mean and standard deviation.

3. Pearson-Correlation analysis of variables to test the initial relationship between independent variables (resilience, coping strategies) and dependent variables (techno-stress).

The connection between variables was established by conducting univariate and multivariate analyses involving simple linear and general linear regression analyses. The significance level was established at $\alpha=0.05$ (Dilshad & Latif, 2013).

4. Multiple Regression equation for variables. The method of hierarchical regression analysis was employed to examine how each variable predicts the dependent variable.

Analyze coefficients (β) were analyzed to grasp the magnitude and direction of connections between individual and dependent variables. Examine the significance levels (p-values) were examined to ascertain the statistical significance of the relationships. The model fit was evaluated using metrics such as R-squared (for linear regression). Check Assumptions: Validate assumptions of regression analysis, such as normality of residuals and linearity. were validated. Findings were reported results in tables or figures, including coefficients, standard errors, confidence intervals, and p-values(Dodhia, 2005).

1.4.2 Qualitative Data Analysis

Qualitative Data Analysis of the Impact of Resilience and Resilience on Techno-stress

Qualitative analysis chose experience collection and analysis code, put codes into a hierarchical structure. These analyses mainly used computer software for recording and importing text, software for encoding analysis, and theme extraction. The operational steps of qualitative analysis included the following:

(1) Data immersion: Before classification, it was necessary to be familiar with the data. The study thoroughly read and reread the material. Preliminary exploration of data through review of interview records and memos: repeated listening to recordings, refer to notes taken during the interview process, review recordings, number, mark each speaker's nickname, distinguish different speaker's content, and complete the content cited by the interviewee in the speech. The researcher read the transcripts multiple times until the researchers were very familiar with them.

(2) Open coding: The researcher identified and label concepts that appear from data. Researchers do not attempt to transfer data to pre-existing categories but rather allow categories to appear naturally.

(3) Axial coding: Researchers began to establish connections between categories identified during open coding in order to understand how different categories are interrelated and treat data as a whole.

(4) Selective encoding: Researchers redefined categories and determine the core categories related to all other categories. In order to form the central narrative or theory of your research.

1.4.3 Qualitative Data Quality Management

(1) Simulation Interview

Before the official interview, a set of necessary samples was chosen to conduct a mock interview to practice organizing and managing the interview process.

The feasibility of Tencent Meeting (an online conference software widely used in and was also examined during this process.

(2) Data Credibility

The most widely used criteria for evaluating trustworthiness were developed by Guba and Lincoln (1994), including credibility, reliability, confirmability, and transferability.

1) Credibility

During the interview process, researchers repeatedly asked questions when participants provide vague answers, the survey led to detailed data.

2) Reliability

This study ensured its reliability by utilizing the overlapping method. (e.g. conducting Phase 2 focus group interviews to verify the findings of individual interviews) to demonstrate its reliability.

3)Confirmability

Two additional coders participated in the coding process post-interview to minimize subjectivity and bias, thereby enhancing the coding's reliability (Church et al., 2019; Kurasaki, 2000). In this research, along with the author, a linguistics degree holder teacher was involved in encoding qualitative data. The student assistant ensured data security and grasped the research purpose, procedures, and interview outline. Researchers trained the assistant, who became knowledgeable about software functions, and they encoded qualitative data before formal analysis. Researchers used interrater reliability (IRR) to assess how consistently different raters encoded the same

content (McAlister et al., 2017). In this study, the same code or similar meanings of code under a subtopic or theme were considered as protocols; Different codes or meanings or subthemes or categories of themes were considered divergent; New code or strong disagreements were discussed for reconciliation.

4)Transferability (parallel to external effectiveness/universality)

A brief self-introduction was conducted at the start of the interview to enhance the respondents' background information. Information regarding research focus and experience in adapting to different cultures was provided. Following the interview, the researchers documented thorough information from each focus group session. (e.g. Interview period, number of participants)(Shenton, 2004), To determine the universality of the results.

Phase 2 Develop an integrative group counseling program to reduce the techno-stress of Chinese students

2.1 Population and Sample

In group counseling quasi-experiments, some studies have pointed out that the number of group counseling should be no less than 3 people (Meyer, 1952). The general rule is that the effective small-scale group size is 5-12 people (Trotzer et al., 1979), and 8-10 people in the age range from young to adults are more suitable (Corey et al., 2018). Considering that some students withdrew midway or the collected experimental data had low validity and needed to be sorted and deleted during the experiment, a total of 22 people were collected from the control group of 11 people and the experimental group of 11 people.

In the first stage of the study, the researchers randomly split the private students (around 150 participants) into two groups out of the total 300 samples. This study randomly chose 11 participants for the experimental group and 11 participants for the control group from two distinct groups. Suppose a student decides to refuse the corresponding group and chooses to respect their wishes. In that case, The researcher excluded student for the experiment and randomly selected the final number of participants from the sample range. It is not ruled out that students gave up midway

through the experiment, Therefore, the control group consists of 10 students, while the experimental group also comprises 10 students.. There are a total of 20 people.

Focus group interviews are a qualitative data collection technique(Dilshad & Latif, 2013). The strength of a focus group is its capacity to offer a variety of ideas and emotions, unique viewpoints on specific topics, and highlight disparities in perspectives among groups. It can generate a large amount of data rapidly(Rabiee, 2004). Focus group interviews are common in multi-method research (McGarvey et al., 2015) and widely used in educational research (Huhn et al., 2016; Mazzarol & Soutar, 2002). Although there is no participant standard for qualitative interviews in the study sample size, information saturation is the goal of recruitment (Malterud et al., 2016), the data collected or analyzed up to now is sufficient and does not require any further data collection or analysis (Saunders et al., 2018).

Students from the experimental group in phase 2, and the data was comprehensive and comparable. Qualitative 10-person (group interview) (Guest et al., 2017), Among the participants in the group interview, 10 students were part of the quasi-experimental group and could provide reliable data to support their knowledge of the research. Students who either left during the interview or had insufficient data collection were not excluded.

Compliance management was an important aspect of ensuring the accuracy and reliability of test results. The following were some methods and strategies to ensure and manage compliance during the experiment: clear communication and education, establishing effective communication with trial participants, and providing clear education to ensure they fully understand the requirements and procedures of the experiment. This included clearly explaining the treatment plan, follow-up plan, data collection, etc.

The qualitative researcher emailed eligible students and provide them with documents on informed consent and interview guidelines. Meetings were scheduled with the student group if they want to join the group interview. The interview employed the Tencent conference video conferencing platform. The sample size was chosen to be

adequate to achieve our objectives and encompass various perspectives. The inductive analysis of qualitative interviews continued until thematic saturation was reached through data collection and analysis.

2.2 Integrative Group Counseling Program

The group counseling program was developed based on the results of the first phase of the "impact of resilience and coping strategies on techno-stress" factor. This project also used integrated therapy as a framework.

There were three steps in this stage:

(1) According to relevant literature, integrated system therapy methods included human-centered therapy, cognitive behavioral therapy, rational emotional therapy, and realism therapy.

(2)An integrative group counseling intervention program was developed. counseling program, including 8 150-minute counseling sessions focusing on reducing techno-stress.

(3) The quality of the developed program was evaluated by psychological experts, and researchers made improvements based on recommendations from five psychology experts (two from China and three from Thailand).

The revised counseling program consists of 8 sessions, each lasting 90 minutes. The experimental group will undergo a program from March 2024 to April 2023, twice a week, for a total of 4 weeks. Sessions were scheduled from 14:00 to 16:30 (150 minutes) every Wednesday and Friday. The program was conducted offline, allowing for simultaneous access to all participants in the experimental group. Before each meeting, the schedule was sent to the participants via email.

Step 1: Pre-test Before the experiment began, a pre-test was conducted on all students to understand their level of techno-stress.

In this study used a techno-stress scale for measurement. The design of the scale was inspired by the Likert scale developed by Likert et al. (Allen & Seaman, 2007). Additional content was included to capture students' specific

characteristics related to their academic, social, and family backgrounds. Students rated questions based on their actual situation, scoring 1-5 points, with higher scores indicating higher techno-stress levels.

Step 2: Group counseling intervention based on reducing techno-stress

1) Start the interview

Researcher's self-introduction

The researcher clarified the purpose of the interview.

2) Interview stage:

Inquired about the techno-stress of students

3) Interview Summary

The researcher summarized the interview results and provided them to insiders.The researchers thank the provider.

In the first stage, explord its impact on private universities and freshmen. This study was hybrid group counseling intervention tools, including "Person-centered therapy," "Cognitive behavioral therapy," "Rational emotional behavioral therapy," "Reality therapy," and other psychological counseling therapies for group counseling. Game tasks and reward mechanisms were designed to engage participants in learning and enhance motivation. The intervention lasted 4 weeks with participants attending counseling twice a week for 8 sessions, each lasting 150 minutes.

Step 3: Post-test: After group counseling intervention based on less techno-stress, the post-test was measured using the same techno-stress scale as the pre-test.

The subjects were asked to rate each question based on their actual situation, scoring 1-5 points. A higher score indicated a higher level of techno-stress within that dimension.

Step 4: Follow-up: Three weeks after the intervention, follow-up assessments were conducted. Participants from the sample group participated again and completed the techno-stress scale to measure the effectiveness of the program through repeated measurements.

2.3 Implementation of integrative group counseling program

The program adopts Corey (Corey, 2015) six-stage model: formation, orientation, exploration, coping with resistance, working through, consolidation, and termination and evaluation. The first three stages represented the initial phases of group development, while the last three stages indicated the subsequent phases. while the last three stages indicated the subsequent phases.

The researcher chose a single-group study with two measurements as the experimental mode in this study. Before and after a single group of tests, the researchers randomly sampled freshmen from private universities in the first mixed study, following these steps:

Table 2 Quasi-experimental research design (Phase 2)

	Pre-test	Intervention	Post-test	Follo w-up test
Experimental Group	O_1	X	O_2	O_3
Control Group	O_4	-	O_5	O_6

(*Symbol meaning

X_1 refers to the integrative group counseling.

O_1 refers to the techno-stress level of participants in the experimental group before receiving the integrative group counseling.

O_2 refers to the techno-stress level of participants in the experimental group after receiving the integrative group.

O_3 refers to the techno-stress level of participants in the experimental group follow up receiving the integrative group.

O_4 refers to the techno-stress level of participants in the control group at beginning of the study.

O_5 refers to the techno-stress level of participants in the control group after the 4 weeks interval without the integrative group counseling.

O_6 refers to the techno-stress level of participants in the control group after the 7 weeks interval without the integrative group counseling.)

(1) Trial phase: The researchers trained samples of 10 participating groups in a program to reduce techno-stress. From 1 March 2023 to 1 April 2023, each lasted for two and a half hours, or 150 minutes.

(2) The information was collected by an investigator on the training team. Pay attention to others 'opinions, answer questions, and accept others' opinions, including participating in the activities assigned by others in a counseling way.

(3) After 8 experiments, the students participating in the training program should again fill in the techno-stress scale for the researcher.

(4) In the follow-up test phase, the researcher participated in a three-week follow-up testing phase, with one day allocated for them to undergo training again. This served as a reference for the subsequent data collection phase. This study conducted experiments by implementing a training group program applicable to the sample group participating in the training group and observing records of participation behavior after terminating the training group. The study asked the sample group participating in the training to conduct a scale on student techno-stress as the score after the experiment. After the training group ended, the researchers did not conduct any training on the samples participating in the training group for a period of three weeks for follow-up. Arrange samples to participate in the training group again and complete the techno-stress scale as a repeated measurement.

(5) This study analyzed pre- and post-experiment scores, tracked and participated in behavioral observation records, and summarized the analysis of scores and discussion results.

2.5 Research instruments

The quasi-experimental research tool was modified from the techno-stress Scale (Ragu-Nathan et al., 2008) for those who create and experience techno-stress; five-point Likert scale was used to assess all items, with responses ranging from "strongly disagree" to "strongly agree." It is deemed suitable to interview 11 students from a university for additional content validation (Olson & Ives, 1981). The researchers were able to recruit 10 participants each from the experimental and control groups.

The focus group interview question was about self-developed issues, with the following questions:

Focus group interviews are a qualitative data collection technique (Dilshad & Latif, 2013). Focus groups are valuable because they can offer various ideas and emotions, unique viewpoints on specific topics, and highlight disparities in opinions among different groups. It is capable of producing a significant volume of data quickly. (Rabiee, 2004). Focus group interviews are common in multi-method research (McGarvey et al., 2015; Suwarto, 2012) and are widely used in educational research (Huhn et al., 2016; Mazzarol & Soutar, 2002). Revised the group interview questions after referring to relevant literature. The in-depth interview section guided the theme under the Education and Life Transformation (ELT) model (Jindal-Snape & Ingram, 2013), the Stress and Coping Model (R. S. Lazarus & S. Folkman, 1984), and Berry's Cultural Adaptation model (Ward & Kennedy, 1994), and the opinions of the supervisor, group interview main interview questions were as follows:

Theme 1: Resilience

- " Are you generally optimistic when encountering technical problems before the counseling program? What do you usually do with that?

-. What about after the counseling program? What changes have happened?

Theme 2: Coping strategies

- Before counseling your program, when confronted with unresolved educational technology problems, please describe your experience and whether you have responded in an evasive way.

- After the counseling program, try to determine the difference between solving problems in reality by admitting objective facts. Have you ever had this experience?

-How do you usually ask for help under Techno-stress? Do you think there will be any changes after the counseling program?

Theme 3: Techno-stress

-What type of techno-stress bothers you the most? Please describe what impressed you most.

-What did you feel after the counseling program? Is the Techno-stress that makes your headache somewhat relieved?

2.6 Data Collection

Used sequential mixed research and quantitative quasi-experimental research methods.

Collection steps

The requirement for collecting quasi-experimental data was to select the first step of quantitative study population data that voluntarily participated in the quasi-experiment from phase 1. This sampling study used a purposeful sampling method on 22 students. The experimental and control groups were formed by randomly assigning 11 students. Excluding those who left during counseling and those who did not respond effectively, The last experimental group included 10 individuals, while the control group comprised 10 individuals. Prior to the commencement of the program, techno-stress scale assessments were required for all participants in the experimental and control groups, with subsequent evaluations carried out at the conclusion of the program and during the follow-up period (3 weeks after the program concluded). For this study to have a representative and reliable sample, students who possessed basic computer skills were required to consent and sign an informed consent form. The inclusion criteria were in line with the research objectives. The standard for withdrawal or termination was to withdraw from the online seminar intervention program at any time during or after the quasi-experimental period, based on the participants' wishes, without any consequences. Participants were express their intentions to researchers.

The experimental group received group counseling intervention while the control group did not. Gender, age, and academic performance did not show any significant differences. Conducted experiments between two groups of students to ensure comparability and reliability.

The specific process is as follows:

(1) The researcher contacted the professor and university faculty office to initiate this study. After review, the project has been approved.

(2) According to the phase 1 data analysis results, the factors affecting techno-stress's significance were known. Read relevant documents, textbooks,

and studies on techno-stress and related influencing factors to understand concepts, theories, definitions, and components.

(3) Use documents, textbooks, and work summaries as counseling terminology. Analyzed the techno-stress components of students. These components were collected by writing terminology definitions.

(4) Established a research conceptual framework and developed a counseling program program.

(5) All participants were fill in their personal information and conducted a pre-assessment of techno-stress during the first group counseling.

(6) The experimental group was notified of the counseling process twice a week for 8 weeks to ensure it did not interfere with other participants' schedules. Group counseling began on the agreed-upon schedule.

(7) At the end of the 8th counseling, the participating experimental group was required to conduct a post-evaluation of techno-stress immediately after the counseling.

(8) After the counseling, the group continued their daily learning. After 3-4 weeks, follow-up tests was conducted for the experimental group and control group, and all data has been completed and can be analyzed.

Qualitative collection: After the experiment, semi-structured interviews were conducted with the experimental group students, and recording and transcription were performed using recording software. The data was encoded using Computer Software. Student techno-stress interviews were a method of collecting evidence through targeted dialogue between researchers and interview providers. The steps were as follows:

(1) **Create interview questions for student scales**: The interview questions primarily focused on the happen and changes experienced by students in the experimental group after the quasi-experiment.

(2) **Discussion and refinement of terminology consistency among professionals**: Participants discussed issues and defined the consistency of each term.

The researchers received suggestions and refined the text based on these inputs from qualified individuals.

(3) **Introduction of the interview content model to the experimental group**: The interview content model was introduced to the experimental group, inviting members to participate in interviews based on empirical data.

(4) **Interviews conducted by the author with students**: After organizing the completeness of the survey scale and interview format, the researchers extracted the complete scales and interview protocols for analysis and confirmation of elements. They then utilized the complete scale for data organization.

2.7 Data Analysis

Utilized computer software to code and analyze data, choose analysis of variance parameters for statistical inference, and determined if there were significant differences among groups and stages in the experimental and control groups.

(1) Analyze the quality of the experimental group based on the accuracy of techno-stress analysis content, considering the consistency of objectives, theoretical selection, and theoretical consistency.

(2) Evaluate the effectiveness of the counseling program.

(3) Demographic data of the control group and experimental group.

(4) Descriptive statistics of factors in the experimental and control.

(5) Repeated measures ANOVA of variance analysis showed differences in various variables between the experimental and control groups.

(6) Repeated measurement of simple effects analysis techno-stress.

(7) Repeated measurement of simple effects analysis resilience.

(8) Repeated measurement of simple effects analysis coping strategies.

The qualitative collection was conducted using Computer Software for coding analysis and theme extraction, using the same method as Phase 1, mainly including:

(1) Data immersion: Before classification, it is necessary to be familiar with the data. Thoroughly read and reread the material.

(2) Open coding: Identify and label concepts that appear from data. Researchers do not attempt to transfer data to pre-existing categories but rather allow categories to appear naturally.

(3) Axial coding: Researchers begin to establish connections between categories identified during open coding, in order to understand how different categories are interrelated and treat data as a whole.

(4) Selective encoding: Redefine categories and determine the core categories related to all other categories. In order to form the central narrative or theory of your research.

Ethical considerations

The design of this study was reviewed and approved by the Research Ethics Committee for Xi'an Eurasia University: OYKL2024-01, dated January 1, 2024.

Participants were recruited through information posted by Chinese lecturers on the chat tool WeChat. Interested Chinese participants signed an online consent form and joined the WeChat survey chat group.

Before conducting the study, the Ethics and Research Standardization Department of Xi'an Eurasia University approved the ethical considerations of human subject research. Participants received an introduction to the study, which outlined the study's goals and the potential risks and benefits of participating, via a starting message. In phase 1, the consent form stipulated that the information obtained were anonymous if participants completed and return the survey tool. Participants in phase 2 are informed in the consent form that the data collected would be anonymous, and they had the option to withdraw from the experiment at any point with no repercussions.

CHAPTER 4
RESULTS

The research topic "The Impact of Resilience and Coping Strategies on Techno-stress and Reducing Chinese Students' Techno-stress Through Integrative Group Counseling" was divided into two phases. The purpose of Phase 1 was to study and explore the impact of Resilience(X_4) and Coping Strategies(X_8) on Techno-stress(Y) among Chinese students. Phase 2 was to develop an integrative group counseling program to reduce techno-stress (Y). Moreover, it aimed to examine the difference in Techno-stress(Y) between the intervention group receiving the integrative counseling program and the control group proceeding.

Analytical signs and meanings

n	Replace	Sample Size
M	Replace	Mean
S.D.	Replace	Standard Deviation
b	Replace	Raw Scores Linear Regression
S.E.	Replace	Standard Error
β	Replace	Standard Scores Linear Regression
R^2	Replace	Square Multiple Correlation Coefficient
R^2_{adj}	Replace	Adjust Square Multiple Correlation Coefficient
df	Replace	Degree of Freedom
F	Replace	F-Test
t	Replace	t-test
p	Replace	p-value
B	Replace	Raw Scores Linear Regression
VIF	Replace	variance inflation factor
SS	Replace	Type III Sum of Squares
MS	Replace	Mean Square
M.D.	Replace	Mean Difference
X_1	Replace	Tenacity
X_2	Replace	Strength

X_3	Replace	Optimism
X_4	Replace	Resilience
X_5	Replace	Self-regulation
X_6	Replace	Fantasy and evasion
X_7	Replace	Seeking help and problem-solving
X_8	Replace	Coping strategies
Y	Replace	Techno-stress

PHASE 1 THE IMPACT OF RESILIENCE AND COPING STRATEGIES ON TECHNO-STRESS

1.1 Quantitative analysis of variables using empirical data

The collected data was analyzed using version 25 of Computer Software statistics. The study results can be divided into the following five parts:

1.1 1. Demographic data of the sample

1.1 2. Descriptive analysis of the variables

1.1 3. Correlation analysis of the variables

1.1 4. Regression equation for the variables

1.1.1 Demographics of the sample

The students mainly come from private schools and public schools in Xi'an. Scales were distributed randomly across different grades and majors using the Star scale format, with a total of 305 scales distributed online. After sorting, delete scales with short response or obvious regularity. Finally, 280 valid scales were obtained, with an effective response rate of 91.80%. Detailed basic information can be found in Table 3

Table 3 Number and percentage of the general data of Chinese students (n=280)

General data of Chinese students	Number of Students	Percentage
1. Gender		
Male	102	36.43
Female	178	63.57
Total	280	100.00
2. Education		
Freshman(Y1)	182	65.00
Sophomore(Y2)	68	24.29
Junior(Y3)	2	0.71
Senior(Y4)	28	10.00
Total	280	100.00
3. University type		
Public University	137	48.93
Private University	143	51.07
Total	280	100.00
4. Whether there are brothers and sisters		
only child	72	25.71
2 persons	208	74.29
Total	280	100.00
5. Usually Live		
City	123	43.93
Town	46	16.43
County	56	20.00
Village	55	19.64
Total	280	100.00

Table 3 (Continue)

General data of Chinese students	Number of Students	Percentage
6. Monthly Expenses		
500 to 1000 RMB	23	8.21
1001 to 2000 RMB	188	67.14
2001 to 3000 RMB	53	18.93
Above 3001 RMB	16	5.71
Total	280	100.00
7. Does your college have a Counseling Center		
Yes, I have counseling before.	30	10.71
Yes, I haven't had counseling before.	195	69.64
No	46	16.43
I haven't heard of it	9	3.21
Total	280	100.00
8. Major		
Humanities	98	35.00%
Science and Engineering	105	37.50
Social Sciences	77	27.50
Total	280	100.00

In the valid sample, the general data of Chinese students in the table shows that the majority of females were 63.57% and males were 36.43%. Freshman students accounted for 65.00% of the education level, sophomore students accounted for 24.29%, senior students accounted for 10.00%, and junior students accounted for 0.71%. Universities accounted for 51.07% of private universities, while public universities accounted for 48.93%. Two brothers and sisters accounted for 74.29% of the total, and one person accounted for 25.71%. The cities where one usually resides accounted for 43.93%, followed by counties for 20.00%, villages for 19.64%, and towns for 16.43%. Monthly expenses from 1001 to 2000 RMB account for 67.14%, expenses from 2001 to 3000 RMB account for 18.93%, expenses from 500 to 1000 RMB accounted for 8.21%, and expenses above 3001RMB account for 5.71%. The highest

number of psychological counseling institutions I have not visited was 69.64%, followed by No at 16.43%; have received counseling, accounted for 10.71%, and those who have not heard of it accounted for 3.21%. Most background education accounted for 37.50%, followed by Humanities at 35.00%, Science and Engineering at 37.50%, Social Sciences at 27.50.

A high proportion of female students, with most of the participants being freshmen, while most students had siblings. This demographic distribution provides the basis for further analysis and may be useful for understanding students' psychological and behavioral patterns in different contexts. In particular, differences in gender, grade, and whether an only child may affect students' feelings and Coping strategies(X_8) about Techno-stress(Y), which deserves further exploration in subsequent studies.

1.1.2. Descriptive analysis of the variables

Descriptive statistics of impact of Resilience(X_4) and Coping strategies(X_8) on Techno-stress(Y) of Chinese students.

The researcher analyzed the mean and standard deviation of the impact of Resilience(X_4) and Coping strategies(X_8) on the Techno-stress(Y)of Chinese Students in Table 4.

Table 4 Mean and standard deviation of the impact of Resilience(X_4) and Coping strategies(X_8) on Techno-stress(Y) of Chinese students (n=280)

Variable	Component	M	S.D.	Levels
Resilience(X_4)	Tenacity(X_1)	3.38	0.56	Moderate
	Strength(X_2)	3.48	0.64	Moderate
	Optimism(X_3)	3.56	0.76	High
Coping	Self-regulation(X_5)	3.03	0.51	High
strategies(X_8)	Fantasy and evasion(X_6)	2.50	0.60	Low
	Seeking Help and Problem Solving(X_7)	2.97	0.46	High
Techno-stress(Y)	Techno-stress(Y)	2.96	0.50	Moderate

Table 4 the Resilience(X_4) of Chinese students as follow: Tenacity(X_1) (M=3.38, S.D.=0.56) Strength(X_2) (M=3.48, S.D.=0.64) were at a moderate level and Optimism(X_3) (M=3.56 S.D.=0.76) were at a high level. The Coping strategies(X_8) as follows: Self-regulation(X_5) (M=3.03, S.D.=0.51) and Seeking help and problem-solving(X_7) (M=2.97, S.D.=0.46) were at a high level and Fantasy and evasion(X_6) (M=2.50, S.D.=0.50) was at a low level. The Techno-stress(Y) (M=2.96, S.D.=0.50) was moderate.

1.1.3 Correlation analysis of the variables

The researcher studied the relationship between Resilience(X_4) and Coping strategies(X_8) on the Techno-stress(Y) of Chinese students by Pearson Product-Moment Correlation Coefficient as Table 5.The study impact of Resilience(X_4) and Coping strategies(X_8) on Techno-stress(Y) of Chinese students

Table 5 Correlation Coefficient of the Resilience(X_4) and Coping strategies(X_8) on Techno-stress(Y) of Chinese students (n=280)

Variable	Component	Y	X_1	X_2	X_3	X_5	X_6	X_7
Y	Y	1.00						
X_4	X_1	-0.21*	1.00					
	X_2	-0.37*	0.74*	1.00				
	X_3	-0.46*	0.25*	0.39*	1.00			
X_8	X_5	-0.18*	0.63*	0.57*	0.27*	1.00		
	X_6	0.27*	0.07	-0.02	-0.01	0.10*	1.00	
	X_7	-0.49*	0.40*	0.45*	0.40*	0.50*	-0.02	1.00

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5 studies the relationship between Resilience(X_4) and techno-tress of Chinese students, which had a negative correlation coefficient between 0.21 to 0.46 as follows: Optimism(X_3) and techno-stress(Y) had the highest negative correlation coefficient of -0.46. In contrast, Tenacity(X_1) and Techno-stress(Y) had the lowest negative correlation coefficient of -0.21. This means students with high Resilience(X_4) feel a relatively low Techno-stress(Y). The study relationship between Coping

strategies(X_8) and techno-tress of Chinese students had a negative correlation coefficient between 0.18 to 0.49 as follows: seeking help and problem solving and techno-stress(Y)had the highest negative correlation coefficient of to-0.49; it showed that actively seeking solutions can effectively alleviate techno-stress(Y). while Self-regulation(X_5) and Techno-stress(Y) had the lowest negative correlation coefficient of -0.18. Fantasy and evasion(X_6) and techno-stress(Y) positively correlated to 0.27. Suggesting that this passive response approach may exacerbate Techno-stress(Y)

1.1.4 The regression equation for the variables

Before the researcher analyzed the relationship between Resilience(X_4) and Coping strategies(X_8) on Techno-stress(Y) of Chinese students, the researcher verified the relationship impact of Resilience(X_4) and Coping strategies(X_8) on the Techno-stress(Y) of Chinese students by Tolerance and VIF.

Table 6 Verified relationships between analyzed Resilience(X4) and Coping strategies(X_8) of college Chinese students (n=280)

Variable	Component	Tolerance	VIF
Resilience(X_4)	Tenacity(X_1)	0.39	2.58
	Strength(X_2)	0.39	2.56
	Optimism(X_3)	0.78	1.28
Coping	Self-regulation(X_5)	0.52	1.92
strategies(X_8)	Fantasy and evasion(X_6)	0.97	1.03
	Seeking Help and Problem Solving(X_7)	0.66	1.52

Table 6 shows that the Resilience(X_4) and Coping strategies(X_8) of Chinese students had a Tolerance of 0.39-0.97, which had not exceeded 3, and a VIF of 1.03-2.58, which has not exceeded 10. Tolerance and VIF consistency could summarize the relationships between analyzed Resilience(X_4) and Coping strategies(X_8) of Chinese students, not Collinearity. The researcher analyzed multiple regression analyses.

