

EFFECTS OF JOURNALING: A STUDY ON THE BENEFITS OF JOURNALING IN
CHINESE ADOLESCENTS WITH ANXIETY

by

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A thesis
presented to Lakehead University
in fulfillment of the
thesis requirement for the degree of
Master of Education

Thunder Bay, Ontario, Canada, 2021

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Author's Declaration

I hereby declare that I am the sole author of this thesis. The work contained herein is my own except where explicitly stated otherwise in the text, and that this work has not been submitted for any other degree or professional qualification. This is a true copy of the thesis, including any required final versions, as accepted by my examiners.

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12th May 2021

Abstract

Academic performance plays a strong role in how Chinese students perceive their success throughout their adolescent years. As a result, this group of young people are left vulnerable to developing anxiety-related issues as they strive to perform better academically. The purpose of this study was to look at how journaling could potentially reduce the anxiety experienced in Chinese secondary school environments. It was hypothesized that students who received the journaling treatment would have lower levels of test-anxiety than those who did not. It was also hypothesized that students who had lower levels of anxiety would achieve higher grades than those with higher levels of anxiety. The results of this study suggest that journaling for 20 minutes did not have any effect on lowering anxiety levels or improving academic performance in Chinese adolescents. However, conducting a study on anxiety during COVID-19 may have made it difficult to accurately measure anxiety, thus, the results of this study are not supportive of previous research into this field. The potential to reduce test anxiety through journaling should be explored in future research when the educational environment returns to what it was prior to the pandemic.

Acknowledgements

I would first like to thank my thesis advisor Dr. Tanya Kaefer of Lakehead University. She has always been available for guidance and without her constant mentorship, this thesis would not have been possible. I will be forever grateful for her help in making my dream of conducting this research come true.

I would also like to extend my thanks to Dr. Sonia Mastrangelo as the second reader of my thesis. Dr. Mastrangelo has provided in-depth feedback to my paper and this has allowed my paper to evolve in a way not possible without her.

Finally, I would like to thank my friends and family who have given me support and encouragement throughout this whole process. You have been a beacon of positivity and I am very appreciative of your presence in my life.

Dedication

I dedicate this thesis to my family. A special thank you to my mother, Jelena Bosanac, who has dedicated many years to raising me and loving me regardless of what path I chose to take in life. You have and will continue to share your warm love towards me, and I am very grateful for that. Thank you to my sister, Aleksandra Kunovic, who has always been there as a solid support system and will never let me face any challenge alone. I know you are always there for me, and I want to recognize and thank you for that. Finally, thank you to my Tata (father), Rade Bosanac, who left this earth 15 years ago but continues to walk alongside me in my heart as I navigate my own path. I will forever live with your memory in everything that I do. I wish you were here in person to see this, but we will reconnect in Spirit one day and we can share this experience when we meet again. I love and will continue to love all three of you at a level words cannot properly express. Thank you for being my family.

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Chapter I: Introduction

For Chinese students, their success is significantly defined by their academic performance (Hu & Zhang, 2017) although historically this has not always been the case. In the 1970s, Chinese education was seen globally as being inclusive to students of all socioeconomic backgrounds, widely accessible, and not driven entirely by the motivation to only gain a diploma (Pepper, 2000). However, by the 1980s, the government had enforced policies to promote “competition mechanisms” that were aimed at creating academic competitiveness in students (Zhao, 2011). A possible reason for the increased academic competition is because starting in the late 1970s, China’s government began shutting down secondary school institutions in an effort to reverse the equalization of quantity and quality in education that the previous government enacted through Mao Zedong’s leadership (Pepper, 1990). The exact reason for increasing academic competitiveness remains a mystery as the government was cautious about publicizing these cutbacks in the first place, and public feedback was not encouraged (Pepper, 1990). To date, academic competitiveness in China remains strong and it has resulted in an education environment that is entirely based on exam score results. Teachers are being assessed by their students’ test scores and students are also being assessed by the average scores of each graduating class (Zhao, 2011). Within each city, school districts are ranked and compared to test scores of all other districts (Zhao, 2011). This competition at every level of education trickles down to the individual student and it is a primary source of anxiety for them (Zhao, 2011).