Multiple regression analysis of Resilience(X_4) and Coping strategies(X_8) on Techno-stress(Y) of Chinese students had significantly at 0.05 levels (F=32.08, df=6.273, p≤0.01) showed that Tenacity(X_1), Strength(X_2), Optimism(X_3), Self-regulation(X_5). Fantasy and evasion(X_6), Seeking help and problem-solving(X_7) can describe Techno-stress(Y) (Table7)

Table 7 Multiple regression analysis of the impact of Resilience(X_4) and Coping strategies(X_8) on Techno-stress(Y) of Chinese students (n=280)

Variable	Component	b	SE	β	t	p
	(Constant)	4.30	0.20	-	21.05*	0.01
X_4	X_1	0.06	0.07	0.07	0.94	0.35
	X_2	-0.17	0.06	-0.21	-2.84*	0.01
	X_3	-0.18	0.03	-0.28	-5.30*	0.01
X_8	X_5	0.13	0.06	0.13	2.10*	0.04
	X_6	0.20	0.04	0.23	4.92*	0.01
	X_7	-0.41	0.06	-0.38	-6.59*	0.01

Note. R^2= 0.41 R^2_{adj} = 0.40 F=32.08 df=6, 273 p≤0.01

The significant relationship level at p = 0.05 between Resilience (X4) and Techno-stress (Y) among Chinese students, with Optimism showing the highest negative Linear regression with a standard score of -0.28. and Strength(X_2) Linear regression showed that it had the lowest negative standard scores at -0.21, except that Tenacity(X_1) did not significantly reach 0.05 levels. This indicated that Chinese students with higher Optimism(X_3) and Strength(X_2) feel smaller Techno-stress(Y). At the 0.05 level, significant relationships were found between coping strategies (X_8) used by Chinese students to deal with Techno-stress (Y) in the following descending order: Fantasy and evasion(X_6) obtained the highest positive standardized scores with linear regression to 0.23 and Self-regulation(X_5) achieved the lowest positive standard scores with linear regression to 0.13 while Seeking help and problem-solving(X_7) achieved the lowest negative standard scores linear regression to-0.41. Interestingly, when students

adopt more positive coping strategies (X_8), their techno-stress (Y) may increase. This could be attributed to the increased psychological burden individuals experience when applying positive coping strategies (X_8).

Therefore, the researcher constructed an equation to resilience and coping strategies affecting the techno-stress of Chinese students.

Equation Predict Raw Score

Y=4.30(Constant) -0.41Seeking help and problem-solving(X_7) +0.20Fantasy and evasion(X_6) 0.17Strength(X_2)-0.18 Optimism(X_3)+0.13 Self-regulation(X_5) +0.06Tenacity(X_1)

Equation Predict Standard Score

ZY = -0.38Seeking Help and Problem Solving(X_7) -0.28Optimism(X_3)+0.23Fantasy and evasion(X_6) -0.21Strength(X_2) +0.13Self-regulation(X_5) +0.07Tenacity(X_1)

1.2 Make a qualitative analysis of the variables using empirical data

Phase 1 qualitative research used individual interviews. The empirical method was adopted for hierarchical coding with samples from five students from private universities in Phase 1 quantitative research. The personal interview questions primarily focused on three themes: resilience (X_4), coping strategies (X_8), and techno-stress (Y). The questions addressed the following three objectives:

Firstly, the focus was on supplementing the remaining parts of quantitative research. For example, besides the quantitative display of coping strategies, were there other coping strategies that affected techno-stress?

Next, the results obtained from quantitative analysis were further explained. For instance, how did factors such as resilience (X_4) and coping strategies (X_8) affect techno-stress? Which aspects of techno-stress were affected?

Finally, significant factors obtained from quantitative analysis were further confirmed.

The collected data were encoded using the Computer Software. The research results ultimately obtained the Selective core coding through three-level coding.

Phase 1 qualitative research selected two public and three private university students, totaling five students, for personal interviews.

Table 8 Phase 1 Personal Interview Information Form

Variable	Component	Private students			Public students	
		Pr1	Pr2	Pr3	Pu4	Pu5
Resilience	Tenacity				√	
	Strength				√	√
	Optimism	√	√	√	√	
Coping strategies	Self-regulation	√	√	√	√	√
	Fantasy and evasion	√			√	
	Seeking help and problem-solving	√	√	√	√	√
Techno-stress	Techno-invasion				√	√
	Techno-complexity	√	√	√	√	√
	Techno-learning pressure	√	√	√		√

Qualitative research formulates questions based on three variables, namely, three themes(Resilience, coping strategies, techno-stress), and breaks down the factors included according to the questions. The specific framework is shown in the following figure 6:

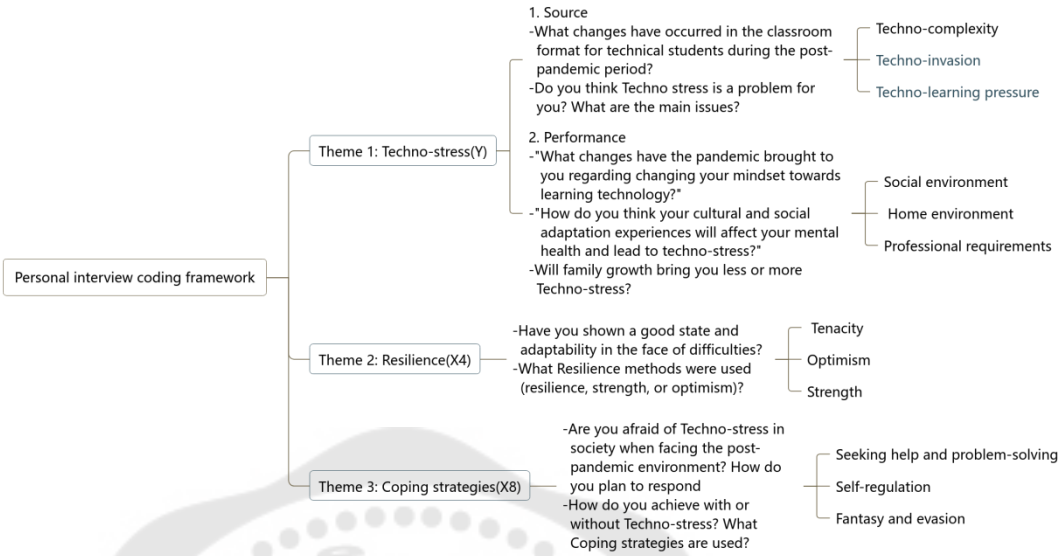


Figure 4 Personal interviews framework

Partial Interview Record

Theme 1: Techno-stress(Y)

According to the results of student interviews, in terms of techno-stress (Y), it was inferred that students generally believed that the changes in contemporary learning technology and its application in education significantly increased their pressure. Private students experienced significantly higher levels of techno-stress (Y) compared to public students. Students from different academic backgrounds expressed a need to learn, particularly in technology-related courses where complexity often required them to allocate more time to learning. Additionally, students expressed the belief that acquiring and continually updating technology-related knowledge was essential for social integration. They also noted that family and social environments played a role in influencing students' techno-stress (Y).

1. Source

The main sources of techno-stress for students are techno-learning pressure related to techno-stress and the complexity and invasion of technology derived from techno-stress.

-“What changes have occurred in the classroom format for technical students during the post-pandemic period? ”

-“Do you think Techno stress is a problem for you? What are the main issues? ”

(1) Techno-complexity

“Many online APP learning systems are mainly troublesome and complicated, but I think it is very fast to learn this software. You start from scratch, and you will be a little worried. ”

“We have a course about technology, then there will be some pressure, such as CAD; I learned Engineering Specialties, but actually, my ability in the arts will be stronger than in terms of science because I need practice, need practical ability will be stronger, then my ability will be weak, so it is very difficult in operation, needs to grind slowly.”

(2) Techno-invasion

“If it is because of my own inertia or my problems, I may be a little sad, so I think if the time can make up for my poor place, then I am willing to. ”

“If you want to get better results, you will sacrifice extra time to learn this knowledge.”

(3) Techno-learning pressure

“The first is very anxious, and then after the anxiety of how to solve.”

“In every classroom, I learned the teacher's knowledge in time, so if he suddenly took a small test before each class, I was under great pressure. Then I might spend more time studying this course every day. ”

2. Performance

Students generally believed that keeping up with the pace of technology is essential for adapting to modern society. They felt a sense of urgency and competitive pressure to learn technology. This need extended beyond science and engineering to include disciplines such as liberal arts, which also have technical requirements. Mastering technology in education was seen as a prevailing trend.

Lastly, students noted that having support from family and siblings in learning technology could help reduce techno-stress.

-"What changes have the pandemic brought to you regarding changing your mindset towards learning technology?"

-"How do you think your cultural and social adaptation experiences will affect your mental health and lead to techno-stress?"

-“Will family growth bring you less or more Techno stress? How did you handle its social environment”

(1) Social environment

> “If you lag, that certainly can not keep up with the pace of The Times. Learn by yourself by adjusting.”
>
> “For example, because my city has a small population and a small number of students, there will be a small amount of pressure from competition in many aspects. Then, out of the province and to other provinces, I will meet more and more powerful people, so I feel the pressure will be greater. ”

(2) Home environment

> “After arriving at college, my sister will teach me, and my sister will also help me with computer knowledge. ”

(3) Professional requirements

> “Under study pressure, the first is the sudden change from science to liberal arts. In this major, we have the digital media technology”

Theme 2: Resilience(X_4)

In terms of Resilience(X_4), the Optimism(X_3) method of the student union deals with Techno-stress(Y), and the students think that the Optimism(X_3) method was more effective. If the Techno-stress(Y) problem was large and intractable, public students use Tenacity(X_1) and Strength(X_2) to handle the Techno-stress(Y) problem, although these methods were not previously confirmed in quantitative studies, students reported their use.

-"Have you shown a good state and adaptability in the face of difficulties? (For example, what methods successfully solved the techno-stress problem? What Resilience methods were used (resilience, strength, or optimism)?"

(1) Tenacity(X_1)

"I have to do this well since I want to do this myself, and then I rest and continue to do it. There are many computer languages, but I do not understand them. I still bite the teeth first and then go through how to look it down. "

(2) Optimism(X_3)

"Find a person to change it all. It is for help. I do not really want to give up everything I get out of my hands. "

"Still quite positive, quite an Optimism solution. "

(3) Strength(X_2)

"Although after this thing, I may still think that sentence, that is, those who cannot be killed will make me stronger. "

"After the recovery, or after the matter, I think this difficult time is solved very strongly. "

Theme 3: Coping strategies(X_8)

The researcher aimed to understand how participants dealt with obstacles in academic learning or adjusted to life. Next, four common approaches arose: looking for social support, engaging in physical activity, actively restructuring, and diverting attention. Social support and artificial intelligence were the primary methods used for coping, particularly. Support providers varied in how they dealt with various stressors, despite our previous quantitative results not verifying this. After that, participants engaged in physical activity, a popular approach among students, with a significant number stating they had consistent exercise routines. Participants struggled to resolve with current assistance, active reconstruction strategies were often employed, or the stressors were long-term. With technical difficulties, students were good at using the methods of help problem-solving and Self-regulation(X_5). Compared with public students, private students sometimes chose to escape.

-“Are you afraid of Techno-stress in society when facing the post-pandemic environment? How do you plan to respond”

-“How do you achieve with or without Techno-stress? What Coping strategies are used?”

(1) Seeking help and problem-solving(X_7)

> “I will still help with external forces to solve the problem. Like that is like that AI, I use that AI, and if I don't understand, I will ask AI for help, and then I will choose to go to that to try to understand this code. What does it mean? And then next time, if this happens again, I will give AI the answer based on what he is in that AI. ”
>
> “I have a software student friend and plan to consult him or read some blogs online. ”

(2) Self-regulation(X_5)

> “Good friend talks, then still has to listen to the song. Sometimes, I can go to taekwondo or playfield, a sports movement.”
>
> “I do not usually ask people first. I usually explore it for myself first. I searched for this content online, went to the library, and read all the books again. ”

(3) Fantasy and evasion(X_6)

"I might avoid it because of what I said before. Maybe it was playing the game, and then I was a little shadow. "

"As A net class just started, A period determined to corner overtaking, but after one or two months, the feeling is so beginning to play, even listen, open hang up, is the parents in supervision, going to sleep, play games, go out to play. "

1.3 Summary of results in phase 1

This cross-sectional study showed that coping strategies mediated resilience and techno-stress, accounting for 48.39% of the total effect. The strength (X_2) of resilience (X_4) (β=-0.21, t=-2.84, p$\leq$0.01) and optimism (X3) (β=-0.28, t=-5.30, p$\leq$0.01) were significantly negatively correlated with techno-stress (Y). In coping strategies (X_8), fantasy and evasion (X6) (β=0.23, t=4.92, p$\leq$0.01) showed a significant positive correlation with techno-stress (Y). Seeking help and problem-solving (X7) (β=-0.38, t=-6.59, p$\leq$0.01) were significantly negatively correlated with techno-stress (Y), indicating that when facing techno-stress (Y) problems, students tended to exhibit positive resilience (X_4) and coping strategies (X_8). If the problem was not resolved, they chose to avoid it.

Qualitative research also found that role models from non-only-child families or parents helped students overcome technical problems when entering university. Most teenagers claimed to have psychological counseling centers in their schools but were less likely to seek help when they experienced techno-stress or problems. Most Chinese students recognized the progress of technology and believed they should constantly improve their technological learning abilities. However, encountering technical difficulties inevitably led to feelings of pressure. In addition to inherent coping strategies, students repeatedly mentioned using physical exercise and artificial intelligence to address technical problems. Students generally believed that the pressure of techno-learning was a significant challenge that needed to be addressed in the current learning environment.

PHASE 2 DEVELOP AN INTEGRATIVE GROUP COUNSELING PROGRAM TO REDUCE THETECHNO-STRESS OF CHINESE STUDENTS

2.1 Quantitative analysis for integrative group counseling program to reduce techno-stress

From phase 1, the results showed that the Strength and Optimism variables of resilience had the highest negative total effect on techno-stress, with a significance level of $\leq$0.01. The Fantasy and evasion, Seeking Help, and Problem-Solving coping strategies variables had the highest negative total effect on techno-stress, with a significance level of $\leq$0.01. According to the results of phase 1, the structural equation was as follows: $ZY = -0.38$Seeking Help and Problem Solving(X_7) -0.28Optimism$(X_3)$$+0.23$Fantasy and evasion$(X_6)$ -0.21Strength(X_2) $+0.13$Self-regulation(X_5) $+0.07$Tenacity(X_1)

Phase 2, the integrative group counseling program aimed at reducing techno-stress aims to enhance optimism and strength, improve Seeking help and problem-solving, and reduce Fantasy and evaluation.

The development of an integrative group counseling program

There are **four** steps in this stage:

1) According to relevant literature, an integrative group counseling intervention program was developed to reduce techno-stress and enhance the most powerful predictive factors since phase 1. This program applies Person-centered therapy, Cognitive Behavioral Therapy, Positive psychotherapy, Rational Emotional Behavior Therapy, and Reality therapy.

2) An integrative group counseling intervention program was developed, consisting of 8 sections, each lasting 150 minutes, focusing on reducing techno-stress. In the counseling program, Sessions 2-3 aimed to reduce techno-stress through coping strategies, including seeking help and problem-solving. Sessions 4-5 focused on reducing techno-stress by addressing fantasy and evasion, and increasing self-regulation. Sessions 6-7 enhanced resilience components such as optimism and strength to reduce techno-stress.

3)The quality of the developed program was evaluated by five psychology experts (two from China and three from Thailand), and the results are as follows:

4) The researcher modified the counseling program based on expert opinions.

Implementation of the counseling program

The revised counseling program consisted of 8 sessions, each lasting 150 minutes. The experimental group underwent the program from March 2024 to April 2024, meeting twice a week for a total of 4 weeks. The sessions were scheduled from 14:00 to 16:30 every Wednesday and Friday.

Table 9 Overview of the revised Integrative Counseling program

Session	Objective	Procedure	Theory and Techniques
Session 1: Establish lead found and build rapport familiarity—Initial Stage	1. Students will build a rapport and trusting relationships with each other. 2. Students will establish collective rules that they all agree to follow. 3. Students will understand the meaning of participating in this project and the techno-stress concept.	Beginning stage 1. Interpersonal warm-up and trust building: "animal card" games 2. Understanding of the group activity, establishing a psychological counseling contract Working stage 1. Introduction to Group Psychological Counseling. 2. Pre-test techno-stress. Closing Stage Leaders use listening, encourage group members to answer questions and provide timely feedback.	Person-centered therapy Techniques Unconditional, positive attention, sincere, and positive feedback

Table 9 (Continue)

Session	Objective	Procedure	Theory and Techniques
Session 2: Share their stories—Transition Stage stage	1. Students have a clear understanding of the concept of techno-stress and understand their techno-stress to perform. 2. The concept and types of help that group members seek. and build good trust. 3. Steering group members used the **seeking help and problem-solving** method to solve the techno-stress problem.	Beginning stage "Spider web" activity Working stage;Sharing stories;Case analysis;Closing Stage;Sharing and feedback	Person-centered therapy Techniques Active, empathic, unconditional, positive attention, live performance, case analysis
Session 3: Identifying and expressing emotions—working stage	1. Help members identify the core of their psychological symptoms by handling their emotions in the source of stress. 2. Instruct group members to use good methods to **seek help and problem-solve** so that group members can learn to deal with problems flexibly.	Beginning stage Desensitization: Play an APP game Working stage 1Team groups pair up to discuss questions and then role-play to answer them 2. Activity—Find the stress source Closing stage Homework assignment technique: Complete the "reverse mood diary" and ask group members to give feedback in the next session.	Rational Emotive Behavior Therapy (REBT) Techniques Role-play, Desensitization, and ABC treatment

Table 9 (Continue)

Session	Objective	Procedure	Theory and Techniques
Session 4: Identifying and understanding emotions — working stage	1. Free the members from the **fantasy and evasion**'s emotions or behavior through specific events 2. Team members can use effective methods to cope with techno-stress.	Beginning stage 1. Music relaxation module 2. Scenario discussion activity Working stage1. Specific scenarios and case analysis activity;2. Make competitive tapes(Mobile recordings) to teach students how to use positive and responsive expressions;3. Shadow puppetry sitcoms Closing stage: Leaders asked group members to review the knowledge learned and summarize more adapted new beliefs and solutions	Rational Emotive Behavior Therapy (REBT) Techniques Rational emotive imagery, Relaxation training, and the ABC treatment

Table 9 (Continue)

Session	Objective	Procedure	Theory and Techniques
Session 5: Reason and reflection—Work stage	1. Use exposure therapy to help group members understand that the stress of technology is not as scary as expected 2. Free the members from the strategy of fantasy and evasion. Find a way to **self-regulation** 3. Lead the group members to see the connection between past, present, and future and correctly view the techno-stress.	Beginning stage Video Introduction： Play and explain animations of divergent thinking and integrated thinking. Working stage 1. Guide team groups to complete the WDEP implementation plan. The members talk about unpleasant things on campus and their solutions 2. The activity of getting to know oneself and others to consolidate the practical activities of the previous chapter Closing stage Self-help and self-growth technology activity	Reality therapy Techniques Commitment, Self- evaluation, WDEP system

Table 9 (Continue)

Session	Objective	Procedure	Theory and Techniques
Session 6: Find an effective way to work—Working stage	1. Group members were encouraged to maintain **optimism** in facing difficulties based on alternative hypotheses gathered from logical evidence and behavioral experiments. 2. Group members approach techno-stress optimistically through a positive mental explanation or attribution style.	Beginning stage: Relax training; Play positive psychological videos to help team groups relax Working stage:1.Communication skills training in — exposure therapy;2. Open a door activity;3. Group brainstorming: Closing stage; Action Diary Write a positive behavioral response diary as per the five techno-stress requirements	Cognitive Behavior Therapy (CBT)|, Positive psychotherapy Techniques 1.Exposure techniques (Cognitive Behavior Therapy) 2. Searching for alternative explanations (Cognitive Behavioral Therapy) 3. Brainstorm Up (Positive psychotherapy)

Table 9 (Continue)

Session	Objective	Procedure	Theory and Techniques
Session 7: Implement effective methods—Working stage	1. Establish the resilience thinking of optimism and strength 2. Lead the group members to observe the connection between past, present, and future and view the techno-stress correctly. 3. Highlight the importance of the current reality to enable group members to find suitable ways to seek help and problem-solving.	Beginning stage Homework feedback Working stage 1. Case sharing 2. Activity—Be a lucky person 3. Emotional regulation mindfulness guidance training Closing stage Sentence exercises of positive thinking (one of the elements of resilience thinking)	Positive psychotherapy Techniques 1. Case sharing 2. Positive psychology- - Emotional regulation technology

Table 9 (Continue)

Session	Objective	Procedure	Theory and Techniques
Session 8: Effect evaluation stage— Termination Stage	1. Have more confidence in yourself and find better ways to seek help. 2. Recognize how the group itself changes.	Beginning stage Warm-up exercise: Play pre-collected mindfulness songs, such as "Sunshine after the Rain". Working stage 1. Clarifying questions 2. Imagine the rehearsal training. Ask others for help or find multiple ways to solve the problem. 6. Look back- Summary Activity Closing stage 1. Techno-stress post-test 2. An electronic letter written to yourself	Cognitive behavior therapy (CBT) Person-centered Techniques Alternative hypotheses Sincere and unconditional acceptance

The data collected from quantitative research was analyzed by computer software. Divided into the following six parts:

Part 1: Demographic data of the control group and experimental group.

Part 2: Descriptive statistics of factors in the experimental and control groups (pre-test, post-test, and follow-up period).

Part 3: Repeated measures ANOVA of variance analysis showed differences in various variables between the experimental and control groups.

Part 4: Repeated measurement of simple effects analysis techno-stress.

Part 5: Repeated measurement of simple effects analysis, protective resilience.

Part 6: Repetitive measurement of simple effects analysis coping strategies.

2.1.1 Demographic characteristics of the participants in the control and experimental groups

The private university in Phase 1 provided the sample, with 20 students conducting a quasi-experimental study. The study included a control group of 10 students and an experimental group of 10 students. Detailed demographic information for the experimental group can be found in Table 10.

Table 10 Demographic characteristics of the subjects in the experimental group (n=10)

Demographic variables		Number of students	Percentage
Gender	Man	6	60
	Woman	4	40
Brothers and sisters	Not have	3	30
	One	3	30
	Two	4	40
Does the school have a Counseling Center	Yes, I haven't been	8	80
	Not have	2	20
Major	Humanities	4	40
	Social Sciences	3	30
	Science and Engineering	3	30

Table 10 show a total of 10 students volunteered to participate in the study; all are freshmen of private universities; male student accounted for 60%, female student accounted for 40%; 30% are only children; And no one has been Counseling; 40% of them majored in Humanities, Social Sciences 30%, Science and Engineering 30%.

The statistics of demographic variables for subjects in the control group are shown in Table 11

Table 11 Demographic characteristics of the subjects in the control group (n=10)

Demographic variables		Number of students	Percentage
Gender	Man	6	60
	Woman	4	40
Brothers and sisters	Not have	2	20
	One	5	50
	Two	3	30
Does the school have a Counseling Center	Yes, I have been Counseling	2	20
	Yes, I haven't been	8	80
	have	1	10
Major	Humanities	3	30
	Science and Engineering	4	40
	Social Sciences	3	30

A total of 11 students volunteered to participate in the study. All students were from private universities, with male student accounting for 60%. Regarding sibling situations within their families, 20% were the only children, 50% had one sibling, and 30% had two siblings.

Psychological counseling institutions were available on campus, with 20% having received counseling and 80% having never used these services. In terms of majors, 30% were in Humanities, 40% in Science and Engineering, and 30% in Social Sciences.

2.1.2 Descriptive statistics of factors in the experimental group and the control group (pretest, posttest, and follow-up periods)

Experimental and control participants completed the techno-stress(Y) scale during pre-test, post-test, and follow-up.

Table 12 Description and statistics of each factor pretest, posttest, and follow-up periods of the experimental groups

Variable	Pretest			Posttest			Follow-up		
	M	S.D.	Levels	M	S.D.	Levels	M	S.D.	Levels
Techno-stress	3.25	0.48	Moderate	2.60	0.45	Low	2.66	0.54	Low
Resilience	1.99	0.77	Low	3.20	0.23	Moderate	3.13	0.37	Moderate
Coping strategies	2.91	0.34	High	2.99	0.35	High	2.39	0.45	Moderate

Results from Table 12 indicate that the mean score for participants experiencing techno-stress in the experimental group was recorded at pretest, posttest, and follow-up periods as follows: 3.25 (S.D.=0.48), 2.60 (S.D.= 0.45), and 2.66 (S.D.= 0.54); The resilience of the pretest, posttest, and follow-up periods, the mean score respectively was 1.99(S.D. =0.77), 3.20 (S.D. = 0.23), and 3.13 (S.D.= 0.37)); Coping strategies of the pretest, posttest, and follow-up periods, the mean score respectively was 2.91(S.D. =0.34), 2.99 (S.D. = 0.35), and 2.39 (S.D. = 0.45)

Next, we will analyze the variables and duration of the control group using descriptive statistics, and the outcomes will be presented in Table 13.

Table 13 Descriptive statistics of resilience, coping strategies, and Techno-stress of the control group

Variable	Pretest			Posttest			Follow-up		
	M	S.D.	Levels	M	S.D.	Levels	M	S.D.	Levels
Techno-stress	3.20	0.20	Moderate	3.12	0.20	Moderate	3.26	0.41	Moderate
Resilience	2.72	0.32	Moderate	2.59	0.37	Low	3.03	0.37	Moderate
Coping strategies	3.13	0.45	High	3.12	0.37	High	2.90	0.34	High

Table 13 Results show Each factor of Techno-stress, pretest, posttest, and follow-up periods techno-stress participants in the experimental group the mean score respectively was 3.20(S.D. =0.20), 3.12(S.D. =0.20), and 3.26 (S.D. = 0.41).For the resilience of the pretest, posttest, and follow-up periods, the mean scores, respectively, were 2.72(S.D. =0.32) and 2.59 (S.D. = 0.37). For the coping strategies of the pretest, posttest, and follow-up periods, the mean scores respectively were 3.13(S.D. =0.45) and 3.12 (S.D. = 0.37).

2.1.3 Repeated measurement analysis of differences between various factors in pre-test, post-test, and follow-up

The comparison of pre-test techno-stress, resilience, and coping strategies between the experimental group and the control group was carried out using an independent sample t-test in this study, with the results presented in Table 18.

Table 14 Independent sample t-test for techno-stress and resilience and coping strategies

Variable	Experimental group (n=10)	Control group (n=10)	t	P
Techno-stress	89.6±7.53	86.5±5.44	1.06	0.31
Resilience	73.2± 4.76	77.7±6.63	-1.74	0.10
Coping strategies	58.4±5.19	62.9±7.05	-1.63	0.12

Table 14 indicate that in contrast to the experimental group, the Resilience scores (M=96.86, SD=34.38) were not statistically significantly different from those of the Control group (M=34.09, SD=20.67) ($p>0.05$). Similarly, compared with the experimental group's Coping strategies scores (M=58.4, SD=5.19), those of the Control group (M=62.9, SD=7.05) were not statistically significantly different ($p>0.05$). Additionally, the Techno-stress scores for the experimental group (M=89.6, SD=7.53) were not statistically significantly different from those of the Control group (M=86.5, SD=5.44) ($p>0.05$).

The experimental group and the control group did not exhibit any statistically significant distinctions in techno-stress, resilience, and coping strategies. Thus, covariance could be disregarded.

Following this, a repeated measures ANOVA was employed to examine the differences over time between the experimental and control groups in terms of engagement in group planning for techno-stress and the various variables influencing techno-stress.

Table 15 Significant results of intra-subject effects of pretest, post-test, and follow-up related factors in the experimental group and control group

Component	SS	df	MS	F	P
Techno-stress					
Period	1260.03	1.59	794.41	5.66	0.01
Period * group	1103.7	1.59	695.85	4.96	0.02
Error	4009.6	28.55	140.44		
Mauchly's W= 0.74 X2=5.15 df=2 p=0.08					
Resilience					
Period	923.2	1.797	513.713	21.16	0.01
Period * group	824.133	1.797	458.587	18.889	0.01
Error	785.333	32.348	24.278		
Mauchly's W= 0.887 X^2= 2.036 df=2 p= 0.361					
Coping strategies					
Period	1096.933	1.903	576.361	20.533	0.01
Period * group	1544.133	1.903	811.333	28.904	0.01
Error	961.6	34.258	28.07		
Mauchly's W= 0.949 X^2= 0.887 df=2 p= 0.642					

The results in table 15 showed that the Mauchly's sphericity test indicated that all factors had p-values greater than 0.05, suggesting that the assumption of sphericity was met. Subsequently, the within-subjects effects test was selected. It revealed a significant time effect with $p < 0.05$, indicating significant fluctuations in both the experimental and control groups across different pre-test, post-test, and follow-up periods. Furthermore, the interaction effect between time periods and groups was found to be significant. Therefore, further simple effect analysis was deemed necessary.

2.1.4 Repeated measurement of simple effects analysis techno-stress.

Table 16 shows a comparison of the techno-stress experimental group and control group at each period, aiming to confirming the effectiveness of the

experimental group's intervention will be based on significant differences observed in the post-test and follow-up phases compared to the previous phase.

Table 16 Differences in techno-stress and it is influencing factors between pre-test, post-test, and follow-up (Period paired comparison)

Variable	Group	Period	M.D.	S.E.	p
Techno-stress	Experimental group	Posttest-Pretest	-19.50*	3.51	0.01
		Follow-up-Pretest	-17.50*	4.74	0.01
		Follow-up-Posttest	2	5.66	0.98
	Control group	Posttest-Pretest	-2.1	3.51	0.91
		Follow-up-Pretest	1.4	4.74	0.99
		Follow-up-Posttest	3.5	5.66	0.91

* The significance level of M.D. is 0.05

The findings in Table 16 show significant differences seen during the entire experimental group period. Significant differences in the experimental group were found in the Post-test and Follow-up analyses ($p<0.05$), While the follow-up up-posttest was not significant ($p>0.05$), indicating that group counseling has a certain effect.

2.1.5 Repeated measurement of simple effects analysis resilience.

Table 17 presents paired comparison data between the resilience experimental group and the control group at each stage, aimed at ascertaining the presence of significant differences in the post-test and follow-up stages in comparison to the preceding stage, thus validating the effectiveness of the experimental group's intervention.