Increased study time for students has been a response to this highly competitive environment. A recent study by Luo (2018) reported that 30% of Chinese adolescents spend more than two hours daily on their homework, and 45% of them take extra-

curricular tutorial classes to continue their studies after class. In addition, their sleep has been negatively impacted with 94.4% of Chinese teens reporting less than eight hours of nightly sleep (Wang et al., 2016).

China has tried to tackle the issue of mental health through government policy. In August of 1999, the Chinese government issued *The Opinion on Strengthening Psychology Education for High School Students and Elementary Students* - a policy which aimed to educate young people on mental health issues with the hope that they could learn how to cope with them more effectively (Hongyan, 2004). According to the research published by Hongyan (2004), several psychosocial hotlines popped up around China and they functioned as a method to protect the mental health of children in China. However, there is no follow up literature available that reveals any possible benefits of this policy on the mental health challenges experienced by Chinese adolescents.

The combined pressures of adolescence and the competition for high academic performance in school environments, leave youth vulnerable to developing anxiety-related issues. Elsdon-Clifton (2005) explained that the high-school experience is a transformative experience for adolescents. For Chinese students, like all adolescents, the teen years are a turbulent stage since teenagers go through the most physiological, psychological and cognitive changes they will ever endure throughout their lives (Byrne & Mazanov, 2002). In a study by Hesketh and her colleagues (2010), they found that over one third of Chinese children said they experienced psychosomatic symptoms at least once a week. 81% of students also reported that they worried often about their exams and 73% of them were physically punished (Hesketh et al., 2010). Working specifically within a Chinese population is of great interest to me since reported anxiety rates in Chinese youth has been increasing (Xin, Niu & Chi, 2012; Luebbe, Tu & Fredrick, 2017). In addition, the suicide rate for adolescents in China is approximately three times greater than the global average

(Hesketh, Ding & Jenkins, 2014). Sadly, one of the predictors of suicide is poor academic performance (Hesketh et al., 2014). In combination with academic pressures and adolescence in general, it is clear why so many Chinese youth are struggling with anxiety-related issues (Huijun & Prevatt, 2008).

Barriers in Accessing Mental Health Help

Culturally, Chinese youth face many barriers that would prevent them from seeking help with their mental health issues (Tian, Jiang & Huebner, 2019; Yip, 2005). The perspective in Chinese culture is often that people should repress their emotional issues for the sake of keeping societal peace and hence mental health issues are not discussed (Tian, Jiang & Huebner, 2019; Yip, 2005). There is also an important “mianzi” (face) culture in China, which means that individuals are encouraged to hide their stress from others and are discouraged from seeking help for issues related to mental health (Tian et al., 2019). People who seek help are seen as being unable to solve their own issues, and are negatively judged by others (Tian et al., 2019). Thus, Chinese people may be reluctant to seek help for their psychological issues for fear of being stigmatized by others in their community (Leong & Lau, 2001).

For those that do seek a diagnosis for depression and anxiety, studies have shown that only a small portion of people are identified as suffering from mood disorders and receive treatment. A series of studies by Qin and colleagues (2008; 2010) found that only 4% of patients were diagnosed as having depression from those that came in reporting mental health issues, and from that small percentage, only 3% were prescribed antidepressants. In China there is still a low diagnostic and low treatment rate for mood disorders, which could act as another barrier for Chinese people seeking mental health treatments.

Research suggests that there are several barriers preventing students from seeking out mental health treatments specifically, such as having no access to care, the inconvenience of having to seek out help, a negative perception of the effectiveness of a treatment as well as a personal lack of perceived need for help (Vidourek et al., 2014). Research done by Vidourek and colleagues (2014) found that the top individual barriers to students seeking mental health help were embarrassment, denial and not wanting to be stigmatized as crazy. Minor barriers included not having insurance, not wanting to be on medication and not wanting to seek out help from someone (Vidourek et al., 2014). This study suggests that there is still a stigma among young people about mental health, and the thought of being labeled or seen differently by fellow students is enough for a significant number of students to remain quiet about their struggles.