Table 17 Differences in resilience and its influencing factors between pre-test, post-test, and follow-up (Period paired comparison)

Variable	Group	Period	M.D.	S.E.	p
Resilienc e	Experimental group	Posttest-Pretest	15.90*	1.79	0.01
		Follow-up-Pretest	15.20*	2.04	0.01
		Follow-up-Posttest	-0.70	2.39	0.99
	Control group	Posttest-Pretest	-1.90	1.79	0.66
		Follow-up-Pretest	3.20	2.04	0.35
		Follow-up-Posttest	5.10	2.39	0.13

* The significance level of M.D. is 0.05

The findings from Table 17 indicate that the control group did not experience a significant change in Resilience at each time point compared to the paired group ($p>0.05$). Throughout the experimental group phase, a significant difference in Resilience was noted. The experimental group had notably lower values compared to the control group, indicating a significant difference. A significant difference was observed between the post-test and Follow-up results in the experimental group ($p<0.05$). The experimental group exhibited a notable reduction in comparison to the control group ($p<0.05$). The integrative group counseling program led to an increase in resilience among participants in the experimental group.

2.1.6 Repeated measurement of simple effects analysis coping strategies.

Table 18 shows a comparison of coping strategies between the experimental and control groups at each stage. This study conducted this to identify any significant differences in order to verify the effectiveness of the experimental group's intervention, the groups were compared in the post-test and follow-up stages to the previous stage.

Table 18 Differences in coping strategies and its influencing factors between pre-test, post-test, and follow-up (Period paired comparison)

Variable	Group	Period	M.D.	S.E.	p
Coping strategies	Experimental group	Posttest-Pretest	22.20*	2.06	0.01
		Follow-up-Pretest	15.00*	2.51	0.01
		Follow-up-Posttest	-7.20*	2.35	0.02
	Control group	Posttest-Pretest	-2.60	2.06	0.53
		Follow-up-Pretest	1.20	2.51	0.95
		Follow-up-Posttest	3.80	2.35	0.33

* The significance level of M.D. is 0.05

The findings in Table 18 show that there was no significant difference in Coping strategies between the control group and the paired group at each time point ($p>0.05$) during the experimental period. However, coping strategies exhibited notable variability. In contrast, the post-test and Follow-up results showed significant differences in the experimental group ($p<0.05$). Specifically, the experimental group demonstrated lower outcomes compared to the control group, with a significance level of $p<0.05$. It was evident that coping strategies demonstrated a significant post-test effect in the experimental group, showing a slight decrease in follow-up but remaining relatively stable overall.

The comparison between the experimental group and the control group in terms of techno-stress, resilience, and coping strategies is depicted in Figure 5, Figure 6, and Figure 7 during the pretest, posttest, and follow-up.

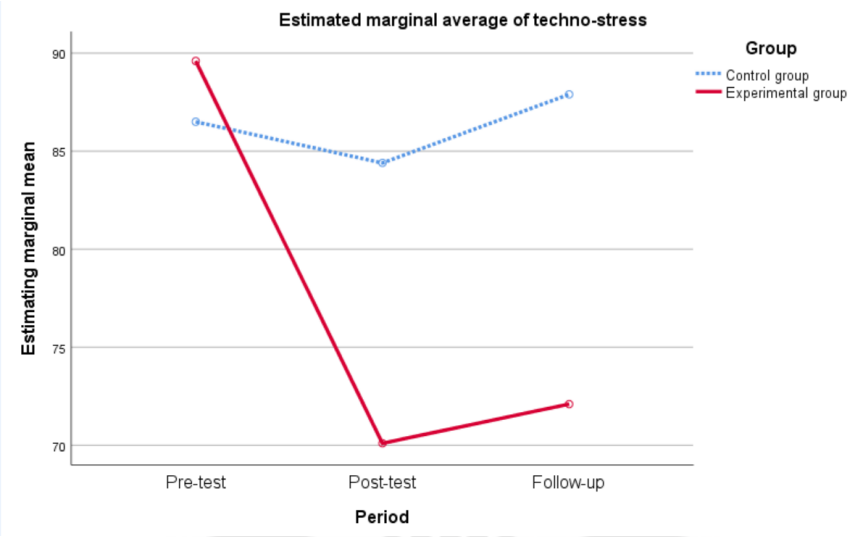


Figure 5 Outline of marginal mean value for techno-stress estimation

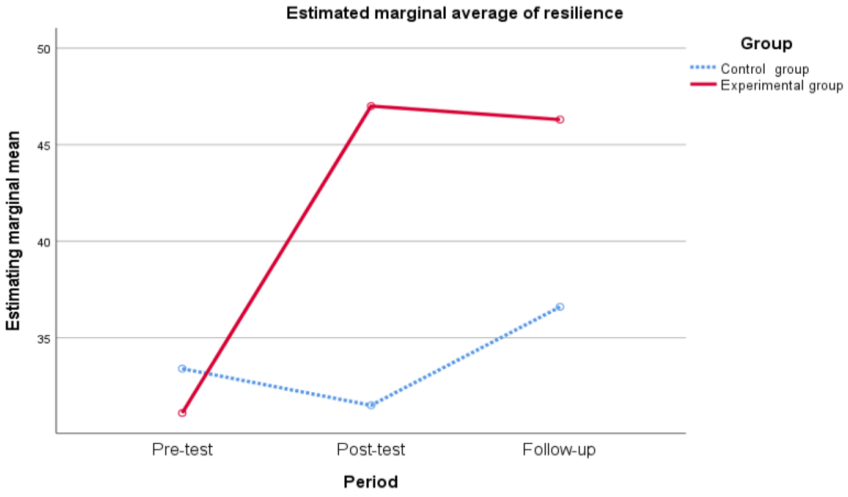


Figure 6 Outline of marginal mean value for resilience estimation

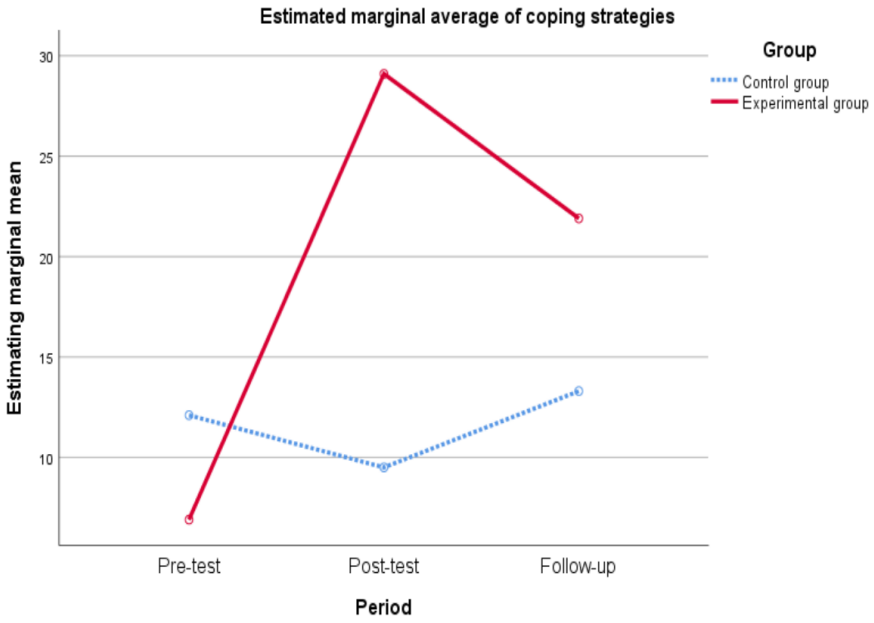


Figure 7 Outline of the marginal mean value for coping strategies estimation

2.2 Make a qualitative analysis of Focus group interviews

A qualitative study selected 10 students from the experimental study for focus group interviews. The interview questions mainly focused on the students' happening and changes after group counseling. The study adopted an empirical method for hierarchical coding to analyze the interview data.

Firstly, it is confirmed that the experimental group of students, after group counseling and manipulating the factors that affect techno-stress, experienced a reduction in techno-stress and were asked to repeat what had happened. For example, whether students before group counseling impact factors such as strength, optimism, seeking help from others, fantasy and evasion, and what happens after group counseling.

Secondly, the changes in students after group counseling should be verified. For example, what is the most frustrating thing about techno-stress for students before counseling, and have there been any changes after counseling

The audio was converted into text, and the content was analyzed qualitatively using computer software. After the preliminary analysis and sorting of the interview materials, the next step involved coding the data using thematic coding, organizing codes into a hierarchical structure. The coding process employed both inductive and deductive approaches, utilizing step-by-step clustering to establish categories and relationships between them. This facilitated exploration of changes in students' resilience, coping strategies, and levels of techno-stress following the counseling program.

Partial Interview Record

Theme 1: Resilience

-Are you generally optimistic about encountering technical problems before the group counseling? What do you usually do with that?

-What about after the group counseling? What changes have happened?

Students generally believed that after group counseling, they became more optimistic and showed greater strength in addressing challenging techno-stress situations.

> Student 1: Before the problem, my mentality was more anxious, melancholy, and irritable. Generally, I will drag and wait; after counseling, I will communicate and ask more, like some relevant professionals.
>
> Student 3: Before, I was more anxious. I checked some information on the Internet, then saw if there were any teaching videos, and then I would communicate more with my classmates or teachers and then look for more interesting ways on the Internet.

Theme 2: Coping strategies

-Before counseling, when confronted with unresolved educational technology problems, please describe your experience and whether you have responded in an evasive way.

-After the group counseling, try to understand the difference between solving problems in reality by admitting objective facts. Have you ever had this experience?

-How do you usually ask for help under Techno-stress? Do you think there is any change after the group counseling?

Before group counseling, students tended to avoid or passively resist solving techno-stress problems. After group counseling, students became more diverse in coping strategies to deal with techno-stress and more would to face problems directly. They would choose multiple coping strategies if one coping strategy could not solve the problem. This indicates that after group counseling, the flexibility of students' coping strategies also improved to a certain extent.

Student 1: The data structure is the soul of our profession. I must learn well, but the relevant code, if I don't knock, is always wrong; you can use the current technology, with the heart (AI), the teacher-assigned topic of the past, and then you can find the corresponding code, can run, if still hard, to continue to change, in WeChat language, AI help me correct correction until it runs successfully. But sometimes the results did not meet the expectations. After the program, in addition to AI, I will ask other students and then study it myself.

Student 6: Encounter insoluble problems, of course, to avoid them. If there are any problems with the school network system, such as not listening to the class, the system not answering, or feeling the teacher quickly to me, I will avoid or put my desk mate out and let him answer. Or directly slip out, but after the program, I will think about it first and then ask others; After all, if we can't solve it today, we won't be able to solve it in the future.

Student 7, Like MOOC courses. I will listen to them at the beginning, but I will avoid brushing the courses because there are too many courses, and they are useless. After the group counseling, I will still brush the class but choose. If some classes I find helpful, I will also look good.

Student 5: If I don't know what can consult the teacher, maybe before, we were more ourselves to think, and then or is AI, simple AI is over, but now, we may consult the teacher, the big frame, and then go to everyone fine division of labor, do this thing well. I generally check the information and finally make a plan; I feel more relaxed.

Theme 3: Techno-stress

-What type of techno-stress bothers you the most? Please describe what impressed you most.

-What did you feel after the counseling? Is the Techno-stress that makes your headache somewhat relieved?

Through this theme, it was observed that students faced various techno-stress problems. While techno-learning pressure was identified as the primary issue, factors such as techno-overload and complexity also presented challenges for students. Given the pervasive nature of technology across industries, students acknowledged both the convenience it brought and maintained a skeptical, wait-and-see attitude toward potential future technological innovations and their impact on industries.

After group counseling, students were able to maintain a rational perspective on techno-stress and became adept at using technology to mitigate its effects.

Student 1: For example, we are starting to offer mixed online and offline courses due to the pressure of educational technology. I can't take both sides because online courses account for credit, and I must complete them through some technologies. After completion, we have to do the offline homework. These online video classes, tests, and so on make me feel pressure. Most importantly, I think the learning effect is not good,

Student 6: Technical uncertainty. Most of the software engineering I learned can be solved with AI, and then the labor takes time and effort and is not as good as AI, so I think this software engineering will be replaced, and my major is a living. In the age of AI, very few people code themselves, and even fewer encode. After the program, I was not so panicky, but this AI replacement trend will not change.

Student 4: I think technology is complex, is like this time you don't know, feel that a little complicated, is that thing, I take the brush always painting, but the line has been made, and I brush is not very good, that thing I made several hours to fix, three or four hours to fix, also do not very good. After counseling, I later checked the method on the Internet and then found a very simple way. I feel relieved; the mentality before was very difficult, but now I feel quite simple. It just feels like much easier than before.

In group interviews, words such as "feeling," "technology," "AI," "counseling," "teacher," "plan," and "problem" were frequently mentioned. It was observed that after the counseling programs, most participants faced problems proactively, actively sought solutions to techno-stress issues, such as independent learning, seeking help from others, and utilizing artificial intelligence. Some students remained concerned about technological changes but were willing to accept reality and attempt solutions rather than avoiding them.

2.3 Summary of results in phase 2

In this experiment, 20 first-year students from private universities were chosen to participate. In both the control and experimental groups, there were 10 students. Before the experiment, every student in the experimental group was assessed using the techno-stress scale (M=3.25, S.D.=0.48), post-test (M=2.60, S.D.=0.45), and follow-up (M=2.66, S.D.=0.54). At every stage, there was a notable difference in techno-stress between the experimental and control groups. F (5.66), $p \leq 0.01$. Furthermore, the experimental group had a Posttest Retest M.D. of -19.50, $p \leq 0.01$, Follow-up-Pretest M.D.=-17.50,$p \leq 0.01$; It can be seen that the experimental group can effectively reduce techno-stress and exhibit significant stability across time periods. The experimental group experienced a notable reduction in techno-stress following their participation in integrative group counseling program.

According to the study, students in the experimental group saw a marked decline in techno-stress once they completed the intensive group counseling program. Significant differences were observed in three dimensions between the experimental and control groups, specifically in the Period * group interaction, with F (4.96) and p=0.02. Furthermore, the experimental group before the test showed no significant difference compared to the control group. The post-test experimental group and the control group showed a significant difference with M.D.=-14.30 and $p \leq 0.01$, and the Follow-up experimental group and the control group had M.D.=-15.80, $p \leq 0.01$. The findings suggest that group counseling has a particular influence on decreasing techno-stress levels and ensuring stability over time.

Upon finishing the group counseling program, the experimental group showed an increase in their protective factor compared to before the program. Strength Posttest-Pretest MD=9.80,$p \leq 0.01$, Follow-up-Pretest MD=8.90,$p \leq 0.01$; Optimism Posttest-Pretest MD=6.10,$p \leq 0.01$, Follow-up-Pretest MD=6.30,$p \leq 0.01$; Self-regulation Posttest-Pretest MD=6.00.$p \leq 0.01$; Seeking help and problem-solving Posttest-Pretest MD=5.30.$p \leq 0.01$. Follow-up-Pretest MD=3.10,$p=0.02$; Fantasy and evasion Posttest-Pretest MD=-10.90.$p \leq 0.01$, Follow-up-Pretest MD=-9.60.$p \leq 0.01$.This indicates that group counseling has a certain effect on improving the protective factor of techno-stress and has time stability.

Qualitative research results indicated that students' adaptability significantly improved after the course ended. In terms of optimism, students experienced decreased anxiety and instead actively solved problems, with a significant increase in optimism and confidence. In terms of strength, students had clearer thinking and improved action abilities. They began actively learning to enhance their skills and work efficiency. Regarding resilience, students became calmer and demonstrated improved perseverance.

Secondly, students had more diverse coping strategies. In addition to actively solving problems by seeking help from others (such as teachers and peers), they also utilized the Internet and consulted professionals, especially artificial intelligence (AI and ChatGPT). In terms of self-regulation, they also adjusted their cognitive styles, practiced more, engaged in deeper thinking, and worked diligently to resolve issues, reducing negative coping strategies such as fantasy and avoidance.

Finally, the overall level of techno-stress decreased. Firstly, technical insecurity decreased, including reduced fear of being replaced, increased eagerness to learn new skills, and diminished feelings of being threatened by classmates. While the threat of rapid technological growth persisted, the sense of insecurity also decreased. In terms of technical learning pressure, the burden was also alleviated. However, technological complexity persisted, such as issues with usage and learning difficulties.

Regarding technological overload, the learning burden remained substantial, and technological intrusion reduced leisure time occasionally to complete work.

CHAPTER 5
DISCUSSION AND SUGGESTIONS

The research topic, "The impact of resilience and coping strategies on techno-stress and reducing Chinese students' techno-stress through integrative group counseling," consisted of 3 objectives. Objective 1 was to explore the impact of resilience(X_4) and coping strategies (X_8) on techno-stress(Y) among Chinese students. Objective 2 was to Develop an integrative group counseling program for reducing techno-stress(Y). Objective 3 was to compare the differences in scores with techno-stress(Y) and compare the changes in scores related to techno-stress(Y) between the experimental group and the control group after the program, both before and after attending the integrative group counseling program. The sample of this study was 305 Chinese students from China, a private university sample from Xi'an Eurasia University, and a public university sample from Xi'an Aeronautical Institute, using random stratified sampling. Data were collected using online scales. The scale with a passing time or obvious regularity was removed, and the final sample number was 280.

After obtained the ethical consideration approval from Xi 'an Eurasia University (approval number: OYKL2024-01), the researchers obtained the research permission letters from Xi' an Eurasia University and Xi'an Aeronautical Institute. The investigators then collected the data by themselves.

The study instrument consisted of four components, namely 1) respondent information, Social demographic, and background information, 2) Resilience(X_4) Scale, 3) Coping strategies, 4) Techno-stress(Y) Scale

The validity test of the whole scale was between 0.772 and 0.926.

Therefore, the results are summarized as follows:

1. Summary of the research results

    1.1 Summary of the results in Phase 1

    1.2 Summary of the results in Phase 2

2. Discussion

2.1 Discussion of the results of Phase 1

2.2 Discussion of the results of Phase 2

3. Suggestions

3.1 Suggestions on the theoretical perspective and practical significance

3.2 Suggestions for future research

Summary of Results

Summary of the results of Phase 1

The study results are derived based on the following objectives:

Objective 1: Investigate the impact of resilience and coping strategies on techno-stress among Chinese students.

The results showed that the proposed techno-stress(Y) theoretical model agrees with the empirical data.

Chinese students exhibited significant resilience (X_4) and employed various coping strategies (X8) to manage techno-stress (Y) with a statistical significance of p=0.05 (F=32.08, df=6,273). The impact of resilience (X_4) on techno-stress (Y) among Chinese students showed significant relationships at the 0.05 level, ranked in descending order: Optimism (X_3) demonstrated the strongest negative linear regression coefficient of -0.28, followed by Strength (X_2) with a coefficient of -0.21, while Tenacity (X_1) did not reach significance at the 0.05 level. This suggested that higher levels of Optimism (X_3) and Strength (X_2) were associated with lower levels of techno-stress (Y) among college students.

Similarly, coping strategies (X_8) employed by Chinese students to manage techno-stress (Y) showed significant relationships at the 0.05 level, ranked as follows: Fantasy and evasion (X_6) demonstrated the highest positive linear regression coefficient of 0.23, followed by Self-regulation (X_5) with a coefficient of 0.13, whereas Seeking help and problem-solving (X_7) showed the lowest negative coefficient of -0.41.

Summary of the results of Phase 2

Objective2. Explore an integrative group counseling program for reducing techno-stress.

Based on existing literature, an integrative group counseling intervention program was developed in Phase 1 to address techno-stress by enhancing the most influential predictive factors. This program integrates principles from Person-centered therapy, Cognitive Behavioral Therapy, Positive psychotherapy, Rational Emotive Behavior Therapy, and Reality therapy.

The integrative group counseling intervention program consisted of 8 sessions, each lasting 150 minutes, focused on alleviating techno-stress. Sessions 2-3 aimed to mitigate techno-stress through seeking help and problem-solving strategies. Sessions 4-5 targeted techno-stress reduction by minimizing fantasy and evasion while enhancing self-regulation. Sessions 6-7 aimed to enhance optimism and strength to further reduce techno-stress.

The developed program underwent evaluation by five psychology experts, including two from China and three from Thailand. Their feedback and evaluation results were detailed below:

The counseling program was revised and finalized based on expert feedback. The program comprises 8 sessions, each lasting 150 minutes. The experimental group underwent the program from March 2024 to April 2024, meeting twice a week over a span of 4 weeks. Sessions were held every Wednesday and Friday from 14:00 to 16:30.

Objective3. To study the difference in techno-stress between the intervention group receiving the integrative counseling program and the control group proceeding.

In terms of resilience, based on period paired comparisons, the experimental group showed significant improvements in Posttest-Pretest (M.D.=15.90, $p \leq 0.01$) and Follow-up-Pretest (M.D.=15.20, $p \leq 0.01$). These findings indicate a substantial increase in resilience following the counseling program. The intervention effect was not only significant immediately after the experiment but also maintained over time.

Regarding coping strategies, from a period-paired comparison perspective, the experimental group demonstrated significant increases in Posttest-Pretest (M.D.=-19.50, $p \leq 0.01$) and Follow-up-Pretest (M.D.=-17.50, $p \leq 0.01$). This suggests that coping strategies improved significantly after the counseling program and remained stable over time.

Turning to techno-stress, according to period-paired comparisons, the experimental group exhibited significant reductions in the posttest pretest (M.D.=-19.50, $p \leqslant 0.01$) and follow-up pretest (M.D.=-17.50, $p \leq 0.01$). This implies that techno-stress levels decreased significantly after the counseling program and remained stable over time.

In summary, during the post-test evaluations, the experimental group exhibited significant improvements in resilience and coping mechanisms compared to the control group. These findings indicate that participation in the counseling program significantly enhanced resilience and coping strategies, with the intervention effect remaining significant and consistent over time. Furthermore, the experimental group showed significant differences compared to the control group in post-test scores related to techno-stress, demonstrating a substantial reduction in techno-stress following the counseling program. This reduction was sustained over time, highlighting the stability of the intervention's impact.

Discussion

Discussion of the results of Phase 1

Objective 1: Investigate the impact of resilience and coping strategies on techno-stress among Chinese students.

In this study, most students focused on techno-stress (Y) and the psychological problems it caused. The negative correlation coefficients between resilience (X_4) and techno-stress (Y) among Chinese students ranged from 0.21 to 0.46 ($p < 0.05$). This indicates that individuals with higher levels of resilience (X_4) experience lower levels of techno-stress, aligning with expert research suggesting that resilience (X_4) is expected to enhance the benefits of ICT usage and alleviate drawbacks such as

technology overload and stress related to educational technology(Diller, 2016). indicating the lower techno-stress(Y) of the most optimistic and intense Chinese students. In this study, tenacity(X_1) was not significantly associated with techno-stress. This was inconsistent with other studies by experts(Yu et al., 2011), which have shown that tenacity(X_1) also plays a role when reducing techno-stress. Of course, this is also related to the source of the dependent variable of stress and student background, which should be considered in future research.

In addition, Chinese students had a negative correlation coefficient, indicating that, Interestingly, adopting more positive coping strategies (X_8) may paradoxically increase techno-stress (Y), such as self-regulation; this result was inconsistent with the research of scholars, scholars pointed out that self-regulation strategies such as goal-setting, time management, mindfulness, and boundary-setting could help individuals cope with technostress (Ragu-Nathan et al., 2008; Tarafdar et al., 2007). The reason for the inconsistent results may be due to the increased psychological burden associated with the application of these strategies; It is also highly likely that students are hesitant about the influence of their age, experience, or cognitive situation, resulting in insufficient mastery of self-regulation or failure to find a suitable way of self-regulation. So, in group counseling and subsequent research, the emphasis is on guiding students to use effective self-regulation methods to reduce techno-stress.

The findings revealed a strong negative relationship between seeking assistance and technical stress, as well as a strong positive relationship between fantasy and avoidance and techno-stress in different coping strategies (Sun et al., 2020) suggested that turning to social support in times of crisis is typically the best way to cope with stress while relying on fantasy and avoidance tactics was linked to higher levels of techno-stress (Y). This result was also consistent with researchers who found that positive emotional responses and coping strategies were significantly less under stressful situations, indicating a lower degree of internalization of the problem, and people generally chose to avoid solving the problem (Jackson & Warren, 2000).

This study was to understand how participants deal with obstacles they face in academic learning or adjusting to life based on qualitative interviews. Then, the summary of the identified response strategies is as follows: seeking social support and artificial intelligence, engaging in physical exercise, actively rebuilding, and distracting attention. Qualitative personal interview results suggest that, like other studies (Chew et al., 2020), It was advisable to promote coping strategies such as seeking social support, positive thinking, and problem-solving techniques(Anwar et al., 2020). In social support, this study found that students' family environment could affect students' techno-stress, and family members such as siblings could create an atmosphere of peer learning. A student mentioned, "My sister also helps me with computer knowledge." Particularly in interviews, students noted that artificial intelligence (AI) is increasingly explored as a potential solution to alleviate technological pressure. They highlighted its capabilities to enhance efficiency, automate tasks, and improve decision-making processes. For instance, a student indicated, "I will ask AI for help, and then I will try to understand this code." This was consistent with the research of Dietzmann and Duan (2022), which suggested that information overload should be reduced: Artificial intelligence algorithms can filter and prioritize information, reducing individual cognitive load. This helped manage information overload, which was a common source of techno-stress. Verganti et al. (2020) suggested that AI-driven decision support systems could help make complex decisions, thereby alleviating decision fatigue and pressure related to information ambiguity.

Discussion of the results of Phase 2

Objective2. Explore an integrative group counseling program for reducing techno-stress.

This study developed an integrated group program for reducing techno-stress and offers a holistic approach to addressing the complex challenges posed by technology in modern life. The findings aligned with the research conducted by Munir et al. (2021), who have shown that group counseling can effectively reduce techno-stress.

In this study, Person-centered therapy, Cognitive Behavioral Therapy, Positive psychotherapy, Rational Emotive Behavior Therapy, and Reality therapy

interventions were employed to help individuals take control of their technology use, reduce techno-stress, boost their well-being, and enhance their quality of life in an increasingly digital world. Some studies had proposed that cognitive and behavioral therapy were significantly effective for stress reduction, addressing the individual's thought patterns. Each person's way of thinking was influenced by their unique reasoning and perspective. (Sulaiman et al., 2017).In addition, some studies suggested that stress was viewed in a positive way. One scientific method that has proved to be very effective in generating positive change is positive psychology(Seligman, 2002) and its positive techniques(Calvo & Peters, 2012). Positive psychology believed individuals could utilize their experiences to enhance their well-being and personal development. Similarly, positive technology involved using technology scientifically to enhance personal experiences(Riva et al., 2012). The quality of personal experience was perceived in three main aspects: pleasure, happiness, and social connections, with the use of technology playing a key role in enhancing these experiences. By harmoniously blending the tenets of positive psychology with positive technology in specifically curated experimental setups, the burden of techno-stress could be alleviated and reduced.

Implementing such a program required careful planning, stakeholder involvement, and ongoing evaluation to ensure it met the diverse needs of participants and effectively reduced techno-stress over the long term. Research showed increasing interest in developing educational programs such as emotion regulation and academic counseling, emphasizing the importance of designing activities that helped acquire social-emotional abilities and focusing more attention on the emotional dimensions. (Morales Rodriguez, 2017) and stress management by promoting mindfulness was emphasized. (Getachew, 2020; Valero et al., 2020). Recent studies indicated a rise in the demand for psychological counseling, showing that it could aid in keeping students in college and equipping them with the necessary skills to reach their academic and personal objectives effectively(Turner & Berry, 2000).

Objective3. To study the difference in techno-stress between the intervention group receiving the integrative counseling program and the control group proceeding.

The results indicated a notable distinction between the experimental and control groups, and resilience and coping strategies were significantly improved after intervention, while techno-stress was significantly reduced.

It was observed that the intervention of the experimental group to reduce techno-stress was significantly effective, which aligned with the study's findings by Chang et al. (2004), which investigated the impact of group counseling program focused on mindfulness and stress management techniques on reducing techno-stress among college students. The results showed that after intervention, the symptoms of techno-stress were significantly reduced, and coping strategies were improved. In addition, the resilience and coping strategies of the experimental group were significantly improved, It was indicated that through effective and scientifically grounded training in coping strategies and resilience methods, techno-stress could be reduced. This has been studied by experts who have also proposed exploring the effectiveness of group counseling programs in reducing student techno-stress (Park & Kim, 2011; Roux & Philippot, 2020). The intervention aimed to improve digital literacy, promote healthy technology usage behavior, and thereby reduce stress levels.

In terms of resilience, this study aimed to assist students in utilizing their optimism and strength to address techno-stress and challenges encountered in life and studies through psychological counseling. If a person felt lost or unsure about their abilities, researchers could develop new solutions, aligning with research conducted by others(Munir et al., 2021). Therefore, it was possible to quickly alleviate techno-stress by having consultations focused on solutions, such as Positive psychotherapy and Cognitive Behavioral Therapy (CBT), to enhance optimism and strength, which was consistent with research by scholars. Scholars believed that people needed to assess their level of techno-stress and experience resilience through optimism and strong emotions; they also needed to reduce techno-stress by identifying and finding ways to seek help from others and reducing fantasy and bias. Optimism was a highly correlated variable recommended for psychological intervention programs(Xia & Duan, 2020a). Studies by other scholars also showed that In terms of resilience protection factors, in

some studies, through mindfulness counseling programs, through recognition and acceptance, individuals learned to no longer rely on avoidance or suppressing emotional responses, thus reducing stress (Meischke et al., 2018). as well as achieving goals research showed to reduce techno-stress effectively.

Regarding coping strategies, the research results showed that the students were proficient in using Chat GPT, AI, and other modern intelligent means to solve techno-stress difficulties. The students made it clear that they encountered significant techno-stress in their education, and they tried to use modern technology to address this issue, such as artificial intelligence and Chat GPT. This was consistent with the research by Alasadi and Baiz (2023), who pointed out that modern technology was a way to solve the problem of techno-stress, but students in the experiment or group interviews pointed out that intelligent ways could not replace other ways, such as peer help or teachers help, this may be due to the technology update iteration also need process, students expressed that after counseling “In addition to AI, I will ask other students and then study it myself”. this does not rule out the possibility that students' control and processing of AI information ability is not strong, so the negative response strategy. Of course, it is also possible that artificial intelligence technology still needs to be updated and iterated to meet human needs.

The study aimed to use these findings to address contemporary issues related to technological stress, help Chinese students enhance resilience, and improve coping strategies. The experimental group had experienced a significant reduction in techno-stress, indicating the effectiveness of the counseling program. This finding was consistent with results observed by other researchers. The researchers had planned to conduct a group counseling study for students to recognize behaviors that required coping with symptoms, evaluate participants' techno-stress levels, and teach them how to employ successful coping strategies for managing daily stress(La Torre et al., 2019). This study showed that in terms of Chinese students, the main techno-stress was relatively concentrated and targeted, mainly derived from education or other techno-stress around education; Of course, in qualitative group interviews, The students added

their own changes after the counseling program, and they were more willing to face it optimistically. They stated, "I am more confident in solving these problems and think I will be more active." instead of avoiding dealing with problems. "After counseling, I first think about how to handle it myself and then ask others; after all, if I can't solve the problem today, I won't solve it in the future." Regarding techno-stress, it was found that students could perceive various forms of techno-stress and had diverse concerns about entering society with increasing techno-stress in the future. For example, students expressed that techno-complexity posed a significant challenge. Students expressed, “I think technology is complex; it is like our software is also being updated this time.” Techno-uncertainty also raised student concerns about the future: “I think Software engineering-related majors will be replaced.”

The growth of Chinese students entering society coincided with improving the acting skills of scholars (Atanasoff & Venable, 2017; Nisafani et al., 2020). who believed that other techno-stress factors would increase, and the focus shifted to a certain extent, such as techno-overload, techno-invasion often produced by workplace people, etc. Future research can study the changes in techno-stress factors for Chinese students entering the workplace or the techno-stress of different people in different occupations. The researcher believes that they will be different because of different identity backgrounds.

Suggestions

Suggestions for theoretical perspective and practical implication

1.1 For a theoretical perspective

1) The study analyzed thoroughly. It uncovered the significant impact of resilience and coping strategies in reducing techno-stress. These findings to understand how Chinese students face growing technical challenges provide an important perspective, and higher education institutions develop effective mental health and happiness support strategies to provide data support, especially in the context of an increasingly popular digital age, understanding and improving these factors to promote students' mental health and learning efficiency is critical.

2) Coping strategies, as a mediating variable, could influence resilience(X_4), techno-stress(Y) factors, and coping strategies, providing valuable information for developing educational interventions.

3) This study reflected on the general trend of using AI and ChatGPT intelligent means to solve the techno-stress and provide theoretical references for the development of artificial intelligence in educational technology.

4) The results of this study are of reference and reference significance for other techno-stress groups of age and background.

1.2 For the practical implication

1) Chinese students, as the sample population of this study, changed coping strategies in a technically stressful environment to achieve controlled outcomes. For example, when facing the pressure of educational technology, Chinese students did not necessarily adopt a single coping strategy or resilience method. Instead, they employed corresponding strategies or resilience methods based on the technical challenges, adjusting continuously as the difficulty of the tasks increased or decreased during the processing phase. Chinese students strive to develop their positive coping style, they have better self-awareness characteristics and are willing to accept help from them or other channels.

2) This study found that there was a significant negative relationship between optimism, strength, and techno-stress, which had a significant predictive value for relieving techno-stress. This finding means that by fostering students' optimism and power thinking, they can effectively enhance their resilience to meet better the challenges posed by technology.

3) Based on research results and conclusions, research with optimism, strength resilience factor, and positive psychology to reduce techno-stress is an expanded theoretical understanding. For practical significance, this study found that in China's educational background, getting students out of bondage and seeking good solutions through positive attitudes and behaviors is the key to reducing techno-stress.

4) Techno-stress in students' education is one of the important factors affecting techno-stress. Teachers should pay attention to how Chinese students use the existing technology to learn and find out why students escape and delay to reduce the techno-stress of Chinese students. University administrators should develop policies to support counselors in doing so. University administrators should support undergraduate prevention / techno-stress reduction courses, including but not limited to counseling-related and how-to-educate technology practice courses.

Suggestions for future research

1) Future research should further explore students' resilience and coping strategies in different settings and how they work together to reduce techno-stress.

2) Considering the scientific and comprehensive nature of the study, future longitudinal studies can be designed to assess study variables with the age of participants, and multilevel studies can be conducted by adding other study variables. In this study, resilience had an explanatory effect on reducing techno-stress (Y), while some other situational factors might have had a better explanatory effect on reducing techno-stress (Y). Therefore, other situational factors, such as family and peer support, were further investigated (Morales-Rodríguez et al., 2019).

3) According to the qualitative research results, there were differences in techno-stress resilience and coping strategies between public and private Chinese students. Subsequent comparative analysis and research can be conducted on the two different types of Chinese students.

4) It cannot be ruled out whether college entrance examination scores will affect students' resilience and coping strategies; Therefore, in order to extend the model to a wider population, it is recommended to conduct further research, test the equivalence of the model in different parts and situations, and look for other possible students, such as private universities with high admission scores.

REFERENCES

Abramowitz, J. S. (2013). The practice of exposure therapy: Relevance of cognitive-behavioral theory and extinction theory. *Behavior therapy*, *44*(4), 548-558.

Alasadi, E. A., & Baiz, C. R. (2023). Generative AI in education and research: Opportunities, concerns, and solutions. *Journal of Chemical Education*, *100*(8), 2965-2971.

AlAteeq, D. A., Aljhani, S., & AlEesa, D. (2020). Perceived stress among students in virtual classrooms during the COVID-19 outbreak in KSA. *Journal of Taibah University Medical Sciences*, *15*(5), 398-403.

Allen, I. E., & Seaman, C. A. (2007). Likert scales and data analyses. *Quality progress*, *40*(7), 64-65.

Andrews, G., Tennant, C., Hewson, D. M., & Vaillant, G. E. (1978). Life event stress, social support, coping style, and risk of psychological impairment. *The Journal of nervous and mental disease*, *166*(5), 307-316.

Antonovsky, A. (1979). Health, stress, and coping. *New perspectives on mental and physical well-being*, 12-37.

Antonovsky, A. (1998). The sense of coherence: an historical and future perspective. Anwar, A., Malik, M., Raees, V., & Anwar, A. (2020). Role of mass media and public health communications in the COVID-19 pandemic. *Cureus*, *12*(9).

Arnetz, B. B., & Wiholm, C. (1997). Technological stress: Psychophysiological symptoms in modern offices. *Journal of psychosomatic research*, *43*(1), 35-42.

Atanasoff, L., & Venable, M. A. (2017). Technostress: Implications for adults in the workforce. *The career development quarterly*, *65*(4), 326-338.

Avey, J. B., Luthans, F., & Jensen, S. M. (2009). Psychological capital: A positive resource for combating employee stress and turnover. *Human resource management*, *48*(5), 677-693.

Avey, J. B., Reichard, R. J., Luthans, F., & Mhatre, K. H. (2011). Meta‐analysis of the impact of positive psychological capital on employee attitudes, behaviors, and

performance. *Human resource development quarterly*, *22*(2), 127-152.

Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS quarterly*, 831-858.

Baloch, G. M., Kamaludin, K., Chinna, K., Sundarasen, S., Nurunnabi, M., Khoshaim, H. B., Baloch, L. G. (2021). Coping with COVID-19: The strategies adapted by Pakistani students to overcome implications. *International journal of environmental research and public health*, *18*(4), 1799.

Baloran, E. T. (2020). Knowledge, attitudes, anxiety, and coping strategies of students during COVID-19 pandemic. *Journal of loss and trauma*, *25*(8), 635-642.

Bataineh, M. Z. (2013). Academic stress among undergraduate students: the case of education faculty at King Saud University. *International interdisciplinary journal of education*, *1*(1033), 1-7.

Beaudry, A., & Pinsonneault, A. (2005). Understanding user responses to information technology: A coping model of user adaptation. *MIS quarterly*, 493-524.

Beck, A. T. (1963). Thinking and depression: I. Idiosyncratic content and cognitive distortions. *Archives of general psychiatry*, *9*(4), 324-333.

Beck, A. T. (1964). Thinking and depression: II. Theory and therapy. *Archives of general psychiatry*, *10*(6), 561-571.

Begun, A. L. (1993). Human behavior and the social environment: The vulnerability, risk, and resilience model. *Journal of Social Work Education*, *29*(1), 26-35.

Behling, O., & Law, K. S. (2000). *Translating questionnaires and other research instruments: Problems and solutions* (Vol. 133). sage.

Bennett-Levy, J., Westbrook, D., Fennell, M., Cooper, M., Rouf, K., & Hackmann, A. (2004). Behavioural experiments: Historical and conceptual underpinnings. *Oxford guide to behavioural experiments in cognitive therapy*, 1-20.

Berg, K. O., Maki, B. E., Williams, J. I., Holliday, P. J., & Wood-Dauphinee, S. L. (1992). Clinical and laboratory measures of postural balance in an elderly population. *Archives of physical medicine and rehabilitation*, *73*(11), 1073-1080.

Berg, R. C., Landreth, G. L., & Fall, K. A. (2017). *Group counseling: Concepts and*

procedures. Routledge.

Berkes, F., & Ross, H. (2013). Community resilience: toward an integrated approach. *Society & natural resources*, *26*(1), 5-20.

Bernard, M. E. (2018). Albert Ellis Coaches Problems of Daily Living. *Coaching for Rational Living: Theory, Techniques and Applications*, 25-49.

Bichteler, J. (1987). Technostress in libraries: causes, effects and solutions. *The electronic library*, *5*(5), 282-287.

Billings, A. G., & Moos, R. H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of behavioral medicine*, *4*(2), 139-157.

Binder, P.-E., Holgersen, H., & Nielsen, G. H. s. (2010). What is a “good outcome” in psychotherapy? A qualitative exploration of former patients' point of view. *Psychotherapy Research*, *20*(3), 285-294.

Bohart, A. C., & Watson, J. C. (2011). Person-centered psychotherapy and related experiential approaches.

Bonanno, G. A. (2008). Loss, trauma, and human resilience: have we underestimated the human capacity to thrive after extremely aversive events?

Boyden, J., & Mann, G. (2005). Children’s risk, resilience, and coping in extreme situations. *Handbook for working with children and youth: Pathways to resilience across cultures and contexts*, *3*, 26.

Bozarth, J. D., Zimring, F. M., & Tausch, R. (2002). Client-centered therapy: The evolution of a revolution.

Brod, C. (1982). Managing technostress: optimizing the use of computer technology. *Personnel Journal*, *61*(10), 753-757.

Brod, C. (1984). Technostress: The human cost of the computer revolution. *(No Title)*. Brodley, B. T. (1996). Empathic understanding and feelings in client-centered therapy. *The Person-Centered Journal*, *3*(1), 22-30.

Brooker, A., Corrin, L., De Barba, P., Lodge, J., & Kennedy, G. (2018). A tale of two MOOCs: How student motivation and participation predict learning outcomes in

different MOOCs. *Australasian Journal of Educational Technology*, *34*(1).

Brown, L., Cohen, B., Costello, R., Brazhnik, O., & Galis, Z. S. (2023). Next steps: Operationalizing resilience research. *Stress and Health*.

Bryan, C., O'Shea, D., & MacIntyre, T. E. (2018). The what, how, where and when of resilience as a dynamic, episodic, self-regulating system: A response to Hill et al.(2018).

Cain, D. J. (2002). *Humanistic psychotherapies: Handbook of research and practice*. American Psychological Association.

Cain, D. J. (2010). *Person-centered psychotherapies*. American Psychological Association.

Calvo, R. A., & Peters, D. (2012). Positive computing: technology for a wiser world. *Interactions*, *19*(4), 28-31.

Campbell-Sills, L., Cohan, S. L., & Stein, M. B. (2006). Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. *Behaviour research and therapy*, *44*(4), 585-599.

Cant, S. (2018). Hysteresis, social congestion and debt: towards a sociology of mental health disorders in undergraduates. *Social Theory & Health*, *16*, 311-325.

Carver, C. S. (1997). You want to measure coping but your protocol'too long: Consider the brief cope. *International journal of behavioral medicine*, *4*(1), 92-100.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: a theoretically based approach. *Journal of personality and social psychology*, *56*(2), 267.

Cataldi, S. (2018). A proposal for the analysis of the relational dimension in the interview techniques: a pilot study on in-depth interviews and focus groups. *Quality & quantity*, *52*, 295-312.

Cederblad, M., Dahlin, L., Hagnell, O., & Hansson, K. (1995). Coping with life span crises in a group at risk of mental and behavioral disorders: from the Lundby study. *Acta Psychiatrica Scandinavica*, *91*(5), 322-330.

Chang, V. Y., Palesh, O., Caldwell, R., Glasgow, N., Abramson, M., Luskin, F., . . .

Koopman, C. (2004). The effects of a mindfulness-based stress reduction program on stress, mindfulness self-efficacy, and positive states of mind. *Stress and Health: Journal of the International Society for the Investigation of Stress*, *20*(3), 141-147.

Chen, C. (2016). The role of resilience and coping styles in subjective well-being among Chinese university students. *The Asia-Pacific Education Researcher*, *25*, 377-387.

Chen, H., Xu, J., Mao, Y., Sun, L., Sun, Y., & Zhou, Y. (2019). Positive coping and resilience as mediators between negative symptoms and disability among patients with schizophrenia. *Frontiers in Psychiatry*, *10*, 641.

Chen, Y., McCabe, B., & Hyatt, D. (2017). Impact of individual resilience and safety climate on safety performance and psychological stress of construction workers: A case study of the Ontario construction industry. *Journal of safety research*, *61*, 167-176.

Chew, Q. H., Chia, F. L.-A., Ng, W. K., Lee, W. C. I., Tan, P. L. L., Wong, C. S., . . . Huey, C. W. T. (2020). Perceived stress, stigma, traumatic stress levels and coping responses amongst residents in training across multiple specialties during COVID-19 pandemic—A longitudinal study. *International journal of environmental research and public health*, *17*(18), 6572.

Christensen, T. M., & Gray, N. D. (2002). The application of reality therapy and choice theory in relationship counseling, an interview with Robert Wubbolding. *The Family Journal*, *10*(2), 244-248.

Church, S. P., Dunn, M., & Prokopy, L. S. (2019). Benefits to qualitative data quality with multiple coders: Two case studies in multi-coder data analysis. *Journal of Rural Social Sciences*, *34*(1), 2.

Clark, D. A. (2013). Cognitive restructuring. *The Wiley handbook of cognitive behavioral therapy*, 1-22.

Clark, D. A., Beck, A. T., Alford, B. A., Bieling, P. J., & Segal, Z. V. (2000). Scientific foundations of cognitive theory and therapy of depression. In: Springer.

Cohn, M. A., Fredrickson, B. L., Brown, S. L., Mikels, J. A., & Conway, A. M. (2009). Happiness unpacked: positive emotions increase life satisfaction by building

resilience. *Emotion*, *9*(3), 361.

Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor‐Davidson resilience scale (CD‐RISC). *Depression and anxiety*, *18*(2), 76-82.

Contreras, M., de León, A. M., Martínez, E., Peña, E. M., Marques, L., & Gallegos, J. (2017). Psychopathological symptoms and psychological wellbeing in Mexican undergraduate students. *International journal of social science studies*, *5*(6), 30.

Cooper, M. (2007). Humanizing psychotherapy. *Journal of Contemporary Psychotherapy*, *37*, 11-16.

Corey, G. (2012). *Theory and practice of counseling and psychotherapy*. Cengage learning.

Corey, G. (2015). *Theory and practice of group counseling*. Cengage Learning.

Corey, G. (2018). *The art of integrative counseling*. John Wiley & Sons.

Corey, G. (2023). *Theory & practice of group counseling*. Cengage.

Corey, M. S., Corey, G., & Corey, C. (2018). *Groups: Process and practice*. Cengage Learning.

Craparo, G., Magnano, P., Zapparrata, M. V., Gori, A., Costanzo, G., Pace, U., & Pellerone, M. (2018). Coping, attachment style and resilience: the mediating role of alexithymia. *Mediterranean Journal of Clinical Psychology*, *6*(1).

Crawford, C., Brown, L. L., Costello, R. B., & Deuster, P. A. (2022). Select dietary supplement ingredients for preserving and protecting the immune system in healthy individuals: A systematic review. *Nutrients*, *14*(21), 4604.

Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage publications.

Cuijpers, P., Van Straten, A., Andersson, G., & Van Oppen, P. (2008). Psychotherapy for depression in adults: a meta-analysis of comparative outcome studies. *Journal of Consulting and Clinical Psychology*, *76*(6), pp. 342-352.

Currie, C., Zanotti, C., Morgan, A., Currie, D., De Looze, M., Roberts, C., Barnekow, V. (2009). Social determinants of health and well-being among young people. *Health*

Behaviour in School-aged Children (HBSC) study: international report from the, *2010*, 271.

Dami, Z. A., Setiawan, I., Sudarmanto, G., & Lu, Y. (2019). Effectiveness of group counseling on depression, anxiety, stress and components of spiritual intelligence in student. *International Journal of Scientific & Technology Research*, *8*(9), pp. 236-243.

Danger, I. C. I., Records, I. F. C., Director, I., Trainees, I., Compensation-Salary, V., Malpractice, V., & Insurance, L. (2020). Standards for University and College Counseling Services.

Dastbaaz, A., Yeganehfarzand, S. H., Azkhosh, M., Shoaee, F., & Salehi, M. (2014). The effect of group counseling.

Daudi, E., Lyakurwa, S. E., & Amani, J. (2023). University Students' Attitudes Toward Seeking Psychological Help for Psycho-Social Problems in Two Selected Public Universities in Tanzania: A Mixed Methods Study. *SAGE Open*, *13*(2), 21582440231179200. https://doi.org/10.1177/21582440231179200

David, D., Schnur, J., & Birk, J. (2004). BRIEF REPORT Functional and dysfunctional feelings in Ellis' cognitive theory of emotion: An empirical analysis. *Cognition and Emotion*, *18*(6), 869-880.

David, D., Szentagotai, A., Eva, K., & Macavei, B. (2005). A synopsis of rational-emotive behavior therapy (REBT); fundamental and applied research. *Journal of rational-emotive and cognitive-behavior therapy*, *23*, 175-221.

Dekker, I., De Jong, E. M., Schippers, M. C., De Bruijn-Smolders, M., Alexiou, A., & Giesbers, B. (2020). Optimizing students' mental health and academic performance: AI-enhanced life crafting. *Frontiers in Psychology*, *11*, 1063.

DeLucia-Waack, J. L., & Gellman, R. A. (2007). The efficacy of using music in children of divorce groups: Impact on anxiety, depression, and irrational beliefs about divorce. *Group Dynamics: Theory, Research, and Practice*, *11*(4), 272.

Derks, D., Van Mierlo, H., & Schmitz, E. B. (2014). A diary study on work-related smartphone use, psychological detachment and exhaustion: examining the role of

the perceived segmentation norm. *Journal of occupational health psychology*, *19*(1), 74.

Dietzmann, C., & Duan, Y. (2022). Artificial intelligence for managerial information processing and decision-making in the era of information overload.

Diller, H. (2016). *Life is tough so you gotta be rough: How resilience impacts employees' attitude towards ICT use*.

Dilshad, R. M., & Latif, M. I. (2013). Focus group interview as a tool for qualitative research: An analysis. *Pakistan Journal of Social Sciences (PJSS)*, *33*(1).

Dodhia, R. M. (2005). A review of applied multiple regression/correlation analysis for the behavioral sciences. *Journal of Educational and Behavioral Statistics*, *30*(2), 227-229.

Doll, W. J., & Torkzadeh, G. (1989). A discrepancy model of end-user computing involvement. *Management science*, *35*(10), 1151-1171.

Dryden, W., & Branch, R. (2011). *The CBT handbook*. Sage.

Dumont, M., & Provost, M. A. (1999). Resilience in adolescents: Protective role of social I am running a few minutes late; my previous meeting is running over.
support, coping strategies, self-esteem, and social activities on experience of stress and depression. *Journal of youth and adolescence*, *28*(3), 343-363.

Eisenberg, N., Fabes, R. A., Bernzweig, J., Karbon, M., Poulin, R., & Hanish, L. (1993). The relations of emotionality and regulation to preschoolers' social skills and sociometric status. *Child development*, *64*(5), 1418-1438.

Eisenberg, N., Fabes, R. A., Karbon, M., Murphy, B. C., Wosinski, M., Polazzi, L., . . . Juhnke, C. (1996). The relations of children's dispositional prosocial behavior to emotionality, regulation, and social functioning. *Child development*, *67*(3), 974-992.

Ellis, A. (1962). Reason and emotion in psychotherapy.

Ellis, A. (1996). *Better, deeper, and more enduring brief therapy: The rational emotive behavior therapy approach*. Psychology Press.

Ellis, A. (2001). *Feeling better, getting better, staying better: Profound self-help therapy*

for your emotions. Impact Publishers.

Ellis, A. (2013). Rational emotive therapy. In *Albert Ellis Revisited* (pp. 25-37). Routledge.

Elmer, T., Mepham, K., & Stadtfeld, C. (2020). Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. *Plos one*, *15*(7), e0236337.

Eppler, M. J., & Mengis, J. (2008). The Concept of Information Overload-A Review of Literature from Organization Science, Accounting, Marketing, MIS, and Related

Disciplines (2004) The Information Society: An International Journal, 20 (5), 2004, pp. 1–20. *Kommunikationsmanagement im Wandel: Beiträge aus 10 Jahren= mcminstitute*, 271-305.

Evans, L. D., Kouros, C., Frankel, S. A., McCauley, E., Diamond, G. S., Schloredt, K. A., & Garber, J. (2015). Longitudinal relations between stress and depressive symptoms in youth: Coping as a mediator. *Journal of abnormal child psychology*, *43*, 355-368.

Fang , J., Wang， Y, T., Xiao。 Sh, Y., M., Z., H., J., & Hu， M. (2018). Reliability and Validity Testing of the Simple Coping Style Questionnaire in Adolescents. *Chinese Journal of Clinical Psychology*, *26*(05), 905-909.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior research methods*, *41*(4), 1149-1160.

Feder, A., Nestler, E. J., Westphal, M., & Charney, D. S. (2010). Psychobiological mechanisms of resilience to stress.

Fitzgerald, N. (2021). The influence of technostress on perceived academic performance: A study on university students in Sweden. In.

Flach, F. (1988). *Resilience: Discovering a new strength at times of stress*. Ballantine Books.

Flavin, M. (2016). Technology-enhanced learning and higher education. *Oxford Review of Economic Policy*, *32*(4), 632-645.

Fleck, R., Cox, A. L., & Robison, R. A. (2015). Balancing boundaries: Using multiple devices to manage work-life balance. Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems,

Folkman, S. (2012). Stress, coping, and hope. In *Psychological aspects of cancer* (pp. 119-127). Springer.

Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of health and social behavior*, 219-239.

Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: study of emotion and coping during three stages of a college examination. *Journal of personality and social psychology*, *48*(1), 150.

Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annu. Rev. Psychol.*, *55*, 745-774.

Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological science*, *13*(2), 172-175.

Friborg, O., Hjemdal, O., Rosenvinge, J. H., & Martinussen, M. (2003). A new rating scale for adult resilience: what are the central protective resources behind healthy adjustment? *International journal of methods in psychiatric research*, *12*(2), 65-76.

Fuglseth, A. M., & Sørebø, Ø. (2014). The effects of technostress within the context of I am running a few minutes late; my previous meeting is running over.

employee use of ICT. *Computers in Human Behavior*, *40*, 161-170.

Funk, J. B., Baldacci, H. B., Pasold, T., & Baumgardner, J. (2004). Violence exposure in real-life, video games, television, movies, and the internet: is there desensitization? *Journal of adolescence*, *27*(1), 23-39.

Gaeta, M. L., Gaeta, L., & Rodriguez, M. d. S. (2021). The impact of COVID-19 home confinement on Mexican university students: Emotions, coping strategies, and self-regulated learning. *Frontiers in Psychology*, *12*, 642823.

Gan, Y., Liu, Y., & Zhang, Y. (2004). Flexible coping responses to severe acute respiratory syndrome-related and daily life stressful events. *Asian Journal of Social*

Psychology, *7*(1), 55-66.

Gaudioso, F., Turel, O., & Galimberti, C. (2016). Explaining work exhaustion from a coping theory perspective: Roles of techno-stressors and technology-specific coping strategies. *Studies in health technology and informatics*, *219*, 14-20.

Gaudioso, F., Turel, O., & Galimberti, C. (2017). The mediating roles of strain facets and coping strategies in translating techno-stressors into adverse job outcomes. *Computers in Human Behavior*, *69*, 189-196.

Gazda, G. M. (1969). Group counseling: A developmental approach. *Canadian Journal of Counselling and Psychotherapy*, *3*(4).

Gazda, G. M., Duncan, J. A., & Meadows, M. E. (1967). Group counseling and group procedures: Report of a survey. *Counselor Education and Supervision*.

Gazda, G. M., Ginter, E. J., & Horne, A. M. (2001). *Group counseling and group psychotherapy: Theory and application*. Allyn & Bacon.

Geller, S. M., & Greenberg, L. S. (2002). Therapeutic Presence: therapists' experience of presence in the psychotherapy encounter/Therapeutische Präsenz: erfahrungen von Therapeuten mit Präsenz in der psychotherapeutischen Begegnung/La Presencia Terapéutica: la Experiencia de la Presencia que Viven los Terapeutas en el Encuentro Psicoterapéutico. *Person-Centered & Experiential Psychotherapies*, *1*(1-2), 71-86.

Geller, S. M., Greenberg, L. S., & Watson, J. C. (2010). Therapist and client perceptions of therapeutic presence: The development of a measure. *Psychotherapy Research*, *20*(5), 599-610.

Gerber, M., Kalak, N., Lemola, S., Clough, P. J., Perry, J. L., Pühse, U., . . . Brand, S. (2013). Are adolescents with high mental toughness levels more resilient against stress? *Stress and Health*, *29*(2), 164-171.

Gerr, F., Monteilh, C. P., & Marcus, M. (2006). Keyboard use and musculoskeletal outcomes among computer users. *Journal of occupational rehabilitation*, *16*, 259-271.

Getachew, A. (2020). Assessment of guidance and counselling service centre in higher

education institutions: A qualitative research. *Int J Sch Cogn Psychol*, *7*(2), 1-6.

Gladding, S. T. (1994). *Effective Group Counseling*. ERIC.

Goff, A.-M. (2011). Stressors, academic performance, and learned resourcefulness in baccalaureate nursing students. *International journal of nursing education scholarship*, *8*(1).

Goodall, A. (2015). Connected Communities Strategy: Interim Evaluation Report. *Sydney, NSW: New South Wales Department of Education*.

Gottlieb, B. H., & Bergen, A. E. (2010). Social support concepts and measures. *Journal of psychosomatic research*, *69*(5), 511-520.

Grafanaki, S., & McLeod, J. (2002). Experiential congruence: Qualitative analysis of client and counsellor narrative accounts of significant events in time-limited person-centred therapy. *Counselling and Psychotheraphy Research*, *2*(1), 20-32.

Grant, A. M., Curtayne, L., & Burton, G. (2009). Executive coaching enhances goal attainment, resilience and workplace well-being: A randomised controlled study. *The Journal of Positive Psychology*, *4*(5), 396-407.

Gualano, M. R., Lo Moro, G., Voglino, G., Bert, F., & Siliquini, R. (2020). Effects of Covid-19 lockdown on mental health and sleep disturbances in Italy. *International journal of environmental research and public health*, *17*(13), 4779.

Guang-rong, J., & Ming, W. (2003). A study on help-seeking hropensity of Chinese undergraduates. *Chinese Journal of Clinical Psychology*.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research*, *2*(163-194), 105.

Guest, G., Namey, E., & McKenna, K. (2017). How many focus groups are enough? Building an evidence base for nonprobability sample sizes. *Field methods*, *29*(1), 3-22.

Guida, J. L., Alfini, A., Lee, K. C., Miller, C., Riscuta, G., Rusch, H. L., . . . Dixit, S. (2023). Integrating sleep health into resilience research. *Stress and Health*.

Gulliver, A., Griffiths, K. M., & Christensen, H. (2010). Perceived barriers and facilitators

to mental health help-seeking in young people: a systematic review. *BMC psychiatry*, *10*(1), 1-9.

Gurvich, C., Thomas, N., Thomas, E. H., Hudaib, A.-R., Sood, L., Fabiatos, K., . . . Sharp, G. (2021). Coping styles and mental health in response to societal changes during the COVID-19 pandemic. *International Journal of Social Psychiatry*, *67*(5), 540-549.