School-Related Anxiety in Chinese Youth

Pearson, Janz and Ali (2013) looked at mood disorders and found that in general, mood disorders of various kinds were highest in the 15-24 age group. However, within that age group, anxiety-related disorders were found to be higher in Chinese rather than teenagers from other countries (Delvecchio et al., 2014). Chinese teenagers on average scored 35.1 on the Spence Children's Anxiety Scale, Italian teenagers scored 27, German children on average scored 22.7 and Dutch children scored 16.6. (Delvecchio et al., 2014; Essau et al., 2008; Muris et al., 2000). A study by Ye, Posada and Liu (2019) found that Chinese adolescents in particular deal with increased levels of academic stress compared to their Western counterparts. This assumption is made based on research that found that Western adolescents experienced school stress primarily in their later teen years, and before that, the primary stressors are from family and romantic relationships (Seiffge-Krenke et al., 2009). Alternatively, Chinese adolescents reported that academic stress throughout all years of

adolescence (Ye et al., 2019). A potential reason for this disparity is that Chinese students have much more academic competition as well as enormous pressure to perform well on their college entrance exams “Gaokao” (Ye et al., 2019). The Gaokao is globally considered one of the most high-stakes examinations as this is the only determinant universities consider for admission into their institutions (Wang, Li & Luo, 2020). All students that wish to apply to university must write this exam and the exam is only offered once a year (Wang, Li & Luo, 2020) In addition to university admission, a student’s performance on the Gaokao is directly related to family honor, so there is both academic and family pressure to perform well on this exam (Wang, Li & Luo, 2020). In their research on time spent on homework, Hu and Zhang (2017) found that Chinese students spend more time on homework and get less time to sleep and participate in recreational activities like sports than Western students; Chinese students on average were found to spend about 206.67 ± 78.26 minutes daily on homework, while their American counterparts spend on average 161.25 ± 69.63 minutes daily. This could contribute to greater anxiety as they have less outlets to relax and enjoy themselves outside of their studies.

Tian and colleagues (2019) found that Chinese adolescents are particularly vulnerable to perceived school stress (PSS) because of the “mianzi” culture in China. In China, “mianzi” refers to the reputation an individual attains in their social circle through their interactions with others, wealth and through the behaviors of those they associate with (Li, 2020). There is social pressure to maintain a respectable public identity (Li, 2020); thus, even if students are feeling overwhelmed by school, they may not want to cause issues within their family or social circles, and thus are more likely to hide their struggles from people around them (Tian et al., 2019). Research done on Western teens revealed that high levels of extraversion are negatively correlated with PSS, as extraverted teens are more likely to seek support for their

troubles (Tian et al., 2019). However, this study found contradicting findings for Chinese teenagers as extraverted teens within this population still have the cultural impact of saving face in order to maintain a good image. This research suggests that Chinese adolescents are more vulnerable to school-related anxiety than Western adolescents since they have a unique cultural factor that may prevent them from seeking mental health help.

Additionally, family dynamics may greatly impact Chinese adolescents. In China, there was a one-child policy enacted in the 1980s that was lifted in 2016 (Pletcher, 2019). This created several generations of one-child families; hence many teenagers are from one child families with parents that put extreme pressure on them to be successful (Hu & Zhang, 2017). Chinese parents consider children who have exceptionally high grades to be successful as they will be the ones to get into “good” colleges and get “good” jobs in the future (Hu & Zhang, 2017). In China, there are certain post-secondary schools that are considered better than others, and they place a lot of importance on the job prospects from different programs (Kamal Basha et al., 2016). For this reason, parents of Chinese students put great effort into making sure their children are academically successful and the children feel enormous pressure to live up to their families’ expectations of them (Zou et al., 2013). However, research suggests that high levels of parental involvement in their children’s academics is not necessarily seen as negative in China compared to their Western counterparts (Wang & Cai, 2017). In Chinese, “guan” translates to “govern”, and Chinese adolescents may understand parental governance of their lives as an act of love rather than a negative interference as evident in Western adolescents, who strive for independence (Wang & Cai, 2017; Chao, 1994). Parental pressure is another cultural factor within China that may explain why students who are suffering from PSS would be less likely to seek help.