Hales, R. E., & Yudofsky, S. C. (2003). The American Psychiatric Publishing textbook of clinical psychiatry. *(No Title)*.

Hawley, D. R., & DeHaan, L. (1996). Toward a definition of family resilience: Integrating life‐span and family perspectives. *Family process*, *35*(3), 283-298.

Helmreich, I., Kunzler, A., Chmitorz, A., König, J., Binder, H., Wessa, M., & Lieb, K. (2017). Psychological interventions for resilience enhancement in adults. *The Cochrane database of systematic reviews*, *2017*(2).

Hill, C. E., Knox, S., Thompson, B. J., Williams, E. N., Hess, S. A., & Ladany, N. (2005). Consensual qualitative research: An update. *Journal of counseling psychology*, *52*(2), 196.

Hjemdal, O. (2007). Measuring protective factors: The development of two resilience scales in Norway. *Child and Adolescent psychiatric clinics of North America*, *16*(2), 303-321.

Hoag, M. J., & Burlingame, G. M. (1997). Evaluating the effectiveness of child and adolescent group treatment: A meta-analytic review. *Journal of Clinical Child Psychology*, *26*(3), 234-246.

Huhn, D., Huber, J., Ippen, F. M., Eckart, W., Junne, F., Zipfel, S., . . . Nikendei, C. (2016). International medical students' expectations and worries at the beginning of their medical education: a qualitative focus group study. *BMC medical education*, *16*, 1-8.

Hunt, J., & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of adolescent health*, *46*(1), 3-10.

Hwang, I., & Cha, O. (2018). Examining technostress creators and role stress as

potential threats to employees' information security compliance. *Computers in Human Behavior*, *81*, 282-293.

Ibrahim, R., Bakar, A. A., & Nor, S. B. M. (2007). Techno stress: a study among academic and non academic staff. *Lecture Notes in Computer Science*, *4566*, 118.

Igbaria, M. (1994). An examination of the factors contributing to microcomputer technology acceptance. *Accounting, Management and Information Technologies*, *4*(4), 205-224.

Ishola, A. M., Adelana, O. P., & Akorede, O. J. (2022). Perception of techno-stress among university undergraduates. *Journal of ICT in Education*, *9*(2), 137-149.

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field methods*, *18*(1), 3-20.

Jackson, Y., & Warren, J. S. (2000). Appraisal, social support, and life events: Predicting outcome behavior in school‐age children. *Child development*, *71*(5), 1441-1457.

Jacobs, E. E., Masson, R. L., & Harvill, R. L. (1998). *Group counseling: Strategies and skills*. Thomson Brooks/Cole Publishing Co.

Jacobs, E. E., Schimmel, C. J., Masson, R. L., & Harvill, R. L. (2015). *Group counseling: Strategies and skills*. Cengage learning.

Janssen, T., & van Atteveldt, N. (2023). Coping styles mediate the relation between mindset and academic resilience in adolescents during the COVID-19 pandemic: a randomized controlled trial. *Scientific reports*, *13*(1), 6060.

Jena, R. (2015). Technostress in ICT enabled collaborative learning environment: An empirical study among Indian academician. *Computers in Human Behavior*, *51*, 1116-1123.

Jiang, G., & Xia, M. (2006). Psychological help-seeking: Current research and the phases-decision-making model. *Advances in Psychological Science*, *14*(06), 888.

Jindal-Snape, D., & Ingram, R. (2013). Understanding and supporting triple transitions of international doctoral students: ELT and SuReCom models. *Journal of Perspectives in Applied Academic Practice*, *1*(1).

Johnson, D. W., & Johnson, F. P. (1991). *Joining together: Group theory and group skills*. Prentice-Hall, Inc.

Jung, I., Kudo, M., & Choi, S. K. (2012). Stress in Japanese learners engaged in online collaborative learning in English. *British Journal of Educational Technology*, *43*(6), 1016-1029.

Jurek, P., Korjonen‐Kuusipuro, K., & Olech, M. (2021). When technology use causes stress: Challenges for contemporary research. *Human Technology*, *17*(3), 190–196-190–196.

Kim, H.-Y. (2013). Statistical notes for clinical researchers: assessing normal distribution (2) using skewness and kurtosis. *Restorative dentistry & endodontics*, *38*(1), 52-54.

Knee, C. R. (1998). Implicit theories of relationships: Assessment and prediction of romantic relationship initiation, coping, and longevity. *Journal of personality and social psychology*, *74*(2), 360.

Koolhaas, J. M., Bartolomucci, A., Buwalda, B., de Boer, S. F., Flügge, G., Korte, S. M., . . . Palanza, P. (2011). Stress revisited: a critical evaluation of the stress concept. *Neuroscience & Biobehavioral Reviews*, *35*(5), 1291-1301.

Krow, S. (2020). *African American college students' attitudes toward help seeking for mental health illness* Walden University].

Krueger, R. A. (2014). *Focus groups: A practical guide for applied research*. Sage publications.

Kumar, B., Babu, K. J., & Krishnamurthy, C. (2018). A cross-sectional comparative study of coping distress in medical and non-medical students. *Open Journal of Psychiatry & Allied Sciences*, *9*(2), 113-118.

Kunjiapu, S., & Kunasegaran, M. (2021). Psychological wellbeing among undergraduates of Higher Learning Institutions in Malaysia. *Psychol. Educ. J*, *58*, 9179-9187.

Kurasaki, K. S. (2000). Intercoder reliability for validating conclusions drawn from open-ended interview data. *Field methods*, *12*(3), 179-194.

Kwaah, C. Y., & Essilfie, G. (2017). Stress and coping strategies among distance education students at the University of Cape Coast, Ghana. *Turkish Online Journal of Distance Education*, *18*(3), 120-134.

La Torre, G., Esposito, A., Sciarra, I., & Chiappetta, M. (2019). Definition, symptoms and risk of techno-stress: a systematic review. *International archives of occupational and environmental health*, *92*, 13-35.

Lambert, M. J. (2013). *Bergin and Garfield's handbook of psychotherapy and behavior change*. John Wiley & Sons.

Lansisalmi, H., Peiro, J. M., & Kivimaki IV, M. (2000). Collective stress and coping in the context of organizational culture. *European journal of work and organizational psychology*, *9*(4), 527-559.

Lazarus, R., & Folkman, S. (1984). Stress, appraisal, andcoping, SpringerPublishing&Company. In (pp. pp. 141): Inc.

Lazarus, R. S. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual review of psychology*, *44*(1), 1-22.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.

Lee Duckworth, A., Steen, T. A., & Seligman, M. E. (2005). Positive psychology in clinical practice. *Annu. Rev. Clin. Psychol.*, *1*, 629-651.

Lengua, L. J., & Long, A. C. (2002). The role of emotionality and self-regulation in the appraisal–coping process: Tests of direct and moderating effects. *Journal of Applied Developmental Psychology*, *23*(4), 471-493.

Leung, S. A., Guo, L., & Lam, M. P. (2000). The development of counseling psychology in higher educational institutions in China: Present conditions and needs, future challenges. *The Counseling Psychologist*, *28*(1), 81-99.

Levitt, B., & Brodley, B. (2005). It enlightens everything you do": Observing non-directivity in a client-centered therapy demonstration session. *Embracing nondirectivity: Reassessing person-centered theory and practice in the 21st century*, pp. 96-112.

LI, Y. H. (2021). The relationship between coping styles and mental health levels of college students: the mediating role of sense of hope. *Chinese Journal of Clinical Psychology*, *29*(06), 1297-1300.

Liamputtong, P. (2011). Focus group methodology and sensitive topics and vulnerable groups. *Focus Group methodology: Principles and Practice. London, UK: SAGE Publications, Ltd*, 107-126.

Liang, L., Ren, H., Cao, R., Hu, Y., Qin, Z., Li, C., & Mei, S. (2020). The effect of COVID-19 on youth mental health. *Psychiatric quarterly*, *91*, 841-852.

Lietaer, G. (1984). Unconditional positive regard: A controversial basic attitude in client-centered therapy.

Linehan, M. M., Armstrong, H. E., Suarez, A., Allmon, D., & Heard, H. L. (1991). Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Archives of general psychiatry*, *48*(12), 1060-1064.

Lu, M., Hu, B., Yan, W., & Dong, Y. R. (2010). The Organic Combination of Group Psychological Counseling Technology and Ideological and Political Education for Vocational College Students. *Journal of China Environmental Management Cadre College*, *20*(01), 81-83.

Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *23*(6), 695-706.

Luthans, F., Vogelgesang, G. R., & Lester, P. B. (2006). Developing the psychological capital of resiliency. *Human resource development review*, *5*(1), 25-44.

Luthar, S. S. (2015). Resilience in development: A synthesis of research across five decades. *Developmental psychopathology: Volume three: Risk, disorder, and adaptation*, 739-795.

Luthar, S. S., Lyman, E. L., & Crossman, E. J. (2014). Resilience and positive psychology. *Handbook of developmental psychopathology*, 125-140.

Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological bulletin*, *131*(6), 803.

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: guided by information power. *Qualitative health research*, *26*(13), 1753-1760.

Markus, M. L., & Keil, M. (1994). If we build it, they will come: Designing information systems that people want to use. *MIT Sloan Management Review*, *35*(4), 11.

Martínez-Martí, M. L., & Ruch, W. (2017). Character strengths predict resilience over and above positive affect, self-efficacy, optimism, social support, self-esteem, and life satisfaction. *The Journal of Positive Psychology*, *12*(2), 110-119.

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American psychologist*, *56*(3), 227.

Masten, A. S. (2007). Resilience in developing systems: Progress and promise as the fourth wave rises. *Development and psychopathology*, *19*(3), 921-930.

Masten, A. S. (2014). Global perspectives on resilience in children and youth. *Child development*, *85*(1), 6-20.

Masten, A. S. (2018). Resilience theory and research on children and families: Past, present, and promise. *Journal of Family Theory & Review*, *10*(1), 12-31.

Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and psychopathology*, *2*(4), 425-444.

Masten, A. S., & Cicchetti, D. (2016). Resilience in development: Progress and transformation. *Developmental psychopathology*, *4*(3), 271-333.

Masten, A. S., Powell, J. L., & Luthar, S. (2003). A resilience framework for research, policy, and practice. *Resilience and vulnerability: Adaptation in the context of childhood adversities*, *1*(25), 153.

Mayordomo, T., Viguer, P., Sales, A., Satorres, E., & Meléndez, J. C. (2016). Resilience and coping as predictors of well-being in adults. *The Journal of psychology*, *150*(7), 809-821.

Mazzarol, T., & Soutar, G. N. (2002). "Push-pull" factors influencing international student destination choice. *International journal of educational management*.

McAlister, A. M., Lee, D. M., Ehlert, K. M., Kajfez, R. L., Faber, C. J., & Kennedy, M. S. (2017). Qualitative coding: An approach to assess inter-rater reliability. 2017 ASEE annual conference & exposition,

McGarvey, A., Brugha, R., Conroy, R., Clarke, E., & Byrne, E. (2015). International students' experience of a western medical school: a mixed methods study exploring the early years in the context of cultural and social adjustment compared to students from the host country. *BMC medical education*, *15*, 1-13.

McLennan, J. (1991). Formal and informal counselling help: students' experiences. *British Journal of Guidance & Counselling*, *19*(2), 149-159.

Meischke, H., Lilly, M., Beaton, R., Calhoun, R., Tu, A., Stangenes, S., . . . Baseman, J. (2018). Protocol: a multi-level intervention program to reduce stress in 9-1-1 telecommunicators. *BMC public health*, *18*, 1-10.

Meyer, H. D. (1952). SULLIVAN. Readings in Group Work.(Book Review). *Social Forces*, *31*(1), 390.

Minkoff, K., Bergman, E., Beck, A. T., & Beck, R. (1973). Hopelessness, depression, and attempted suicide. *American Journal of psychiatry*, *130*(4), 455-459.

Miranda Páez, J. (1993). Introducción a la Reality Therapy y Teoría de Control [Introduction to Reality Therapy and Theory of Control]. *Clínica y Salud*, *4*(3), 229. https://www.proquest.com/scholarly-journals/introducción-la-reality-therapy-y-teoría-de/docview/2478602026/se-2?accountid=199774

Mizuno, Y., Wartelsteiner, F., & Frajo-Apor, B. (2016). Resilience research in schizophrenia: a review of recent developments. *Curr Opin Psychiatry*, *29*(3), 218-223. https://doi.org/10.1097/yco.0000000000000248

Mohan, P. (2015). *Behavioral science research: An evaluation of the historical roots, evolution and future development in Thailand*.

Monat, A., & Lazarus, R. S. (1991). Stress and Coping: an Anthology. In: Columbia University Press.

Morales-Rodríguez, F. M., Pérez-Mármol, J. M., & Brown, T. (2019). Education burnout and engagement in occupational therapy undergraduate students and its

associated factors. *Frontiers in Psychology*, *10*, 485892.

Morales Rodriguez, F. M. (2017). Relationship between coping with daily stress, self-concept, social skills and emotional intelligence. *European Journal of Education and Psychology*, *10*(2), 41-48.

Morse, J. M. (2000). Determining sample size. In (Vol. 10, pp. 3-5): Sage Publications Sage CA: Thousand Oaks, CA.

Munir, A., Sugiyo, S., & Mulawarman, M. (2021). The effectiveness of Group Counseling with Sfbc and Mindfulness Training Group Approaches to reduce the technostress of students who use smartphone. *Jurnal Bimbingan Konseling*, *10*(1), 42-48.

Munk, A. J., Schmidt, N. M., Alexander, N., Henkel, K., & Hennig, J. (2020). Covid-19—Beyond virology: Potentials for maintaining mental health during lockdown. *Plos one*, *15*(8), e0236688.

Murphy, C., Marcus-Quinn, A., & Hourigan, T. (2021). Exploring the ripple effect of 'always on'digital work culture in secondary education settings. In *Handbook for Online Learning Contexts: Digital, Mobile and Open: Policy and Practice* (pp. 339-353). Springer.

Nath, P., & Pradhan, R. K. (2012). Influence of positive affect on physical health and psychological well-being: Examining the mediating role of psychological resilience. *Journal of Health Management*, *14*(2), 161-174.

Nisafani, A. S., Kiely, G., & Mahony, C. (2020). Workers' technostress: A review of its causes, strains, inhibitors, and impacts. *Journal of Decision Systems*, *29*(sup1), 243-258.

Norcross, J. C., & Beutler, L. E. (2014). Evidence-based relationships and responsiveness for depression and substance abuse.

Norcross, J. C., Beutler, L. E., & Levant, R. F. (2006). *Evidence-based practices in mental health: Debate and dialogue on the fundamental questions*. American Psychological Association.

Norcross, J. C., & Goldfried, M. R. (2005). *Handbook of psychotherapy integration*. Oxford University Press.

Norcross, J. C., Hailstorks, R., Aiken, L. S., Pfund, R. A., Stamm, K. E., & Christidis, P. (2016). Undergraduate study in psychology: Curriculum and assessment. *American psychologist*, *71*(2), 89.

Norcross, J. C., Karpiak, C. P., & Lister, K. M. (2005). What's an integrationist? A study of self‐identified integrative and (occasionally) eclectic psychologists. *Journal of Clinical Psychology*, *61*(12), 1587-1594.

Norcross, J. C., Pfund, R. A., & Prochaska, J. O. (2013). Psychotherapy in 2022: A Delphi poll on its future. *Professional Psychology: Research and Practice*, *44*(5), 363.

Nunnally, J., & Bernstein, I. (1994). The assessment of reliability. Psychometric Theory, 3 (1), 248-292. In.

Olson, M. H., & Ives, B. (1981). User involvement in system design: an empirical test of alternative approaches. *Information & Management*, *4*(4), 183-195.

Park, C. L., Russell, B. S., Fendrich, M., Finkelstein-Fox, L., Hutchison, M., & Becker, J. (2020). Americans' COVID-19 stress, coping, and adherence to CDC guidelines. *Journal of general internal medicine*, *35*, 2296-2303.

Park, G.-R., & Kim, H.-S. (2011). Effects of a group counseling integration program on self-determination and internet addiction in high school students with tendency to internet addiction. *Journal of Korean Academy of Nursing*, *41*(5), 694-703.

Piergiovanni, L. F., & Depaula, P. D. (2018). Descriptive study of self-efficacy and stress management among Argentinean university students. *Revista mexicana de investigación educativa*, *23*(77), 413-432.

Pirkkalainen, H., Salo, M., Makkonen, M., & Tarafdar, M. (2017). Coping with technostress: When emotional responses fail. International Conference on Information Systems,

Prochaska, J. O. (1999). How do people change, and how can we change to help many more people?

Rabiee, F. (2004). Focus-group interview and data analysis. *Proceedings of the nutrition society*, *63*(4), 655-660.

Rachman, S. (1997). The evolution of cognitive behaviour therapy.

Ragu-Nathan, T., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information systems research*, *19*(4), 417-433.

Rak, C. F., & Patterson, L. E. (1996). Promoting resilience in at‐risk children. *Journal of counseling & development*, *74*(4), 368-373.

Rashid, T., & Seligman, M. P. (2018). *Positive psychotherapy: Clinician manual*. Oxford University Press.

Raunic, A., & Xenos, S. (2008). University counselling service utilisation by local and international students and user characteristics: A review. *International Journal for the Advancement of Counselling*, *30*, 262-267.

Reynolds, W. M., & Stark, K. D. (1983). Cognitive behavior modification: The clinical application of cognitive strategies. In *Cognitive strategy research: Psychological foundations* (pp. 221-266). Springer.

Richardson, G. E. (2002). The metatheory of resilience and resiliency. *Journal of Clinical Psychology*, *58*(3), 307-321.

Richardson, G. E., Neiger, B. L., Jensen, S., & Kumpfer, K. L. (1990). The resiliency model. *Health education*, *21*(6), 33-39.

Riedl, R. (2012). On the biology of technostress: literature review and research agenda. *ACM SIGMIS database: the DATABASE for advances in information systems*, *44*(1), 18-55.

Riva, G., Baños, R. M., Botella, C., Wiederhold, B. K., & Gaggioli, A. (2012). Positive technology: using interactive technologies to promote positive functioning. *Cyberpsychology, Behavior, and Social Networking*, *15*(2), 69-77.

Roberts Jr, R. R., & Renzaglia, G. A. (1965). The influence of tape recording on counseling. *Journal of counseling psychology*, *12*(1), 10.

Rogers, C. (1971). Carl Rogers describes his way of facilitating encounter groups. *AJN The American Journal of Nursing*, *71*(2), 275-279.

Rogers, C. R. (2013). A theory of therapy and personality change: As developed in the

client-centered framework". *Perspectives in Abnormal Behavior: Pergamon General Psychology Series*, *341*.

Roussi, P., Miller, S., & Shoda, Y. (2000). Discriminative facility in the face of threat: Relationship to psychological distress. *Psychology and Health*, *15*, 21-33. https://doi.org/10.1080/08870440008400286

Roux, B., & Philippot, P. (2020). A mindfulness-based program among adolescent boys with behavior disorders: A quasi-experimental study. *Journal of Child and Family Studies*, *29*(8), 2186-2200.

Rowold, J., & Schlotz, W. (2009). Transformational and transactional leadership and followers' chronic stress. *Leadership review*, *9*(1), 35-48.

Sachse, R. (1990). Concrete interventions are crucial: The influence of the therapist's processing proposals on the client's intrapersonal exploration in client-centered therapy. *Client-centered and experiential psychotherapy in the nineties*, 295-308.

Sachse, R., & Elliott, R. (2002). Process–outcome research on humanistic therapy variables.

Sandler, I. N., Tein, J. Y., Mehta, P., Wolchik, S., & Ayers, T. (2000). Coping efficacy and psychological problems of children of divorce. *Child development*, *71*(4), 1099-1118.

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., . . . Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & quantity*, *52*, 1893-1907.

Schnellbacher, J., & Leijssen, M. (2009). The significance of therapist genuineness from the client's perspective. *Journal of Humanistic Psychology*, *49*(2), 207-228.

Schwander-Maire, F., Querido, A., Cara-Nova, T., Dixe, M., Aissaoui, D., Charepe, Z., . . . Laranjeira, C. (2023). Psychological Responses and Strategies Towards the COVID-19 Pandemic Among Higher Education Students in Portugal and Switzerland: A Mixed-Methods Study. Front. *Mental health of higher education students*, *16648714*, 135.

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in*

education and the social sciences. Teachers college press.

Seligman, M. E. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. Simon and Schuster.

Shechtman, Z. (2014). Group counseling in the school. *Hellenic Journal of Psychology*, *11*(3), 169-183.

Shechtman, Z., & Ben-David, M. (1999). Individual and group psychotherapy of childhood aggression: A comparison of outcomes and processes. *Group Dynamics: Theory, Research, and Practice*, *3*(4), 263.

Sheldon, K. M., Kashdan, T. B., & Steger, M. F. (2011). *Designing positive psychology: Taking stock and moving forward*. Oxford University Press.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for information*, *22*(2), 63-75.

Shu, Q., Tu, Q., & Wang, K. (2011). The impact of computer self-efficacy and technology dependence on computer-related technostress: A social cognitive theory perspective. *International Journal of Human-Computer Interaction*, *27*(10), 923-939.

Song, Y. X., & Shi, Q. (2021). Research on Psychological Education Approaches in Universities during the Post pandemic Period. *Research on Ideological and Political Education*, *37*(04), 155-160.

Srivastava, S. C., Chandra, S., & Shirish, A. (2015). Technostress creators and job outcomes: theorising the moderating influence of personality traits. *Information Systems Journal*, *25*(4), 355-401.

Steinhardt, M., & Dolbier, C. (2008). Evaluation of a resilience intervention to enhance coping strategies and protective factors and decrease symptomatology. *Journal of American college health*, *56*(4), 445-453.

Stephens, D., Jain, S., & Kim, K. (2010). Group counseling: Techniques for teaching social skills to students with special needs. *Education*, *130*(3).

Stiles, W. B., Barkham, M., Mellor-Clark, J., & Connell, J. (2008). Effectiveness of cognitive-behavioural, person-centred, and psychodynamic therapies in UK

primary-care routine practice: replication in a larger sample. *Psychological medicine*, *38*(5), 677-688.

Stone, J., & Schaefer, C. E. (2019). *Game play: Therapeutic use of games with children and adolescents*. John Wiley & Sons.

Stratta, P., Capanna, C., Patriarca, S., de Cataldo, S., Bonanni, R. L., Riccardi, I., & Rossi, A. (2013). Resilience in adolescence: Gender differences two years after the earthquake of L'Aquila. *Personality and individual differences*, *54*(3), 327-331.

Sulaiman, W. A. W., Malek, M. D. H., Fatini, W. N., & Fahrudin, A. (2017). Effectiveness of Group Counseling Using Cognitive and Behavior Therapy Intervention to Reduce Stress among Nurses. *Universal Journal of Psychology*, *5*(5), 231-237.

Sun, J., Harris, K., & Vazire, S. (2020). Is well-being associated with the quantity and quality of social interactions? *Journal of personality and social psychology*, *119*(6), 1478.

Suwarto, D. H. (2012). Identifying key factors affecting consumer decision making behavior in cinema context: a mix method approach. International Conference on Business Economics, Management and Behavioral Sciences,

Sydney-Agbor, N., Ebeh, R., & Onyeanu, M. (2018). Mental wellbeing among undergraduates in Eastern Nigeria: A function of academic stress, substance abuse and age. *International Journal of Health and Psychology Research*, *6*(2), 36-43.

Tamres, L. K., Janicki, D., & Helgeson, V. S. (2002). Sex differences in coping behavior: A meta-analytic review and an examination of relative coping. *Personality and social psychology review*, *6*(1), 2-30.

Tan , Q. Y., Zhu , L., Peng , Z. l., Xiang, B., & Zhang, T. (2021). The Influence of Coping Style and Psychological resilience on Negative Emotion of College Students. *Occupation and Health*, *37*(08), 1113-1116+1121.

Tang, F., Xue, F., & Qin, P. (2015). The interplay of stressful life events and coping skills on risk for suicidal behavior among youth students in contemporary China: a large scale cross-sectional study. *BMC psychiatry*, *15*(1), 1-10.

Tao, S., Dong, Q., Pratt, M. W., Hunsberger, B., & Pancer, S. M. (2000). Social support: Relations to coping and adjustment during the transition to university in the People's Republic of China. *Journal of Adolescent research*, *15*(1), 123-144.

Tarafdar, M., Pullins, E. B., & Ragu-Nathan, T. (2015). Technostress: negative effect on performance and possible mitigations. *Information Systems Journal*, *25*(2), 103-132.

Tarafdar, M., Tu, Q., Ragu-Nathan, & TS. (2010). Impact of technostress on end-user satisfaction and performance. *Journal of management information systems*, *27*(3), 303-334.

Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. (2007). The impact of technostress on role stress and productivity. *Journal of management information systems*, *24*(1), 301-328.

Theron, L. C., & Liebenberg, L. (2015). Understanding cultural contexts and their relationship to resilience processes. *Youth resilience and culture: Commonalities and complexities*, 23-36.

Thomée, S., Härenstam, A., & Hagberg, M. (2012). Computer use and stress, sleep disturbances, and symptoms of depression among young adults–a prospective cohort study. *BMC psychiatry*, *12*(1), 1-14.

Trotzer, J. P. (2013). *Counselor and the group: Integrating theory, training, and practice*. Taylor & Francis.

Trotzer, J. P., Roark, A. E., & Roark, A. B. (1979). Group structure: Components and effects. *The Journal for Specialists in Group Work*, *4*(4), 186-192.

Troy, A. S., Willroth, E. C., Shallcross, A. J., Giuliani, N. R., Gross, J. J., & Mauss, I. B. (2023). Psychological resilience: An affect-regulation framework. *Annual review of psychology*, *74*, 547-576.

Tu, Q., Wang, K., & Shu, Q. (2005). Computer-related technostress in China. *Communications of the ACM*, *48*(4), 77-81.

Tuapawa, K. (2017). Interpreting experiences of students using educational online technologies to interact with teachers in blended tertiary environments: A

phenomenological study. *Australasian Journal of Educational Technology*, *33*(1).

Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of personality and social psychology*, *86*(2), 320.

Tugade, M. M., Fredrickson, B. L., & Feldman Barrett, L. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of personality*, *72*(6), 1161-1190.

Turkington, D., Dudley, R., Warman, D. M., & Beck, A. T. (2006). Cognitive-behavioral therapy for schizophrenia: a review. *Focus*, *10*(2), 5-233.

Turner, A. L., & Berry, T. R. (2000). Counseling center contributions to student retention and graduation: A longitudinal assessment. *Journal of college student development*.

Tyupa, S. (2011). A theoretical framework for back-translation as a quality assessment tool. *New Voices in Translation Studies*, *7*(1), 35-46.

Ungar, M. (2013). Resilience, trauma, context, and culture. *Trauma, violence, & abuse*, *14*(3), 255-266.

Valero, N., Vélez, M., Durán, A., & Portillo, M. (2020). COVID-19 coping: stress, fear, anxiety, and depression. *Enferm Inv*, *5*, 63-70.

Van Breda, A. D. (2001). Resilience theory: A literature review. *Pretoria, South Africa: South African Military Health Service*.

Vella, S.-L. C., & Pai, N. B. (2019). A theoretical review of psychological resilience: Defining resilience and resilience research over the decades. *Archives of Medicine and Health Sciences*, *7*(2), 233-239.

Verganti, R., Vendraminelli, L., & Iansiti, M. (2020). Innovation and design in the age of artificial intelligence. *Journal of product innovation management*, *37*(3), 212-227.

Vernon, A. (2007). Rational emotive behavior therapy. *Counseling & Psychotherapy: Theories and Intervention*, 266-288.

Walen, S. R., DiGiuseppe, R., & Dryden, W. (1992). *A practitioner's guide to rational-emotive therapy*. Oxford University Press.

Walsh, F. (2016). Family resilience: A developmental systems framework. *European journal of developmental psychology*, *13*(3), 313-324.

Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International journal of environmental research and public health*, *17*(5), 1729.

Wang, K., Shu, Q., & Tu, Q. (2008). Technostress under different organizational environments: An empirical investigation. *Computers in Human Behavior*, *24*(6), 3002-3013.

Wang, L., He, C. Z., Yu, Y. M., Qiu, X. H., Yang, X. X., Qiao, Z. X., . . . Yang, Y. J. (2014). Associations between impulsivity, aggression, and suicide in Chinese college students. *BMC public health*, *14*(1), 1-8.

Wang, X., Tan, S. C., & Li, L. (2020). Measuring university students' technostress in technology-enhanced learning: Scale development and validation. *Australasian Journal of Educational Technology*, *36*(4), 96-112.

Ward, C., & Kennedy, A. (1994). Acculturation strategies, psychological adjustment, and sociocultural competence during cross-cultural transitions. *International journal of intercultural relations*, *18*(3), 329-343.

Wechsler, B. (1995). Coping and coping strategies: a behavioural view. *Applied Animal Behaviour Science*, *43*(2), 123-134.

Weil, M. M., & Rosen, L. D. (1997). *Technostress: Coping with technology@ work@ home@ play* (Vol. 13). J. Wiley New York.

Weinert, C., Maier, C., Laumer, S., & Weitzel, T. (2020). Technostress mitigation: an experimental study of social support during a computer freeze. *Journal of Business Economics*, *90*, 1199-1249.

Wen, Y. (2009). Localization Thinking on the Realistic Dilemma of China's Psychological Counseling Industry. *Off campus education in China*(06), 25-26.

Werner, E. E., & Smith, R. S. (2019). *Overcoming the odds: High risk children from birth to adulthood*. Cornell University Press.

William, G. (2000). Counseling with Choice Theory, The New Reality Therapy. In: New York: Harper Collins Publishers.

Wirt, M., Betz, R., & Engle, K. (1969). The effects of group counseling on the self concepts of counselor candidates. *Counselor Education and Supervision*, *8*(3), 189-194.

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and psychological measurement*, *73*(6), 913-934.

Woolston, C. (2020). Pandemic darkens postdocs' work and career hopes. *Nature*, *585*(7824), 309-312.

Worthington, E. L., & Scherer, M. (2004). Forgiveness is an emotion-focused coping strategy that can reduce health risks and promote health resilience: Theory, review, and hypotheses. *Psychology & Health*, *19*(3), 385-405.

Wright, J. H., Brown, G. K., Thase, M. E., & Basco, M. R. (2017). *Learning cognitive-behavior therapy: An illustrated guide*. American Psychiatric Pub.

Wright, M. O. D., Masten, A. S., & Narayan, A. J. (2013). Resilience processes in development: Four waves of research on positive adaptation in the context of adversity. *Handbook of resilience in children*, 15-37.

Wubbolding, R. E. (2011). Reality therapy/Choice theory. *Counseling and psychotherapy: Theories and interventions*, *1*, 263-285.

Wubbolding, R. E. (2012). Reality therapy. In *Contemporary psychotherapies for a diverse world* (pp. 339-372). Routledge.

Wubbolding, R. E. (2013). *Reality therapy for the 21st century*. Routledge.

Xia, M., & Duan, C. (2020a). Stress coping of chinese international students in face of COVID 19 pandemic: Cultural characteristics. *Int. J. Ment. Health Promot*, *22*(159), 10.32604.

Xia, M., & Duan, C. (2020b). Stress coping of chinese international students in face of COVID 19 pandemic: Cultural characteristics. *International Journal of Mental Health Promotion*, 159-172.

Xiao, H., Carney, D. M., Youn, S. J., Janis, R. A., Castonguay, L. G., Hayes, J. A., & Locke, B. D. (2017). Are we in crisis? National mental health and treatment trends in college counseling centers. *Psychological services*, *14*(4), pp.407.

Xie, Y. (1998). Reliability and validity of the simplified coping style questionnaire. *Chinese Journal of Clinical Psychology*.

Xien, T. L., & Zakaria, N. S. (2022). Relationship between Parenting Styles, Assertiveness and Attitudes towards Seeking Professional Psychological Help among University Students. *Asian Journal of University Education*, *18*(3), 780-791.

Xu, J., & Yang, X. (2023). The influence of resilience on stress reaction of college students during COVID-19: the mediating role of coping style and positive adaptive response. *Current Psychology*, 1-12.

Yalcin, I. (2015). Relationships Between Well-Being and Social Support: A Meta-Analysis of Studies Conducted in Turkey. *Turkish journal of psychiatry*, *26*(1).

Yalom, I. D., & Crouch, E. (1990). The theory and practice of group psychotherapy. *The British Journal of Psychiatry*, *157*(2), 304-306.

Yan, L., Gan, Y., Ding, X., Wu, J., & Duan, H. (2021). The relationship between perceived stress and emotional distress during the COVID-19 outbreak: Effects of boredom proneness and coping style. *Journal of anxiety disorders*, *77*, 102328.

Ye, Z., Yang, X., Zeng, C., Wang, Y., Shen, Z., Li, X., & Lin, D. (2020). Resilience, social support, and coping as mediators between COVID‐19‐related stressful experiences and acute stress disorder among college students in China. *Applied Psychology: Health and Well‐Being*, *12*(4), 1074-1094.

Yelpaze, I., & CEYHAN, A. A. (2020). The prediction of personality, culture and coping strategies on university students' psychological help seeking attitudes. *Turkish Journal of Education*, *9*(2), 134-153.

Yeo, K., Frydenberg, E., Northam, E., & Deans, J. (2014). Coping with stress among preschool children and associations with anxiety level and controllability of situations. *Australian Journal of Psychology*, *66*(2), 93-101.

Yu, H., Li, M., Li, Z., Xiang, W., Yuan, Y., Liu, Y., Xiong, Z. (2020). Coping style, social

support and psychological distress in the general Chinese population in the early stages of the COVID-19 epidemic. *BMC psychiatry*, *20*, 1-11.

Yu, X.-n., Lau, J. T., Mak, W. W., Zhang, J., & Lui, W. W. (2011). Factor structure and psychometric properties of the Connor-Davidson Resilience Scale among Chinese adolescents. *Comprehensive psychiatry*, *52*(2), 218-224.

Yu, X., & Zhang, J. (2007). Factor analysis and psychometric evaluation of the Connor-Davidson Resilience Scale (CD-RISC) with Chinese people. *Social Behavior and Personality: an international journal*, *35*(1), 19-30.

Zeidner, M., & Endler, N. S. (1995). *Handbook of coping: Theory, research, applications* (Vol. 195). John Wiley & Sons.

Zhang, Y., Huang, H., Tang, D., Lu, X., Fan, F., & Pan, J. (2023). Mechanism of online emotional support accompany group for stress: The role of social support. *Frontiers in Psychology*, *13*, 1047364.

Zhou, N. (2001). Indigenous Psychology and the Localization of Psychology. *Journal of Northwest Normal University (Social Sciences Edition)*(04), 46-49. https://doi.org/10.16783/j.cnki.nwnus.2001.04.010

Ziyang, L., & Wei, L. (2017). Development, Prospects and Prospects of Localized Group Consulting in China. *Reform & Openning*(15), 27-29. https://doi.org/10.16653/j.cnki.32-1034/f.2017.015.012

Zong, J.-G., Cao, X.-Y., Cao, Y., Shi, Y.-F., Wang, Y.-N., Yan, C., . . . Chan, R. C. (2010). Coping flexibility in college students with depressive symptoms. *Health and quality of life outcomes*, *8*(1), 1-6.

APPENDIX

APPENDIX 1 Scales

1-8 entitled Basic Information 1-8 is basic information

1. Is your university a private university or a public university [single choice]*

○A. Public

○B. Private

2. What is your gender?[single choice]*

○A. Male student

○B. Female classmate

3. What year are you in college?[single choice]*

○A. Freshman

○B. Sophomore

○C. Junior

○D. Senior

4. How many brothers and sisters do you have?[single choice]*

○A.0 A 0

○B. One 1

○C. Two 2

○D. From 3 to 3 or more than 3 to more than 3

5. Where do you usually live before you come to college? [single choice]*

○A. City

○B. Town

○C. County

○D. Village

6. How much is your living expenses for a month? [single choice]*

○A.500 to 1000 RMB

○B.1001 to 2000 RMB

○C.2001 to 3000 RMB

○D. More than 3,001 RMB

○E. No living expenses or other No living expenses or others

7. Do you have any psychological counseling institutions in your university?[single choice]*

○A. Yes, go to psychological counseling

○B. Yes, has never been to

○C. not have

○D. Haven't heard of it

8. Is it your subject background? single choice]*

○Humanities

○Science and Engineering

○Social Sciences

9-33 for Resilience Scale 9-33

A	B	C	D	E
Never	Very few Seldom	Sometimes	Often	Always be

9.I can adapt to change in my life.

10.I have an intimate and safe relationship.

11. Sometimes fate or God can help(I need luck).

12. I can deal with whatever happens.

13. Past successes give me confidence to face challenges.

14. I can see the humorous side of things when dealing with bad things.

15. Dealing with stress makes me feel powerful.

16. After experiencing hardship or illness, I can recover quickly.

17. I'm ready to accept things happen for a reason.

18. No matter what the result is, I will do my best.

19. I can achieve my goal.

20. When things seem hopeless, I won't give up easily.

21. I know where to go for help.

22. Under pressure, I can concentrate and think clearly.

23.I like to take the lead in solving problems.

24. I won't be discouraged by failure.

25. I think I am a powerful person.

26. I can make unusual or difficult decisions.

27.I can deal with unhappiness.

28. I have to act according to my foremonition.

29.I have a strong sense of purpose.

30. I feel that I can take control of my life.

31.I like the challenge.

32. One works to attain one's goals.

33. Pride in your achievements.

34-53 Coping strategies scale

A	B	C	D	E
Never	Very few Seldom	Sometimes	Often	Always be

34.I Relieve yourself through work, learning, or some other activities.

35. I can talk to people and tell your troubles in your inner heart.

36. I try to see the good side of things.

37. I change my mind and rediscover what's important in life.

38. I don't take the problem too seriously.

39. I stick to your position and fight for what you want.

40. I can identify several different ways to solve the problem.

41. I seek advice from relatives, friends, or classmates.

42. I change some previous practices or my own problems.

43. I learn from others' solutions for handling similar difficult situations.

44. I cultivate hobbies and actively participate in cultural and sports activities.

45. I try to control my disappointment, regret, sadness, and anger.

46. I try to take a break or have a vacation and wisely put aside problems (annoyances).

47. I relieve worries through smoking, drinking, taking medication, and eating.

48. I think that time will change the status quo, but the only thing to do is to wait.

49. I try to forget the whole thing.

50. I rely on others to solve problems.

51. accept the reality because there is no other way.

52. I will fantasy some miracle may happen and change the status quo.

53. I comfort me.

54-76 Techno-stress scale

A	B	C	D	E
Never	Very few Seldom	Sometimes	Often	Always be

Techno-overload (OV)

54.OV1: I am forced by this technology* to work much faster.

55.OV2: I am forced by this technology to do more work than I can handle.

56.OV3: I am forced by this technology to work with very tight time schedules.

57.OV4: I am forced to change my work habits to adapt to new technologies.

58.OV5: I have a higher workload because of increased technology complexity.

Techno-invasion (IN)

59.IN1: I spend less time with my family due to this technology.

60.IN2: I have to be in touch with my work even during my vacation due to this technology.

61.IN3: I have to sacrifice my vacation and weekend time to keep current on new technologies.

62.IN4: I feel my personal life is being invaded by this technology.

Techno-complexity (CO)

63.CO1: I do not know enough about this technology to handle my job satisfactorily.

64.CO2: I need a long time to understand and use new technologies.

65.CO3: I do not find enough time to study and upgrade my technology skills.

66.CO4: I find new recruits to this organization know more about computer technology than I do.

67.CO5: I often find it too complex for me to understand and use new technologies.

Techno-insecurity (INS)

68.INS1: I feel a constant threat to my job security due to new technologies.

69.INS2: I have to constantly update my skills to avoid being replaced.

70.INS3: I am threatened by co-workers with newer technology skills.

71.INS4: I do not share my knowledge with my co-workers for fear

of being replaced.

72.INS5: I feel there is less sharing of knowledge among

co-workers for fearing of being replaced.

Techno-uncertainty (UN)

73.UN1: There are always new developments in the technologies we use in our organization.

74.UN2: There are constant changes in computer software in our organization.

75.UN3: There are constant changes in computer hardware in our organization.

76.UN4: There are frequent upgrades in computer networks in our organization.

End-user satisfaction:

APPENDIX 2 Personal in-depth interview (Phase 1)

Theme 1: Techno-stress performance and source

-What changes have occurred in the classroom format for technical students during the post-pandemic period?

-Do you think Techno stress is a problem for you? What are the main issues?

-"What changes have the pandemic brought to you in terms of changing your mindset towards learning technology?"

-"How do you think your cultural and social adaptation experiences will affect your mental health and lead to techno-stress?"

-Will family growth bring you less or more Techno stress? How did you handle its social environment

Theme 2: Resilience

-Have you shown a good state and adaptability in the face of difficulties? (For example, what methods successfully solved the techno-stress problem? What Resilience methods were used (resilience, strength, or optimism)?

Theme 3: Coping strategies

-Are you afraid of Techno-stress in society when facing the post-pandemic environment? How do you plan to respond

-How do you achieve with or without Techno-stress? What Coping strategies are used?

APPENDIX 3 Focus group interviews (Phase 2)

Theme 1: Resilience

- " Are you generally optimistic when encountering technical problems before the counseling program? What do you usually do with that?

-. What about after the counseling program? What changes have happened?

Theme 2: Coping strategies

- Before counseling your program, when confronted with unresolved educational technology problems, please describe your experience and whether you have responded in an evasive way.

- After the counseling program, try to determine the difference between solving problems in reality by admitting objective facts. Have you ever had this experience?

-How do you usually ask for help under Techno-stress? Do you think there will be any changes after the counseling program?

Theme 3: Techno-stress

-What type of techno-stress bothers you the most? Please describe what impressed you most.

-What did you feel after the counseling program? Is the Techno-stress that makes your headache somewhat relieved?

APPENDIX 4 Details of the arrangement of the group counseling program

Session 1: Establish lead found and build rapport familiarity

——Initial Stage

Objective:

1. Students will build a rapport and trusting relationships with each other.

2. Students will establish collective rules that they all agree to follow.

3 Students will understand the meaning of participating in this project and the techno-stress concept.

Activity:

1. Build trust among members through "animal card" imitation games.

2. By specifying the “contract” activity, specify the rules for counseling.

3. Pre-test techno-stress.

Group members:

Eight new students from a private university

Application theory:

Person-centered therapy

Techniques:

Unconditional, positive attention, sincere, and positive feedback

Conceptual:

Leaders and group members build trust, introduce the details of the training plan, explain the detailed time, forms, and methods, let the students understand the group theme, let the students agree to the group rules list, let the students participate in the leadership activities(Yalom & Crouch, 1990), and complete the techno-stress pre-test.

Material:

1. Cardboard should be used when putting up posters

2. A box of crayons, a box of colored markers, and a box of colored pencils

Procedure:

Beginning stage:

1. "Animal card" game- Interpersonal warm-up and trust building:

(1) The members start an "animal card" game.

The leader prepares two identical animal cards: two cats, two tigers, two dogs, two leopards, and two rabbits. Shuffle the cards and have group members draw them. Mobilize the same animals to form a group. They then interview each other to learn their details and introduce themselves individually. The content of the introduction includes name, department, personality traits, personal interests and hobbies, family situation, and information about oneself that the individual is willing to let the other party know. Each person has 3 minutes, then chat for a few minutes. When introducing oneself to the other person, the listener should fully immerse themselves and understand them as much as possible through verbal and nonverbal observation.

(2) Paired mutual introductions:

The two combinations I introduced earlier were combined to form a group of four, and the other introduced them. Each member will introduce their friend they just met to

two new friends, each for 2-3 minutes. Then, the four of them can freely talk together for a few minutes. 4-link self-introduction

(3) Chain self-introduction:

Two 4-person groups merge, with 8 people sitting in a circle. Starting from one person, each person introduces themselves in one sentence. A sentence must contain three contents: name, affiliation, and unique characteristics of oneself. The rule is that after the first person finishes speaking, the second person must start from the first person, and the third person must start from the first person all the way to the eighth person. This way, the whole group's attention is focused, and in multiple repetitions, they unconsciously remember the information of others.

2. Understanding of the group activity, establishing a psychological counseling contract

(1) Introduce the nature and size of the team, the roles of the leaders and their members, and how they interact.

(2) If members have questions, ask them now.

(3) Write each activity contract on paper and set the rules they want to follow.

Make students feel safe in the group; you need to create group rules and follow the discussion to ask students what they need to create a safe place to discuss personal issues. Encourage students to think about the rules that will help create a safe place, make a color poster with three to five rules, and get the group members to sign the poster effectively. When students are included in establishing group rules, they feel respected: valuable, and likely to follow the rules they establish.

Example Group Rules:

- Listen to the team leader.
- Listen to what others say.
- Please raise your hand and talk about it.
- You will only speak if you have a wand (or talking stick).
- Listen carefully and do not interrupt you.
- Don't laugh at what people say unless it should be funny.
- Say nice things (do not joke or belittle people).
- Hands and feet close.
- To support the other group members.
- Be polite.
- Respect others.
- Do not talk about groups outside of the group
- Actively listen
- Confidentiality of Group Members

Working stage:

3 Guide individuals to participate in group activities

Clarify the goals of the group and the motivation for members to participate

(1)provided students with a brief overview of the content of future group meetings, the definition of each variable, some counseling, and the objectives of each counseling.

Picture Discussion Activity - Distinguishing Concepts: Team up in pairs to discuss the content of the above images. Fill in the corresponding concepts below with the serial numbers of the above images

Techno-overload describes how information and communication technology forces users to work faster and longer. Techno-invasion describes the invasive role of information and communication technology in certain situations, where users can stay in touch at any time and feel the need to keep in touch, thereby blurring work-related and personal time. Techno-complexity: Users feel that their computer skills are insufficient forcing them to spend time and effort learning and understanding information and communication technology. Techno-insecurity relates to situations where users feel threatened due to unemployment or because people better understand information and communication technology or automation in other fields. Techno-uncertainty: The continuous changes and upgrades in information and communication technology make users feel uneasy and generate uncertainty, forcing them to constantly learn and adapt to new learning environments and self-learn new information and communication technologies. Techno-learning pressure: Users face technological shocks during the learning process, such as blended courses, using technology to complete assignments, and the techno-stress generated by online learning platforms such as MOOC or online classes using technological means	

(2) Require members to fill in the answers to the following questions on paper

What techno-stress do I have now?

How do I hope to solve my techno-stress problems?

What is the reason why I joined this group?

What help can our group bring me?

What kind of group do I hope our group is?

5. Let the students complete the techno-stress pre-test.

Closing stage:

When the activity is completed, be sure to deal with the activity together with the students.

Questions include:

Leaders use listening, encourage group members to answer the following 7questions and provide timely feedback.

- What does it feel like to do that activity?
- How do you feel before the event?
- How do you feel after the event?
- Why do you think we have to do that activity?
- Now that you feel more comfortable with the group, what will our future meetings look like?

Contact each student at the end of the group to see how they perform.

- Let the students identify the key stages of the group (for example, what are the benefits of the group you like today?)
- Ask the students what they think about this group (e.g., what do they expect? What is the most exciting thing? What might they be worried about?)

Constantly monitor the students to ensure that each student feels inclusive. At the end of the counseling, let the students share with the group one thing they learned in the group today. For example, they may share their knowledge of the group topics, including themselves or others.

Evaluation:

The first counseling mainly aims to familiarize students with each other and clarify concepts. Members have more or less techno-stress, but they are not very clear about the scope of the stress. It is very helpful for students to clarify the purpose of counseling and carry out subsequent counseling programs.

Session 2: Share their stories

——Transition Stage

Objective:

1. Students have a clear understanding of the concept of techno-stress and understand their techno-stress to perform.

2. The concept and types of help that group members seek. and build good trust.

3. Steering group members used the seeking help and problem-solving method to solve the techno-stress problem.

Activity:

1 Students can learn about their techno-stress level Through the "spider web" activity.

2. Perform live to identify and share their unique experiences.

3. Through "kind questions" and case analysis, and the types of help they need. Enable group members to learn and understand methods for seeking help.

Group members:

Eight new students from a private university

Conceptual:

After members get to know each other and feel comfortable in the group, they are committed to the preparation and transformation stage of personal sharing and treatment work(Jacobs et al., 1998). Each member can open up and should have the opportunity to share their own story. Reduce the burden by letting group members discover that others are feeling the same pressure as themselves.

Application theory:

Person-centered therapy

Techniques:

Active, empathic, unconditional, positive attention, live performance, case analysis

Material:

1. Cardboard should be used when putting up posters

2. One box each of Crayons, colored markers, and colored pencils

3. Insect model paper

4. A weaving model of spider webs

Procedure:

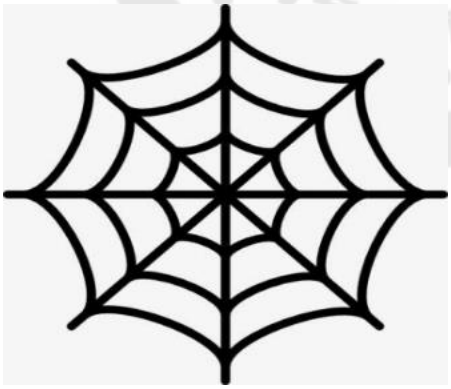
Beginning stage:

1. "spider web" activity

Enter the theme (prepare small gifts, insect model paper, woven spider web model)

(1) Guide activities through storytelling:" is an animal that grows on land and will see females crawling larger than males, mosquitoes will appear black 8 feet in the eaves……"

(2) Require group members to write about recent techno-stress events on sticky notes and post them on a spider web. The closer they are to the center of the spider web, the greater the pressure; let the member write the time, process, and place.



Working stage

2. Sharing stories

(1) Draw the most typical case of frustration on the spider web, ask the member to give a specific description, and then ask the member to perform his situation and emotions according to his description.

Performance examples:

Member A: "Why don't you participate in the "Internet+" Innovation and Entrepreneurship Competition?

Member B: "How can I do it! I can't write a proposal, and my major has relevant code that cannot be applied to the product.".

Member A: Can you specify what software it is?

(Leader asks all members: What does this sketch indicate? Student: It shows pressure. Summary:

This is a behavior of choosing to avoid techno-stress.

(2) The parties will evaluate the members' performance and discuss it together.

3. Case analysis

(1) The leader reads a depressed pressure case, lets the members analyze the protagonist in the case, and each member speaks his thoughts to the character.

(2) If this situation happens to a member, the team member will discuss the educational technology pressure case raised by the teacher, talk about the technical courses offered in their profession, their own opinions, and the challenges and

difficulties faced by educational technology pressure. Each member will explain what measures they will take and how to seek help and solve the problem.

What is the root cause of the crisis in sketch teaching in art schools? How to respond? (Case from the internet)

“Sketching teaching is the core part of art learning or basic training, which solves the problem of how artists observe the world. They can further weave the world into their own images only by learning to observe. However, in many professional colleges, students may not necessarily have a creative level that exceeds the visual effects generated by some software. Art students will soon transition from being unable to draw without photos to drawing without software……”

(3) Team members summarize methods to solve professional techno-stress based on discussion and sharing and record the methods on a large blank paper

The format is as follows:

Professional name	Technical difficulties encountered	Solutions

Closing stage

4. Sharing and feedback (empathy)

(1) What discoveries are your setbacks in your activities?

(2) Discuss today's group.

(3) Assess their group members.

Evaluation:

1. After adding online cases, members have a more positive and easier understanding, and future plans should be better developed and researched based on the characteristics and background of the members when formulating cases.

2. Active listening and unconditional attention positively affected the discomfort of the few group members who had just joined the group.

Session 3: Identifying and expressing emotions

—— Working Stage

Objective:

1. Help members identify the core of their psychological symptoms by handling their emotions in the source of stress.

2. Instruct group members to use good methods to seek help and problem-solving so that group members can learn to deal with problems flexibly.

Activity:

1. Group members play "APP" for half an hour for desensitization treatment.

2 Role-play through leader questioning and card activities, allowing students to explain activities related to techno-stress from different sources to identify stressor activity and member techno-stress source events.

3. Homework assignment technique.

Group members:

Ten new students from a private university

Conceptual:

Facing techno-stress, the group members are guided to change their behavior, change cognition through rational and emotional therapy, understand seeking help and problem-solving, and change their cognitive outcome(David et al., 2005).

Application theory:

Rational Emotional Behavior Therapy (REBT)

Techniques:

Role-play, Desensitization, and ABC treatment

Material:

1. APP software

2. One box each of Crayon, color marker, colored pencil

3. A2 large white paper

Procedure:

Beginning stage

1. Review the last psychological counseling session, have members summarize and share their feelings and one week's changes

2. Desensitization: Let the group members play one or two learning apps for half an hour, help each other, share their learning experience (Funk et al., 2004), and let the students understand that the change in Internet technology is not terrible(Stone & Schaefer, 2019).

1)The method is as follows: Leaders post task instructions on the school's educational technology platform's TronClass discussion board: Team members think about the difficulties they have encountered in the competition recently, search for solutions through CNKI, and find suitable AI to generate an article that solves the competition problem. They are required to upload screenshots of each step to the TronClass discussion board

2The leader found the tasks completed by the two students who had the most discussions on the discussion board and asked these two members to share them separately

3)Team members answer the following question: How do you feel about this activity? Are you proficient in using technology throughout the entire process? Where are the difficulties? Do you think you finally got the answer to the problem you wanted? If not, which link do you think has the problem? How should we improve?

Working stage

1. Role-play

Leaders use questions to ask members so that they can understand the techno-stress in their lives and understand the classification of techno-stress.

Team groups pair up to discuss questions and then role-play to answer them

1.1. When you enter college, you are confused by the multi-platform course selection system. You will select your favorite course in one day. However, there are still so many online classes available today. What should you do?

1.2. What should you deal with When you feel pressure to solve technical problems?

1.3. For the changing news events on the Internet, you think you cannot keep up with the information changes, so you cannot have a common language with your classmates. What should you do?

Note: Leaders explain the process of the activity, be sincere, and frank, communicate, and discuss, provide coping skills, and leaders summarize and discuss.

2. Activity—Find the stress source

Issue cards and ask members to write down where they feel the most technically stressful.

Please take out the attachment form and ask members to fill it out. Among the dimensions of technical pressure, What are the techno-stress difficulties that they most want to solve in the dimensions of techno-stress?

Try to identify a technical challenge for yourself and solve it by seeking help

Note: Humbly listen to the experiences of others and make their suggestions; members discuss and communicate, express themselves sincerely, and provide them with their own experiences and help.

3. Encourage responsive expressions to seek help and solve problems(Ellis & Dryden, 2007)

Encourage team members to repeat responsive language with magnanimity and strength in their expression. With the passage of time, I firmly believe in its benefits.

Here are some useful expressions:

1） I can tolerate things I don't like. I just do not like it. Even if I fail somehow, I am definitely not a failure. I can help each other solve problems through my peers.

2） Nothing is extremely bad; it is just a bit inconvenient. I can solve problems by looking for teachers who are interested in the relevant field.

3） The poor editing of this video is not a matter of my ability; perhaps it is because I have not mastered the method. There are many books in the library, and I will go to study and take a look tomorrow.

Closing stage

Examples can explain emotional ABC homework

First, the client's cognitive-emotion-behavioral interaction is introduced, explaining how the cognitive interpretation of the stimulus context leads to maladaptive emotional and behavioral responses. Next, the meeting structure for the next counseling will include emotional checks, homework review, agenda setting, and priority, discussing the agenda in order (this process design assignment), and summarizing feedback to confirm the week's assignment. The initial homework task is to observe and record your emotional responses.

Secondly, collect the events that trigger the typical negative emotions of the visitors to help them distinguish the relationship between the events, thoughts, and emotions and realize that the key to the negative emotions is not the event itself but the cognitive evaluation of the event. Through these analyses and discussions, visitors begin to see their cognitive patterns and realize that they need to change their cognitive patterns to improve their mood

Finally, the cognitive correction work of stress thoughts is explained to the group members.

The specific practices are: selecting the stimulus situation; naming emotion, evaluating the emotion intensity; introducing the automatic thinking behind emotion,

evaluating the belief degree of automatic thinking; identifying the alternative thought of automatic thinking, and evaluating the belief of alternative thinking; and investigate the change of emotion and behavior, according to the implicit cognitive bias behind automatic thinking.

Homework assignment technique: Complete the "reverse mood diary" and ask group members to give feedback in the next session.

Evaluation:

1. For techno-stress caused by different families and cultures, for example, some students use fewer electronic products in their previous family background and cannot use the mixed teaching model, leaders should fully understand the student's background and let themselves and their group members use mutually understanding language.

2 REBT can be used as a self-help treatment for group members to continue this thinking training after treatment.

Appendix 1: Homework Form: "reverse mood diary"

Mood	Emotional induced behavior	Reverse emotional behavior	duration	Feedback Summary

Session 4: Identifying and understanding emotions

—— Working Stage

Objective:

1. Free the members from the fantasy and evasion's emotions or behavior through specific events

2. Team members can use effective methods to cope with techno-stress.

Activity:

1. Specific scenarios and case analysis activity.

2. Make competitive tapes （Mobile recordings） to teach students how to use positive and responsive expressions.

3. Shadow puppetry sitcoms

Group members:

Ten new students from a private university

Conceptual:

In this counseling, group members are estimated to remove group member fantasy avoidance behavior to find a positive response solution. Rational emotional behavior therapy believes that what triggers emotions and behaviors is not the triggering event but the understanding and attitude toward the event(David et al., 2005). This therapy comprehensively views thinking, emotions, and behaviors. By viewing emotions rationally, we can change behavior and prevent members from fantasizing and avoiding.

Application Theory

Rational Emotional Behavior Therapy (REBT)

Techniques:

Rational emotive imagery, Relaxation training, and the ABC treatment

Material:

1. Mobile recording apps and related software

2. One box each of Crayons, colored markers, and colored pencils

3. Five groups of shadow puppets

Procedure:

Beginning stage

1. Music relaxation module

The leader reviewed the content of the last counseling session. Language-induced relaxation based on music guides members to prepare for participating in activities

2. Leaders provide feedback and discussion on the "reverse mood diary" assignment from the previous class and Scenario discussion activity

During relaxation, the group members choose the following questions to discuss the questions and guide the group members to answer questions to focus on effective and beneficial physical and psychological solutions

1) How do you spend the rest of the time when you fall to the bottom of the cliff and know you cannot survive?

2) What do you do when you are misunderstood as a thief and criticized from all directions?

3) Suppose you are already a famous star, but you have suffered a blow from various aspects due to the failure of the shooting; how do you spend this time?

4) If the crowd will accuse you of being bad. What do you think?

Group discussion and sharing, and leaders give opinions, Emphasize a rational approach to problems

Working stage

2. Make highly competitive tapes (rational emotive imagery) (Roberts Jr & Renzaglia, 1965)

1) In this exercise, team members choose to work in pairs, one is responsible for recording and supervising, and the other is responsible for recording. After recording, they will change roles, and the recorded content includes some irrational ideas, such as "online courses are all water courses, wasting my time, so I choose to hang up and not listen.".

2) Record this person's debate on these irrational ideas, such as "Nonsense! How could all online courses be water courses, and really all the content is useless to oneself?" In the debate, it has realism, logic, and practicality, making the language as powerful and emotional as possible.

3) When groups listen to each other's recorded voices, they will notice the intensity of the debate and give each other valuable feedback. For example, "I think another rational reason in the recording earlier was..." Repeat this process until you are convinced.

4) Group members individually share previous tasks, focusing on handling techno-stress events. The group members recorded their initial ideas, such as fantasies and evaluations of the problem's events and psychology. Then, they recorded their arguments about these initial ideas in the same recording. Debate should be realistic and logical, and strive to make the language of the debate as powerful and emotional as

possible. Then you can listen to some challenging friends - record debit records, they will notice the record's intensity.

5) The leader gave each member a sticky note and asked them to examine what they were afraid of based on their negative avoidance behavior during the recorded activity just now. What is passive avoidance? The leader leads the discussion, and members circle around to share: What is the reason for their positive and rational feedback?? Why? What adjustments would you like to make to make your choices smoother if they can be changed? Why?

4. Shadow puppetry sitcoms

Students will perform a scenario play of fantasy and avoidance using shadow puppetry. They will be divided into pairs to create a scenario play of the fantasy avoidance part from the previous section, with their own theme and framework. One person will play the role of an escapist, and the other will play the role of a supervisory discoverer, with themes such as "A student who is called to answer a question while hanging up in an online course" or "A student who does not know how to code and chooses to stay up late playing online games" and so on.

3. The use of coping methods and expressions activity

(1) Students are encouraged to use healthy coping statements during this counseling. These response tables can be reproduced, and the statement should be tolerant and strong. Here are some useful statements:

I can endure things that I do not like. I just do not like it.

Even if I failed in a way, I was not a loser.

Nothing is scary, just inconvenient.

(2) Summarize important events —— automatic thinking emotions and corresponding intermediate beliefs, and start to identify and correct core beliefs. Analyze the relevant early experiences of forming core beliefs, and reconstruct the early experience to gradually correct the incompetent and worthless core beliefs. We practiced the Core Belief Worksheet. Homework and the "Self-affirmation Form" focus on strengthening group members' findings and affirming their positive strengths.

Self-confirmation table
My efforts can control my time on the Internet
I work very hard, am very responsible, learn new network technology knowledge, and can do it
I am ready to help others. My friends all like me and they will help me
I like knowledge, and I also like learning

Closing stage

4. Get ready to finish up. Leaders asked group members to review the knowledge learned and summarize more adapted new beliefs and solutions.

Evaluation

To challenge irrational beliefs, REBT is more effective; leaders translate ABC theory into cases and train sample students in relevant courses, which helps group members to reduce techno-stress better.

Session 5: Reasons and Reflection

—— Working Stage

Objective:

1. Use exposure therapy to help group members understand that the stress of technology is not as scary as expected

2. Free the members from the strategy of fantasy escape.

3. Lead the group members to see the connection between past, present, and future and correctly view the techno-stress.

Activity:

1. A live animation with divergent thinking and converged thinking.
2. WDEP Plan.
3. The activity of getting to know oneself and others.
4. Activities: Self-help technology to promote self-growth.

Group members:

Ten new students from a private university

Conceptual:

Realistic therapy works through internal control, changing cognition, and improving thinking and behavior. This kind of counseling has brought about changes(Ellis, 2013). The combination of WDEP skills and thinking enables students to focus on the present, find positive coping strategies through real-life therapy, and enable team members to rationally and actively respond to the challenges of current techno-stress. From a practical perspective, ensure that team members have no fantasy and evasion when facing techno-stress.

Application theory:

Reality therapy

Techniques:

Commitment, Self- evaluation, WDEP system

Material:

One box each of Large white paper, a colored pen

Multimedia network (playing videos)

Procedure:

Beginning stage

1. Video Introduction

The reference video link is as follows:https://www.bilibili.com/video/BV12L4y1J72F/?spm_id_from=333.337.search-card.all.click&vd_source=17d17f3a9131fe66de1e3bbb98c74f92

Play and explain animations of divergent thinking and integrated thinking.

Working stage

2. Guide team groups to complete the WDEP implementation plan. The members talk about unpleasant things on campus and their solutions

(Create ways to solve problems (divergent thinking, creative thinking, brainstorming) The specific plan table can be found in the attachment later in this section

Realistic therapy for problem-solving

Integrating divergent and convergent thinking with the reality therapy approach of Glasser(Wubbolding, 2012) .

The leader can take the following steps to schedule the group as a personal problem-solving solution:

(1) W (want) What do you want? Group members generally describe (divergent thinking) how they avoid and fantasize when facing techno-stress.

(2) Direction and Behavior (D): Divide ten people into two groups, and each group should come up with at least three (divergent thinking) ways to solve avoidance and fantasy.

(3) Evaluation (E): Is what you do beneficial or harmful to you? Group members must evaluate whether their behavior can achieve the expected results (convergent thinking).

team discussion, after group discussion and help, the evaluation left the best solution, Remove unrealistic methods that cannot be implemented. Ultimately, each group will leave a maximum of three methods to solve fantasy and avoidance.

(1) Plan (P): Members use aggregation thinking to evaluate and specify a plan. Focus group resources on helping group

(2) Promise: Will you fulfill this plan? Group members make personal commitments to the implementation plan.

(3) Persist: No excuses; No punishment; There is no way out. Make group members accountable for their commitments and, if necessary, revise the plan to ensure its successful completion. Respect individual efforts, but do not accept excuses for not fulfilling commitments.

3. The “commitment activity” of getting to know oneself and others to consolidate the practical activities of the previous chapter

This task is to ensure that the group members of problems and solutions have a realistic understanding of the importance of the task and group members in group life function is closely related, so if you want to improve the mental health of members, promote their effective life change, find the most practical way to achieve group goals, then the group has the responsibility to provide real feedback, selection, and information. If the group members do not want to assume such responsibilities, their behavior may be detrimental to the treatment team's process, thereby making doomed risk decisions and plans and leading to failure.

Talk about what they have gained and experience in the activities.

League members talk about separate entries	Explain	Utterance
gather in the crops value insufficient Point out the merits of having at least one league member	Pay attention to the experience Confirm yourself, including all kinds of expertise The focus is on how to improve it And describe it in detail	Those who do not perceive the strengths of their group members must show them

Closing stage

4. Self-help and self-growth technology activity (self-evaluation)

Members can learn various self-help techniques for self-growth in real-life treatment groups. Another approach is to promote the development of individual members. Alternatives include practice replacing abandonment; positive symptoms replace negative symptoms. This choice helps members identify which behaviors both satisfy their desires and are close to their target behaviors, enabling members to learn actual behaviors and positive symptomatic behaviors. This self-improvement program is a process that promotes the growth of its members.

Groups have played an important role in implementing these alternatives. The following inquiries improved positive symptom behavior among members:

(1) You said you wanted the learning system to be smarter so you do not miss your homework, so what are you doing now?

(2) What else can you do differently to improve the time pressure of using the technology?

(3) What happens to the best thing if you change?

(4) If you change, what could be the worst thing?

(5) What steps can you take to achieve your goals?

Evaluation:

1. For example, some people always feel sad about keeping their privacy, but they are also worried about telling their secrets to anyone. The leader can allow him to imagine that the secret is finally known and to imagine various comments from others. For example, a person who is afraid of having contact with the opposite sex can imagine encountering a familiar situation of the opposite sex in a closed space (such as an elevator). If this person can truly experience deep emotions, he may find that, whatever the disastrous expectation of the emotion, it is only fantasy rather than reality, he will not be destroyed by helplessness and fear. Therefore, experiencing terrible emotions can instead lead to integration and growth.

2. In the self-directed training, the internal conversations were modified to a certain extent, including problem solutions and stress-oriented task-directed

expressions. There are four types of self-expression: preparation, facial quality, coping, and reinforcement. At the beginning of self-directed training, clients should be trained to perceive the emotional state induced by the stressful situation, and this perception can serve as a clue to guide the visitor to begin appropriate self-guidance. The visitor then learns to identify maladaptive self-statements (for example, "I can't handle it"). Next, the therapist demonstrates appropriate behavior when verbally developing four types of effective action plans. Specifically, this process includes an assessment of the material required for the task (e.g., preparation), self-guidance for each session (e.g., facial quality), and emphasis on your ability to offset concerns (e. g., coping, external self-reinforcement (e.g., reinforcement). Then, when the client performs the target behavior, he verbally reads the self-directed words and then practices the target behavior in his mind. Therapist feedback helps ensure that constructive problem-solving approaches and self-conversations can replace prior negative cognitive assessments.

Appendix 1: Implementation Table of WDEP Plan

WDEP PLAN				
Reasons Introduction Idea 1 Idea 1 Idea 3	Feasibility	Enforceable	Usefulness	Specific operation

Session 6: Find ways that will work

—— Working Stage

Objective:

1 Group members were encouraged to maintain optimism in facing difficulties based on alternative hypotheses gathered from logical evidence and behavioral experiments.

2. Group members approach techno-stress optimistically through a positive mental explanation or attribution style.

Activity:

1. Relax training—video

2. Open a door activity

3. Complete group brainstorming sessions on positive and negative psychology

4. Write a positive action diary based on the five factors in the techno-stress.

Group members:

Ten new students from a private university

Conceptual:

Through exposure therapy(Abramowitz, 2013) and positive psychology (Lee Duckworth et al., 2005)-related method treatment, students can understand their fears, face techno-stress, and maintain optimism.

Application theory:

Cognitive Behavioral Therapy (CBT)|, Positive psychotherapy

Techniques:

1. Exposure techniques (Cognitive Behavioral Therapy)

2. Searching for alternative explanations (Cognitive Behavioral Therapy)

3. Brainstorm Up (Positive psychotherapy)

Material:

One box of Paintball pen,

A2 white paper

Procedure:

Beginning stage

1. Relax training

Play positive psychological videos to help team groups relax.

Working stage

1. Communication skills training in —— exposure therapy

Exposure treatment includes the following working steps:

(1) Specify rules and issue instructions on the school's online learning platform on the spot, requiring students to search for the a. principles, b. methods, and c. advantages of exposure therapy, summarize them in their own words, and post them on the homework port.

(2) Determination of exposure levels

The leader has chosen a situation that triggers moderate intensity fear: set completion times of 4 minutes, 3 minutes, and 1 minute respectively. If the student fails to complete the electronic search task within the specified time, the learning electronic system will receive a learning warning again.

(3) Require members to rate their fear index, ranging from 1 to 10, where 10 is considered very fearful

(4) Expose the activity again; members repeat tasks on the e-learning platform and rate themselves until their fear scores have eased3. Role-playing, Interpretation, or specific style (positive psychology)

2. Alternative hypotheses based on 1 complete Open a door activity (Rashid & Seligman, 2018)

2.1 describe your experience of opening and closing doors in the following spaces. Did you immediately see the door open, or did it take some time? Do your disappointment, sadness, pain, or other negative emotions from a closed-door make it harder for you to find an open door? What can you do in the future to make it easier to find that open door?

Think about three doors closing for you. Is there any other door open? Try filling in the blanks

(1) The most important door that was once closed to me was

The open door is

(2) A door that closes due to bad luck or missed opportunities is

The open door is

(3) A door that closes to me due to loss or rejection is

The open door is

2.2 In this step, members will explore how to explain to themselves the reason why this door is closed. Choose one of the examples in the first step and choose the

number that best represents your judgment on the closed and open doors from the options provided. (1-least consistent, 7=most consistent.)

The door number of that closed door is

1)This door is mainly closed because of me or

2)This door is mainly closed due to other people or the environment

3)This or similar door will always be closed or

4)This door is temporarily closed

5) This closed door will destroy everything in my life or

6)This door only affects a certain aspect of my life

If members score high (12 points or higher) on items 1, 3, and 5, it indicates that your explanation of closed doors (setbacks, failures, and adversity) is personalized (mainly due to you), permanent (not changing), and generalized (a closed door will close many other things in life).

If members score high on items 2, 4, and 6, it indicates that your explanation of closed doors is not personalized, but temporary and localized (not affecting all areas of your life)

2.3 After completing the exercise, the leader organizes members to reflect and discuss

1) What is the impact of setbacks? What are the negative and positive aspects of your happiness and happiness? Is this impact comprehensive and long-term?

2) Has this influence brought you a positive impact? What is it?

3) In what ways has the practice of "one door closed, another door opened" enhanced your flexibility and adaptability?

4) Do you think deliberately focusing on the bright side (the open door) may encourage you to minimize or ignore the difficult realities you must face?

5) What caused one door to close, and what helped you open another? Is it easy or difficult for you to see a door open, even if it's just a crack?

5) What does the closed door mean to you now?

6) Do you still have room for further growth? What is this kind of growth like?

7) Think of one or two people who helped you open the door or those who helped you hold the door and let you in.

8) Do you want the closed door to be opened, or do you temporarily ignore it?

3. Group brainstorming

Positive events: Explain why you do this

	Optimism said.	Pessimist said.
Is it individual Is it everlasting Is it general		

Brainstorm yourself to find as many optimistic explanations as possible for this event or experience. Set yourself a challenge; think about 3,5 or even 10. It can help you think about external, temporary, and specific aspects. Don't take yourself off track and prove why these choices are incorrect.

Now, think about the effects of negative events or experiences and describe the worst thing that could happen. Ask yourself about the possibility of this happening, ranging from 1-10. Ask yourself what action you can take to improve this dire situation. Second, identify and describe the best things that might happen. Finally, ask yourself what is most likely to happen. Looking at this issue from a different perspective will likely give a more realistic explanation of the discussed event(Rashid & Seligman, 2018).

Now consider which explanation or belief it is. Think about another, more optimistic explanation for negative events that can motivate you and make you feel more optimistic.

Develop an action plan to improve the action in the best, worst, or most likely circumstances.

Closing stage

4. Action Diary

Write a positive behavioral response diary as per the five techno-stress requirements

At the same time, consider the following questions:

What other positive views do I have on this issue?

What is the factual evidence to support or refute my belief?

What are the pros and cons of continuing to see things in this way? What are the pros and cons of seeing things from different angles?

What constructive actions can I take to express my beliefs? If a good friend also has such a belief, what advice can I give?

Evaluation:

Studies suggest that cognitive therapy is more effective than treatment alone and that dividing each technique of cognitive technology into multiple components may undermine the expected outcome.

Cognitive therapy has good results in reducing techno-stress.

Appendix: Action Diary

Time	Event	Comprehensive chart	Negative psychology	Positive psychology	Reply
	Technical Overload (OV) Technical Intrusion (IN) Technical complexity (CO) Technology is Unsafe (INS) Technical Uncertainty (UN) Technology profit pressure				

Evaluation:

1 As group members experienced strong fear emotions and physiological responses during exposure, motivational interviews and psychological education were conducted before exposure, which enhanced the determination of clients to face difficult tasks. To ensure the smooth progress of the exposure exercises, it is very important to control the difficulty and intensity of the exposure task. Establish a detailed exposure

level table, choose moderate intensity exposure task, talk about exposure learning and practice, and then try reality exposure, each exposure practice before and after the record, at the same time confirm and strengthen the exposure skills, handling exposure failure, etc., these requirements consultants have comprehensive skilled cognitive behavior therapy skills, sustained stable consulting relationship, to ensure the smooth completion of the treatment process.

2 In the stage of cognitive correction, the views of many things have changed to a certain extent. They can objectively analyze the possible results of things and have a certain confidence in their ability to deal with difficulties. However, there is still a lot of anxiety and tension in terms of health and relationships. While I knew my fears were unreasonable, I was still nervous, scared, and out of control. Through continuous exposure to induce stress fear, nonavoidance enhances tolerance of anxiety responses and eliminates negative reinforcement of avoidance behavior.

Session 7: Implement effective methods

—— Working Stage

Objective:

1. Establish the resilience thinking of optimism and strength.

2. Lead the group members to observe the connection between past, present, and future and view the techno-stress correctly.

3. Highlight the importance of the current reality to enable group members to find suitable ways to seek help and problem-solving.

Activity:

1. Share some examples of celebrities with resilience.

2. Share some ways to get your optimistic emotions and make them lucky.

3. Active training activities.

Group members:

Ten new students from a private university

Conceptual:

Members can make truly effective changes through positive psychology, and maintain optimism(Lee Duckworth et al., 2005).

Application theory:

Positive psychotherapy

Techniques:

1. Case sharing

2. Positive psychology- - Emotional regulation technology

Material:

Crayon, colored marker, colored pencil, large white paper

Procedure:

Beginning stage

1. Homework reply, asking members to share the thought diary assignment assigned in the previous class, and asking members to share their own feelings and growth experience

Working stage

2. Case sharing

Share cases of resilience thinking with group members so that students can sometimes understand the confusion of technical understanding. The pressure generated by the prolonged use of technology can achieve the ultimate "luck" through persistence, practice, and vision, thus reducing the techno-stress.

1) Leader's commentary on the opening of the activity

In many ways, our luck is determined by our feelings. We can recall our good luck or count our bad luck. This choice determines how lucky you think you are. Born in an age of relative peace and glory, it is a great blessing. Do you want to have good luck with your ancestors?

Of course, you also need foresight to discover the opportunities. Many of today's population are growing stronger due to uncertain luck or opportunity. When Microsoft was born, IBN was looking for a new personal computer, and Bill Gates did it; Google built on a paid search business model, and Mark Zack "contacted friends at college and created Facebook". While these opportunities may seem obvious now, they were not so then. It takes imagination and courage to seize an opportunity.

2) Team Case Search

The members work in pairs to search for information. Each group finds a celebrity they like who has overcome difficulties and solved stressful events and shares them with each other. What is the strength that celebrities demonstrate in overcoming difficulties? What optimistic traits do you possess?

3. Activity —Be a lucky person

If you want to get luck, use lucky methods

(1) Failure is as simple as giving up (tough). The more you stick, the better your luck.

(2) Movement (strength). Skills are often mistaken for luck, especially by those with poor skills. The harder you are to practice, the better you will be.

(3) Foresight (optimism). You are very grateful for actively reflecting on every day, a team, and daily life. If you look for opportunities in the right place, you can create your own luck in the future.

Recalling recent group collaboration events related to technology, sharing events, practicing thinking sentence structures, and trying to change the mode of thinking from event thinking to positive thinking

Sentence exercises for positive thinking

(1) This is not entirely correct because.

(2) A more optimistic way to approach this issue is.

(3) What can I experience? How to improve.3. Emotional regulation mindfulness guidance training

4 Positive response train**(Rashid & Seligman, 2018)**

Make a habit; think of the benefits of a new idea.

Proactive/constructive	Response
My parents (friends) usually react warmly to my good luck	
Sometimes I feel that my parents (friends) are even happier and more excited than me	
My parents (friends) often ask many questions and show genuine interest in this good thing	
Passive/constructive	
My parents (friends) don't want to make a big fuss, but they are happy for me	
My parents (friends) usually silently support the good things I encounter	
My parents (friends) rarely speak, but I know they are happy for me	
Passive/constructive	
My parents (friends) don't want to make a big fuss, but they are happy for me	
My parents (friends) usually silently support the good things I encounter	
My parents (friends) rarely speak, but I know they are happy for me	
Proactive/destructive	
My parents (friends) often find problems with it	

My parents (friends) remind me that most good things have their negative side as well	
He/ She pointed out the potential negative impact of this good thing	
Passive/destructive	
Sometimes I feel like he/she doesn't care much	
My parents (friends) don't pay much attention to me	
My partner often doesn't seem interested	

As a sharer, think of something meaningful and positive that happened to you, or something you noticed last week, and share it with your peers.

As a responder, consider your strengths and explore how to leverage them in your proactive and constructive responses (such as using curiosity to guide your questions, optimism, and social skills).

Then switch roles between sharers and national applicants. When this training camp is completed, your clinical doctor will ask you some questions about the opposite

(2) Significant advantage evaluation

State at least five advantages of your partner or the person you care about the most in the following advantage items

. Skilled in coming up with new and better ways of doing things

. Likes to explore, likes to ask questions, and is willing to accept different experiences and activities

. Flexible and outgoing: Before making a decision, consider and examine all aspects

. Enjoy learning new ideas, concepts, and facts at school or on one's own

. Friends will ask her/him about important things. Considered to possess wisdom beyond age

. Facing difficulties or challenges, even if afraid, never give up

. Complete many tasks; Being able to refocus and complete tasks when distracted

. He is a sincere and honest person who is trustworthy

Self supplement

After completing the sharing, discuss the following issues

How is the process of marking and confirming each other's strengths?

Have you ever done similar things with your partner before?

What behaviors, actions, or habits do you think important people exhibit that reflect the strengths you have discovered?

Do you share your strengths with each other?

Discuss any areas where the strengths that you have shared and those that you have not shared complement each other.

What can you learn from it?

Closing stage

Homework: Explore your emotional fulfillment. Be aware of how your negative emotions persist and how they affect your behavior. At the same time, pay attention to at least one instance of natural beauty daily (such as sunrise, sunset, clouds, sunlight, snow, rainbows, trees, birds, flowers, fruits, and vegetables). At the end of the day, critically evaluate negative and positive emotions and write down methods to increase positive emotions, especially when you feel pain.

Evaluation:

Many cognitive therapy techniques, such as exposure and rational thinking, come from the West. Combining the local culture and translating it into a technology suitable for collective students is the key to treatment.

Session 8: Effect evaluation stage

—— Termination Stage

Objective:

1. Have more confidence in yourself and find better ways to seek help.

2. Recognize how the group itself changes.

Activity:

1. Summarize and clarify the confusion of techno-stress and consolidate the consulting methods used by group members in the past

2. Imagination training

3 Post-tests to measure the counseling effectiveness of the group members.

Group members:

Ten new students from a private university

Conceptual:

Let the group members identify the real problem with their stressors and find it so that they can have resilience and positive responses. Leaders help members apply what they have learned in the group to real-life situations, which is a process of induction, integration, and transformation(Corey, 2023).

Application theory:

Cognitive behavior therapy (CBT)

Person-centered therapy

Techniques:

Alternative hypotheses

Sincere and unconditional acceptance

Material:

1. Big white paper

2. Crayons, colored markers, and colored pencils

Procedure:

Beginning stage

1. Warm-up exercise

Play pre-collected mindfulness songs, such as "Sunshine after the Rain".

Last group counseling assignment feedback, member sharing, and leader comments.

Working stage

2. Clarifying questions

(1) Leaders disclose specific examples of situations under various techno-stress events, allowing members to choose solutions and requesting collective discussion on which methods are reasonable and which are not

Example 1: A group assignment is about to be submitted to the system, but none of my team members have completed their own parts

Example 2: I saw a news event where the protagonist was too pitiful. Some of the comments criticized him for being too extreme. He posted a few comments and even himself was attacked by online comments

Example 3: Online games are too magical. I originally decided to only play for an hour, but I played them until 3am and missed my morning professional class

Example 4: I am worried that I may not be able to adapt to the technical difficulties of my major courses and fall behind other classmates

Example 5: I have very important things to do now, but my grandmother asked me to teach her how to buy things online

Example 6: Add your own examples

(2) Leader Summary Group Discussion The leader has faith in the paper tube and requires the members to distinguish between reasonable and unreasonable ideas. For example, if reasonable, if irrational. And explain that it is unreasonable.

(3) Imagine the rehearsal training. Ask others for help or find multiple ways to solve the problem.

In response to the above examples, replace the unreasonable solution with the one you provided. You can refer to the following sentence structure and ultimately change it to a good solution

① Replacing the sentence structure of "I afraid of.." with "I can try..." ② Replacing the sentence structure of "I..." with "I..." to "I know....."③ Replace the sentence structure of "I do not want..." "I Should..." with the "I choose..." sentence pattern. ④Replace the " Why...?"What can I do?"".

Members are required to train in a variety of imaginative situations

① I.....②"I....."The sentence pattern.

4. Look back- Summary Activity

(1) The leader summarized the various setbacks and some related solutions in this activity.

(2) Leaders and members will recall some unforgettable things, experiences, and soft music in the group activities.

(3) Each member will describe his or her feelings.

(4) Summary of each member conducted by the leader.

5. The activity of saying blessings to each other

Each member is given an A4 blank paper. The member writes "Blessings to XXX (their name)" at the top of the blank paper and hands it to each member to the right. Other members write one or several blessings on blank paper or use drawings to express their blessings. Then, the member on their right reads out the other members' blessings to the member on their left (if using drawing, it needs to be explained by the drawing member).

Closing stage

6. Techno-stress post-test

7. An electronic letter written to yourself

(1) Group members will write themselves an email explaining the goals and problems they will face in the future (after a month or six months, etc.).

(2) When the role of the team leader is the transmitter, the group members personally edit and send it to the team leader. Send the message at the end time as determined by the group.

Evaluation:

After two weeks of follow-up, group members summarize their cognitive patterns and continue using the core beliefs worksheet for self-correction. At the same time, they will deliberately find some examples and practice new behaviors in ordinary times to achieve good results. Problems caused by technology are now acceptable to some extent.

APPENDIX 4: Phase 1 Personal in-depth interviews coding Steps and Interview Records

The collected data were encoded using the Computer Software. Qualitative research adopts classified empirical method. The study results can be divided into the following three parts:

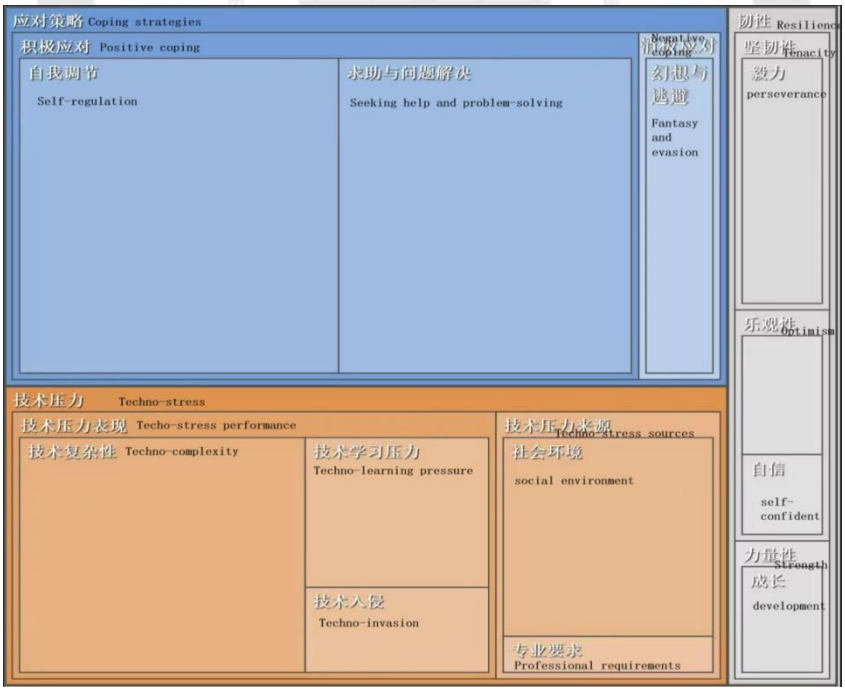
Part 1 Open coding

Part 2 Axial coding

Part 3 Core coding

Hierarchical chart

To more clearly show the three-level coding system, this paper generates a hierarchical structure diagram in the computer software to clarify the hierarchical status of each node in the coding system. See figure for details.



Part 1. Open encoding

First, on the premise of retaining the meaning of the original data as much as possible, the interview text was refined to form a relatively concise concept. Finally, 22

concepts were obtained and made a_1-a_{22}The number of. Then the concepts are classified. The same or similar concepts are concentrated and classified into the corresponding categories through analysis and comparison. A total of 12 categories are summarized, and their A_1-A_{12}See Table 7 for examples of the open-ended coding results.

Table 2 Open encoding table for Techno-stress(Y) interviews

Original interview text	Primary encoding (open code)	
	conceptualization	Categorization
I think the first *can solve*, *oneself solve*, *oneself solve*, then will *help classmates*, classmates, then is bad, are you already want to solve it, really want to solve, but have no way, *can only escape*, or do you think you escape is not a method.	a_1Regulate behavior a_2Ask for help $a_3$escape	A_1Self-regulation(X_5) (a_1,a_{12},a_{13}) A_2Seeking help and problem-solving(X_7) (a_1,a_7,a_8,a_9,a_{10}) A_3Fantasy and evasion(X_6) (a_3)
We had modern educational technology last term, including some downloads. *Then the content of these courses will put students under some pressure.* Before the competition, I was asked to cut some videos. I just found the template and then learned some on the	a_5Use trouble $a_6$learning difficulty	A_3Guide the use of knowledge and skills (a_5,a_6) A_4Capture the interactive course resources between teachers and students (a_7)a_8)

Internet, but I did not learn that it is really difficult to cut videos; technology is everywhere.		

The whole category obtained in the end	A_1Techno-complexity(Y_3) ,A_2Techno-invasion(Y_2) ,A_3Techno -learning pressure ,A_4social environment, A_5Professional requirements, A_6willpower, A_7Actively solve problems, A_8self-confident, A_9grow up, A_{10}Seeking help and problem-solving(X_7) ,A_{11}Self-regulation(X_5) ,A_{12}Fantasy and evasion(X_6)

Part 2. Axial coding

Based on open coding, axial coding is a fusion of independent and dispersed open coding, which further analyzes the internal connection at the initial category level. The category concepts generated in open coding are clustered, mainly by merging similar items and similar meaning coding. Finally, seven main categories are obtained. After the gradual clustering of the coding free nodes, the three Selective core codings involved in the interview content are respectively "Techno-stress(Y)", "Resilience(X_4)" and "Coping strategies(X_8)". The three-level coding table is shown in Table 3.

Table 3 Techno-stress(Y) interview axial coding table

variable	fundamental category	category	reference point
Techno-stress(Y)	The Techno-stress(Y) performance	Techno-complexity(Y_3)	17
		Techno-invasion(Y_2)	4
		Techno -learning pressure	7
	The Techno-stress(Y) source	social environment	11

		Professional requirements	2
Resilience(X_4)	Tenacity(X_1)	willpower	6
	Optimism(X_3)	Actively solve problems	3
		self-confident	2
	Strength(X_2)	grow up	3
Coping strategies(X_8)	Positive Coping strategies(X_8)	Seeking help and problem-solving(X_7)	22
		Self-regulation(X_5)	24
	Negative Coping strategies(X_8)	Fantasy and evasion(X_6)	6

Part 3. Selective coding

Selective coding refers to selecting a "core genus" after a systematic analysis of all discovered concept genera, and the comparative analysis of existing concept genera focuses on those related to the core genera to find the core concepts. After a gradual clustering of the coding nodes, the three Selective core codings involved in the interview content were summarized, namely "Techno-stress(Y)," "Resilience(X4)," and "Coping strategies(X_8)", and the coding table is shown in Table 4.

Table 4 Techno-stress(Y) Interview selective core coding table

Core category	fundamental category
Techno-stress(Y)	Techno-stress(Y) presentation, Techno-stress(Y) origin
Resilience(X_4)	Tenacity(X_1), Optimism(X_3), Strength(X_2),
Coping strategies(X_8)	Positive Coping strategies(X_8), and negative Coping strategies(X_8)

Interview Record

Theme 1: Techno-stress(Y)

1. Source

-What changes have occurred in the classroom format for technical students during the post-pandemic period?

-Do you think Techno stress is a problem for you? What are the main issues?

(1) Techno-complexity(Y_3)

Pr2: Many online APP learning systems are mainly troublesome and complicated, but I think it is very fast to learn this software. You just start from scratch, and you will be a little worried.

Pr3: Next semester, there is a course that the teacher let us study independently. This course is about technology. We had modern educational technology last semester, including some downloads. Then the content of these courses will also put the students under some pressure

Pu4: The teacher said to use programming language. At that time, I thought the code was difficult and could not run at all. My painful point is that every time I do some programming, I have to do some software that needs environment configuration; maybe when I search some tutorials, it also crashes.

Pu5: We have a course about technology, then there will be some pressure,

such as CAD, I learned to engineer, but actually, my personal ability in the arts will be stronger than in terms of science because I need practice, need practical ability will be stronger, then my ability will be weak, so it is very difficult in operation, needs to grind slowly.

Pr1: High school junior high school let me write A composition with handwriting., I still have to use this kind of row spacing, and then the font has to adjust, which sometimes feels very troublesome on the computer.

(2) Techno-invasion(Y_2)

Pu4: If it is because of my own inertia, my own problems, I may be a little sad, so I think if the time can make up for my poor place, then I am willing to

Pu5: If you want to get better results, you will sacrifice extra time to learn this knowledge.

(3) Techno-learning pressure

Pr2: I will feel very desperate. I also feel very pessimistic; I want a little pessimistic bar. Because I cannot do it, and then I will feel very, very collapsed, and then I can not finish the homework, but helpless, they can not do it, feel that the feeling is not good, that ability is not good.

Pr3: The first is very anxious, and then after the anxiety of how to solve.

Pu5: In every classroom, I learned the teacher's knowledge in time, so if he suddenly took a small test before each class, I was under great pressure. Then I might spend more time studying this course every day.

Pr1: Last time, in a professional class, the teacher likes the class to use the content of the computer, professional terms, and not very in-depth explanations. Always a brush with, and then there is no focus, too fast, maybe did not learn to lead to the next own search again.

2. Performance

-"What changes have the pandemic brought to you regarding changing your mindset towards learning technology?"

-"How do you think your cultural and social adaptation experiences will affect your mental health and lead to techno-stress?"

-Will family growth bring you less or more Techno stress? How did you handle its social environment

(1) Social environment

Pr2: If you lag behind, that certainly can not keep up with the pace of The Times. Learn by yourself by adjusting.

Pr3: I also began to buy the computer from the university, and before this was a public class at the school, I contacted the computer more, usually contactless.

Pu4: Because, honestly, this thing is because you have to follow everyone else. Otherwise, you will really be eliminated by The Times. I will choose what I like to take root in and continue doing this to the best degree.

Pu5: For example, because my city has a small population and a small number of students, there will be a small amount of pressure from competition in many aspects. Then, out of the province and to other provinces, I will meet more and more powerful people, so I feel the pressure will be greater.

Pr1: I will have less homework on the Internet in high school and junior high school. Then basically there are no these, you use the computer to do homework, anyway, after university, you often use the computer to do homework, is the teacher let you do what, what you do.

(2) Home environment

Pr3: After arriving at college, my sister will teach me, and my sister will also help me with computer knowledge.

(3) Professional requirements

Pr1: Under study pressure, the first is the sudden change from science to liberal arts. In this major, we have the digital media technology

Theme 2: Resilience(X_4)

-Have you shown a good state and adaptability in the face of difficulties? (For example, what methods successfully solved the techno-stress problem? What Resilience methods were used (resilience, strength, or optimism)?

(1) Tenacity(X_1)

Pu4: I have to do this well since I want to do this myself. I do it, and then I rest

and continue to do it. There are many computer languages, but I do not understand them. I still bite the teeth first and then go through how to look it down.

(2) Optimism(X_3)

Pr3: Find a person to change it all. It is for help, right? I do not really want to give up everything I get out of my hands.

Pr1: Still quite positive, quite an Optimism solution.

(3) Strength(X_2)

Pu4: Although after this thing, I may still think that sentence, that is, to kill me, will make me stronger.

Pu5: After the recovery, or after the matter, I think this difficult time is solved very strongly.

Theme 3: Coping strategies(X_8)

-Are you afraid of Techno-stress in society when facing the post-pandemic environment? How do you plan to respond

-How do you achieve with or without Techno-stress? What Coping strategies are used?

(1) Seeking help and problem-solving(X_7)

Pr2: I will still help with external forces to solve the problem. Like that is like that AI, I use that AI, and if I don't understand, I will ask AI for help, and then I will choose to go to that to try to understand this code. What does it mean? And then next time, if this happens again, I will give AI the answer based on what he is in that AI.

Pr3: I have a software student friend and plan to consult him or read some blogs on the Internet.

Pu4: Cross the major to ask the students of this major how they think about the problem and then solve it.

Pu5: When we draw the CAD and take the computer drawing, there will be some details I will not draw, and then I will ask my roommates, including the computer, to do homework and when we enter the short semester, I have many details, the classmates ask details. If offline is practical, I think I may seek help from my classmates.

Pr1: First, solve it yourself, but then find that you can't. Find a friend to solve it again.

(2) Self-regulation(X_5)

Pr2: I will get to know him first and then ask for help. I think I am more autonomous.

Pr3: Good friend talks, then still has to listen to the song. Sometimes, I can go to Taekwondo or playfield. Actually, combat is good; it is a sports movement.

Pu4: I do not usually ask people first. I usually explore it for myself first. I searched for this content online, went to the library, and read all the books again.

Pu5an: To solve my own pressure, I also rely on myself; I think others do not have much help to me.

Pr1: Then I think it is the first thing that can be solved.

(3) Fantasy and evasion(X_6)

Pu4: I might avoid it because of what I said before. Maybe it was playing the game, and then I was a little shadow. I feel kind enough because there were several other things, but I think it was just because I wanted to integrate into the technology world or have my own opinion. I just wanted to go, but it was a bad result. I probably just don't want to say that later.

Pr1: As A net class just started, A period of time determined to corner overtaking, but after one or two months to the back of the stage, the feeling is so beginning to play, even listen, open hang up, is the parents in supervision, going to sleep, play games, go out to play.

APPENDIX 5 Phase 2 Focus Group Interview coding Steps and Partial Interview Records

The interview audio was converted into text, and the interview content was analyzed qualitatively using Computer Software. Qualitative research adopts a classified empirical method. After the preliminary analysis and sorting of the interview materials, the next step is to code the data using the root theory method. The coding of materials is through the induction and deduction, step-by-step clustering, that is, open coding, axial coding, and selective coding, to establish the category and the relationship between, Explore the changes in students' resilience, coping strategies, and techno-stress levels after the counseling program.

Part1 Word frequency analysis

Before coding, the researchers searched the interview data. After excluding irrelevant words, the high-frequency word cloud is shown in Figure 1. The larger the size, the more the number of mentions. It can be seen from the picture that the words "feeling," "technology," "counseling," "teacher," "plan," and "problem" are mentioned frequently. It can be seen that after the counseling program, most people will face the problem take the initiative to solve it, and actively seek solutions to the Techno-stress problems, such as independent learning and seeking help from others.

Part2 Encoding process

2.1 Open encoding

First of all, on the premise of retaining the meaning of the original data as far as possible, the interview text was refined to form a relatively concise concept. Finally, 28 concepts were obtained, and the A 1-A 28 was numbered. Then, the concepts are classified. The same or similar concepts are concentrated and classified into the corresponding categories and numbered A 1-A 12 through analysis and comparison. The open coding results are shown in Table 39. Due to the limited space of the table, only a part of the case statement is shown.

Table 1 Open coding table

Category	The Initial concept	illustrative sentence
A1 optimism	A 1 decreased anxiety / a2 positive problem solving / a3 increased optimism / a4 increased confidence	When I first encountered problems, I didn't know what to do. Will anxiety for a long period of time, then, will begin to do it, but after the counseling program is equivalent to help me put from anxiety to solve a process to analyze the feeling, I will be more attention to this link which behavior is useful, which behavior is useless, may be a little less anxiety.
A2 strength	A 5 think clearer / A 6 increase action / A 7 improve yourself / A 8 improve efficiency / A 9 active learning	But now, we may first consult the teacher, set down the big framework, and then go to everyone's fine division of labor, to do this thing well.
A3 tenacity	A 10 calm / A 11 perseverance	Is the last hope to get a standard thing, the mentality is to feel more calm, more powerful.
A4 Ask for help and problem solving	A 12 help teacher / a13 help peer / a14 help network / a15 help professionals	After counseling , I will choose to communicate more and ask more questions. Like some relevant professionals, he will tell you, first of all, whether this approach is right or wrong, he will clearly tell you, and then what you do in the first step, what you do in the second step, to change your things.
A5 Self-regulation	A 16 regulating cognition / a17 multiple practice / a18 multiple thinking	Some course contents about the code process is very complicated, so I will be upset. After planning, I will adapt to the appropriate research process, and then practice it by myself, and then find that it is actually quite simple.
A6 Fantasy and escape	A 19 escape decreases	I said the teacher teacher I will get tomorrow, and then the teacher I can learn, and then the teacher I will get next time, and then wait for another duty, and

		then this thing will be empty, only that person to get, so I don't have to get. Now I'll try to work it out for myself because it's still there.
The A7 technology is not safe	A 20 worry being replaced / a21 urgent learning skills / a22 feel classmates threatened	In software engineering, we learn that he can use AI to solve, and then the labor takes time and effort, and it is not as good as AI, so I think this software engineering will really be replaced.
A8 technical uncertainty	A 23 for technology development	Because our software is also updating, and then especially our kind of text, it values that kind of innovation.
A9 technical complexity	A 24 use distress / a25 learning difficulties	Because there are some functions, really because it is just learned, so it is not very understand, to learn a lot of software, I thought it would be a software to learn deeply, did not expect that each software to a little, after learning this forget that.
A10 technical learning pressure	A 26 for pressure reduction	Then, after participating in the counseling program, I felt useful. After I asked the teacher, but even after the counseling program, my pressure was reduced a lot. Mentality will also change, you will become particularly optimistic, very happy.
The A11 technical overload	A 27: A large learning burden	For example, now we have started to offer mixed courses online and offline. I feel that we cannot have to take both sides, because the online course also accounts for credit, and we have to complete it through some technologies, and we have to take into account the offline homework after completion. These online video classes, tests, and so on stress me.
The A12 technical intrusion	A 28 to reduce the leisure time	When we do this work, every time we can cut the video until the early morning, and then, at about 1 o'clock, cut out the things, and then the teacher is sometimes not satisfied, so we cut back and forth from Monday to Friday.

2.2 Axial coding

Based on the basis of open coding, axial coding is a fusion of independent, scattered, and unclear open coding, which further analyzes the internal connection at the initial category level. The category concepts generated in the open coding are clustered, and the method of merging similar items and similar meaning coding is mainly adopted. Finally, six main categories are obtained and numbered B1-B6. The results of the axial coding are shown in Table 2.

Table 2 Interview axial coding table

Fundamental category	Category	Reference point
B1 Optimism	A1 optimism	20
B2 Force	A2 strength	17
B3 Tough	A3 tenacity	4
B4 actively respond	A4 Ask for help and problem-solving	18
	A5 Self-regulation	13
B5 Negative response	A6 Fantasy and escape	6
B6 Techno-stress performance	The A7 technology is not safe	7
	A8 technical uncertainty	4
	A9 technical complexity	4
	A10 technical learning pressure	3
	The A11 technical overload	2
	The A12 technical intrusion	1

2.3 Selective core coding

Selection coding refers to selecting a "core genus" after a systematic analysis of all the discovered conceptual genera, and the comparative analysis of the existing concept genera focuses on those related to the core genera to find the core concepts. After the gradual clustering of coding nodes, the three selective core codings involved in the interview content were summarized, namely, "resilience," "coping strategy," and "Techno-stress." The coding table is shown in Table 2-3.

Table 3 Core coding table of the Techno-Stress Interview

Core category	fundamental category
Resilience	tenacity, optimism, and strength
Coping strategy	Positive coping strategies, negative coping strategies
Techno-stress	Techno-stress performance

Part3. Interview transcript

Theme 1: Resilience

-Are you generally optimistic when you encounter technical problems before the group counseling? What do you usually do with that?

-What about after the group counseling? What changes have happened?

Student 1: Before the problem, my mentality was more anxious, melancholy, and irritable. Generally, I will drag and wait; after counseling, I will choose to communicate more and ask more; like some relevant professionals, he will tell you, first of all, whether this approach is right or wrong, and he will clearly tell you what, and then you do in the first step and what to do in the second step.

Student 2: There must be an anxiety phase before the group counseling. When I first encountered a problem, I did not know what to do. Then, I will begin to do, after the counseling program, is equivalent to helping my anxiety solve a process that analyzes the feeling. I will pay more attention to this link to which behavior is useful and which is useless, maybe less anxiety, and shorten some time. In the case of high pressure, I will have higher work efficiency.

Student 3: Before, I was more anxious. I checked some information on the Internet, then saw if there were any teaching videos, and then I would communicate more with my classmates or teachers and then look for more interesting ways on the Internet.

Student 4: Before, if I felt the Techno-stress, then I was the little Red book and read some on Tiktok. After the program, I had more solutions, such as PS and PR.

Student 5: I will certainly be more anxious and not know what to do. I can only try to solve problems through the known channels; if I can not, there is no way; it is stagnant. After the group counseling, I am more confident in solving these problems and think I will be more active.

Theme 2: Coping strategies

-Before counseling, when confronted with unresolved educational technology problems, please describe your experience and whether you have responded in an evasive way.

-After the group counseling, try to understand the difference between solving problems in reality by admitting objective facts. Have you ever had this experience?

-How do you usually ask for help under Techno-stress? Do you think there is any change after the group counseling?

Student 6: Encounter insoluble problems, of course, to avoid them. If there are any problems with the school network system, such as not listening to the class, the system not answering, or feeling the teacher quickly to me, I will avoid or put my deskmate out and let him answer. Or directly slip out, but after the program, I will think about it first and then ask others; after all, today does not solve or will not.

Student 7, Like MOOC courses. I will listen to them at the beginning, but because there are too many courses and I think they are useless, I will avoid brushing the courses. After the group counseling, I will still brush the class, but I will screen it. If some classes I find useful, I will also look good.

Student 2: Our major is learning digital media technology, and the assignment was good initially. But a little start, open the software. If the submission time is fast, I will just make a mess. It's also an avoidance. Counseling program, I think admitting objective facts is a link to solving the problem, equivalent to let me have a mind, is what is I can do, make a difference, I know what I can't change, equivalent to let me rule out some can't change, then can let me more action, is to know what to do next.

Student 1: Data structure is the soul of our professional, must learn well, but the relevant code if you don't knock, is always wrong; you can use the current technology, with the heart (AI), the teacher-assigned topic of the past, and then you can find the corresponding code, can run, if still hard, to continue to change, in WeChat language, AI help me correct correction until it runs successfully. But I have to say, sometimes the results did not meet the expectations. After the program, in addition to AI, I will ask other students and then study it myself. After all, sometimes AI can not fully meet the expectations. Sometimes, write a review of what is ok if the depth of the problem may not be reached.

Student 7: Some courses about the coding process are very complicated, so I will be upset. After planning, I will study the research process properly and practice myself, but I found that it was actually quite simple. I will also look at the B station and find some learning videos. The teacher actually recommended many kinds of AI to me. The teacher told me that some things can really use AI to help you, which is equivalent to AI giving you a template and then using your creativity to set it.

Student 8: I would say some browser search or TikTok search. I feel that what the AI generates is a little stiff, so I will follow the content I search for and combine it according to my situation and the final answer.

Student 3: When there is some electronic system homework, everyone is unwilling

to do it, and others do not take the initiative; I don't want to do it; I will wonder why I should finish the whole group homework and then avoid it. After counseling, I felt that this homework always has to be handed in and that not everyone garbage in is to take the work up, assign a good task, and then slowly do it.

Student 5: If we really don't know what can consult the teacher; maybe before, we were more ourselves to think, and then or is AI, simple AI is over, but now, we may consult the teacher, the big frame, and then go to everyone fine division of labor, do this thing well. Now, I generally check the information and finally make a plan; I feel a little more relaxed.

Theme 3: Techno-stress

-What type of techno-stress bothers you the most? Please describe what impressed you most.

-What did you feel after the counseling? Is the Techno-stress that makes your headache somewhat relieved?

Student 1: For example, we are starting to offer mixed online and offline courses due to the pressure of educational technology. I can't take both sides because online courses account for credit, and I must complete them through some technologies. After completion, we have to do the offline homework. These online video classes, tests, and so on make me feel pressure. Most importantly, I think the learning effect is not good, but how can I press the tentative button online and watch it repeatedly? The time is flexible, which is stressful, and I like it. In offline words, the teacher should also grasp the class's progress and time but not necessarily provide a comprehensive explanation. After counseling for my behavior, I will follow the rules to complete some online and offline courses. However, in my attitude, I will make more beneficial and helpful choices, such as some online courses. If he is better than the offline one, I will spend more time going online, constantly improving myself, and so on.

Student 7: I want to talk about the uncertainty of technology. I learned the C language last semester and am now learning the C + +. This software must be proficient for our professional industry to get a higher salary. Nevertheless, he does not speak

each language in the teacher's course particularly deeply, so much so that I am very worried that graduation will not be enough.

Student 2: Digital media technology, complexity, then uncertainty and insecurity. I just really learned this thing; everyone's talent is different. It is also possible that they already like it, and then, indeed, the level of our class is relatively uneven; I do feel that others will, so why can't I be safe? The complexity is because some functions are really just learned, so it is not very understandable to learn much software; I thought it would be in-depth software, but I did not expect each software to be a little after learning this. In terms of uncertainty, because our software is also being updated, especially when we learn literature, we pay more attention to that kind of innovation, and the editing way will have new things, and the creativity will not keep up with everyone. My technical content threshold is low; it is still very difficult if it is really a high level. There are concerns about the future. After the counseling, I think the counseling process is also a process of sharing your problems and pressure with others, so it will actually relieve it, but there is not too much anxiety in this matter. After counseling, the behavior is more organized; for example, if a certain homework is difficult, you may analyze yourself at the beginning, how to do this thing, and then encounter problems, what kind of channels to seek help, and then. It is the last hope to get a standard thing; the mentality is to feel calmer and more powerful.

Student 6: Technical uncertainty. Most of the software engineering I learned can be solved with AI, and then the labor takes time and effort and is not as good as AI, so I think this software engineering will be replaced, and my major is a living. In the age of AI, very few people code themselves, and even fewer encode. After the program, I was not so panicky, but this AI replacement trend will not change.

Student 9: When we do this work, every time we can cut the video until the early morning, and then about 1 o'clock, cut out the things, and then the teacher sometimes still not satisfied, we cut back and forth, from Monday to Friday, and then the pressure is very big. I was very anxious the first time, but now it's ok; I am not so anxious; I just feel normal, and cutting the video is much better. There will be some changes in the

mentality after the counseling.

Student 10: There should be technical uncertainty. To get a thing, there will be much software, and then some teachers will let you use the software, some teachers will say let you use the software, such as scanning files, homework does not get the teacher, the teacher recommends the software if you use this, then some things it is different will be very troublesome. After the program, it was it. Initially, I did not have a little obedience, but I mastered the words people asked me, and I can swagger when people say I am fixed.

Student 5: A few months ago, the operating company of Tap GPT AI chat released an AI model called Ora. It is a model that can generate videos based on your text because I major in software engineering, and our industry is an emerging information technology industry. In the era of such rapid technological innovation, artificial AI, which can replace knowledge accumulation, will bring much pressure. After counseling, I will still worry, but I will actively face it, make my knowledge and ability more comprehensive, and think about other ways to lay the foundation for the future.

Student 4: I think technology is complex, is like this time you don't know, feel that a little complicated, is that thing, I take the brush always painting, but the line has been made, and I brush is not very good, that thing I made several hours to fix, three or four hours to fix, also do not very good. After counseling, I later checked the method on the Internet and then found a very simple way. I feel relieved; the mentality before was very difficult, but now I feel quite simple. It just feels like much easier than before.

Group interviews revealed that words such as "feeling," "technology," "AI," "counseling," "teacher," "plan," and "problem" were frequently mentioned. It can be seen that after counseling programs, most people will face problems, proactively solve them, and actively seek solutions to techno-stress problems, such as independent learning, seeking help from others, and utilizing artificial intelligence. Some students are still concerned about technological changes but are willing to accept reality and try solutions instead of avoiding them.

APPENDIX 6 Quantitative analysis scale and prediction scalar

Table1 Quantitative analysis scale and prediction scalar

Quantitative analysis scale and prediction scalar	Self scale/predictive variable	Cronbach's alpha–coefficient	scale Entry
Chinese version of resilience scale (CD-RISC)		0.89	25
	Tenacity	0.88	13
	Strength	0.80	8
	Optimism	0.60	4
Simplified Coping Strategy scale （SCSQ）		0.811	20
	Self-regulation	0.760	8
	Fantasy and evasion	0.749	7
	Help-seeking and problem-solving	0.737	5
Techno-stress Scale		0.83	23
	Techno-overload (OV)	0.89	5
	Techno-invasion (IN)	0.81	4
	Techno-complexity (CO)	0.84	5
	Techno-insecurity (INS)	0.84	5
	Techno-uncertainty (UN)	0.82	4

Table 2 Index of item-operational definition congruence (IOC) and Cronbach's alpha – Coefficient

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5	Lecturer SU SHUYING	Xi'an Eurasia University

Questions	IOC value	Cronbach's alpha– coefficient
Resilience Scale(α = 0.895)		
1.I can adapt to change in my life.	1	0.888
2.I have an intimate and safe relationship.	0.8	0.892
3. Sometimes fate or God can help(I need luck).	0.8	0.901
4. I can deal with whatever happens.	1	0.914
5. Past successes give me the confidence to face challenges.	0.8	0.888
6. I can see the humorous side of things when dealing with bad things.	1	0.892
7. Dealing with stress makes me feel powerful.	0.8	0.888
8. After experiencing hardship or illness, I can recover quickly.	0.4	0.888
9. I'm ready to accept things happen for a reason.	0.6	0.892
10. No matter what the result is, I will do my best.	0.6	0.888

11. I can achieve my goal.	0.8	0.889
12. When things seem hopeless, I won't give up easily.	1	0.889
13. I know where to go for help.	1	0.89
14. Under pressure, I can concentrate and think clearly.	1	0.888
15.I like to take the lead in solving problems.	1	0.89
16. I won't be discouraged by failure.	0.8	0.888
17. I think I am a powerful person.	1	0.887
18. I can make unusual or difficult decisions.	1	0.89
19.I can deal with unhappiness.	1	0.888
20. I have to act according to my foremonition.	0.8	0.895
21.I have a strong sense of purpose.	0.8	0.892
22. I feel that I can take control of my life.	1	0.888
23.I like the challenge.	1	0.889
24. One works to attain one’s goals.	0.8	0.889
25. Pride in your achievements.	1	0.888

Table 2 Index of item-operational definition congruence (IOC) and Cronbach's alpha – Coefficient

Questions	IOC value	Cronbach's alpha– coefficient
Coping strategies scale (α = 0.789)		
1.I Relieve yourself through work, learning, or some other activities.	0.8	0.774
2. I can talk to people and tell your troubles in your inner heart.	0.8	0.783
3. I try to see the good side of things.	0.8	0.772
4. I change my mind and rediscover what's important in life.	0.8	0.772
5. I don't take the problem too seriously.	0.8	0.772
6. I stick to your position and fight for what you want.	0.8	0.777
7. I can identify several different ways to solve the problem.	0.8	0.785
8. I seek advice from relatives, friends, or classmates.	0.8	0.795
9. I change some previous practices or my own problems.	0.8	0.783
10. I learn from others' solutions for handling similar difficult situations.	0.8	0.778
11. I cultivate hobbies and actively participate in cultural and sports activities.	0.8	0.775
12. I try to control my disappointment, regret, sadness, and anger.	0.8	0.776
13. I try to take a break or have a vacation and wisely put aside problems (annoyances).	0.8	0.779
14. I relieve worries through smoking, drinking, taking medication, and	0.8	0.795

eating.		
15. I think that time will change the status quo, but the only thing to do is to wait.	0.8	0.781
16. I try to forget the whole thing.	0.8	0.78
17. I rely on others to solve problems.	0.8	0.777
18. accept the reality because there is no other way.	0.8	0.784
19. I will fantasy some miracle may happen and change the status quo.	0.8	0.784
20. I comfort me.	0.6	0.779

Table 2 Index of item-operational definition congruence (IOC) and Cronbach's alpha – Coefficient

Questions	IOC value	Cronbach's alpha– coefficient
Techno-stress scale (α = 0.927)		
1.I am forced by this technology to work much faster.	0.8	0.928
2. I am forced by this technology to do more work than I can handle.	0.8	0.925
3. I am forced by this technology to work with very tight time schedules.	0.8	0.925
4. I am forced to change my work habits to adapt to new technologies.	1	0.923
5.I have a higher workload because of increased technology complexity.	1	0.923
6. I spend less time with my family due to this technology.	0.8	0.923
7. I have to be in touch with my work even during my vacation due to this	1	0.923

technology.		
8. I have to sacrifice my vacation and weekend time to keep current on new technologies.	1	0.922
9. I feel my personal life is being invaded by this technology.	0.8	0.923
10. I do not know enough about this technology to handle my job satisfactorily.	1	0.923
11. I need a long time to understand and use new technologies.	1	0.923
12. I do not find enough time to study and upgrade my technology skills.	1	0.923
13. I find new recruits to this organization know more about computer technology than I do.	0.8	0.925
14. I often find it too complex for me to understand and use new technologies.	1	0.923
15. I feel a constant threat to my job security due to new technologies.	1	0.922
16. I have to constantly update my skills to avoid being replaced.	0.8	0.925
17. I am threatened by co-classmates with newer technology skills.	1	0.923
18. I do not share my knowledge with my co-classmates for fear of being replaced.	1	0.924
19. I feel there is less sharing of knowledge among co-classmates for fear of being replaced.	1	0.924
20. There are always new developments in the technologies we use in our organization.	0.8	0.926
21. There are constant changes in computer software in our organization.	1	0.926
22. There are constant changes in computer hardware in our organization.	1	0.926

23. There are frequent upgrades in computer networks in our organization.	1	0.926
24. When using technology-related teaching in the classroom, I feel stressed.	1	0.923
25. When learning and using online education platforms (such as TronClass and MOOC), I worry about not being able to do well.	1	0.923
26. When there are test and homework reminders on the learning platform, I may panic.	1	0.923
27. I find it difficult to switch between learning states on different technology platforms.	1	0.924

APPENDIX 7 Other related attachments

ETHICAL CLEARANCE CERTIFICATE

西安欧亚学院

ETHICAL CLEARANCE CERTIFICATE

Certificate Reference Number: OYKL2024-01

Project title: **The Impact Of Resilience and Coping Strategies on Techno-stress and Reducing Chinese Students' Techno-stress Through Integrative Group Counseling**

Nature of Project: Doctors

Principal Researcher: MI Wenting

Supervisor: Patcharaporn Srisawat

Co-supervisor: Skol Voracharoensri

Xi'an Eurasia University Ethics Committee hereby give ethical approval in respect of the undertakings contained in the above-mentioned project and research instrument(s). Should any other instruments be used, these require separate authorization. The Researcher may therefore commence with the research as from the date of this certificate, using the reference number indicated above.

Please note that the Eurasia University must be informed immediately of

. Any material change in the conditions or undertakings mentioned in the document

. Any material breaches of ethical undertakings or events that impact upon the ethical conduct of the research

VITA