The Impact of Academic Work on Anxiety

A study by Ye and colleagues (2019) reported that there was a significant negative correlation between reported levels of stress and academic achievement. This study may suggest that academic stress impedes student academic achievement or that low academic achievement increases stress levels. Goldstein, Boxer and Rudolph (2015) also found that higher levels of academic stress were associated with lower grades, greater anxiety, and poor social relations. Students who had greater stress were found to experience more test and performance anxiety, and subsequently lower academic performance (Goldstein et al., 2015). Since journaling has been found to reduce anxiety (McCarty & Faulkner, 2020), there is a need to explore this strategy to possibly circumvent test taking anxiety specifically for students whose academic potential is being impeded by their own anxiety (Curl, 2008).

Liu and Lu (2011) found that stress negatively impacted the academic achievement of 87% of Chinese secondary school students. More specifically, they discovered that stress from negative student-teacher interactions impeded performance on assessments. De Wit, et al. (2011) found that both teachers and peers tend to neglect anxious students by failing to support them. This neglect from teachers is not because they choose not to do anything about it, but they may not be aware of any issue and therefore never approach the student to offer any help. The study looked at student mental health throughout their high school years and noticed that as students entered higher grade levels, their mental health difficulties increased, while their support decreased. This study suggests that a reason for the increase in mental health challenges could be that if students feel that they are alone in their battles, they will be unlikely to reach out for help, resulting in greater mental health issues (DeWit et al. 2011). Another possibility is that the school system increases extrinsic motivation as the content becomes increasingly more demanding and high stakes, which could increase academic

anxiety as well (Harter, 1981).

In a study by Goldstein and colleagues (2015) it was found that teacher-student relations declined as students transitioned to higher grades. As students grow more self-conscious and feel greater competition among their peers, teachers implement strategies in the classroom that promote this competitiveness through testing and placing greater emphasis on academic performance rather than taking a student-centered learning approach to mediate academic anxiety (Goldstein et al., 2015). Due to standardized testing, student-centered learning is absent in Chinese classrooms (Zhao, 2011). Student-centered learning places students in a more active role to their learning experience and emphasizes collaboration and creativity in the learning process (Bond, 2016). In this dynamic, students and teachers all work together to create learning experiences that students find interesting and places students in a role where they are actively creating their learning experiences rather than being passive recipients of information (Keiler, 2018). Research by Cooper and colleagues (2018) suggests that if active learning is implemented correctly, student anxiety in the classroom can be reduced. Therefore, there is a critical need for educators to make changes to their classrooms to reduce growing anxiety in students. Journaling in the classroom may be one potential way to address this need, as journaling can create one-on-one dialogue between students and their teachers (Walker, 2006).

Test Anxiety in Chinese Adolescents

Within the realm of academic anxiety, test anxiety is a situation-specific form of anxiety that students experience prior to or during a test (Shen et al., 2018). Test anxiety is made up of two aspects, emotionality and worry (Hembree, 1988). Emotionality refers to the physical experiences that come with anxiety (panicked feelings, increased heart rate, nausea, dizziness, etc.), while the worry component refers to the concerned thoughts about how well

one will perform on the test (Hembree, 1988).

Research found that 45.9% of China's senior high-school students have severe test anxiety (Shen et al., 2018). As mentioned previously, the *Gaokao*, a national standardized test that all Chinese high school students must write if they wish to pursue post-secondary education, determines the institution that a student can attend. This exam is considered the most important test of a student's life, and because of the surmounting pressure to be successful on this examination, Chinese students are vulnerable to extreme levels of test anxiety (Shen et al., 2018).

Mental Health and Academic Achievement

Relatively few studies address how positive mental health intervention strategies impact academic achievement. It is difficult to isolate a correlational relationship between mental health and academic achievement because there are many other factors that may influence higher grades (Pianta et al., 2008), such as positive school environments and supportive interactions between students and teachers. A recent study by O'Connor et al. (2019) found small associations between positive mental health and academic outcomes except in grammar and punctuation. Even though the reasons behind the associations could not be determined directly from the study, it might be that the positive mental health of students could allow them to have more effective academic experiences (O'Connor et al., 2019). It could also be that the stronger academic performance allows students more time to focus on developing positive mental health strategies (O'Connor et al., 2019). The study found small positive associations between academic outcomes and positive mental health across a variety of academic subjects (O'Connor et al., 2019). It is important to note that this study was conducted with Grade 3 Australian students over a 3-year period, so the findings may not transfer to an adolescent Chinese population, however they do support the theory

that improved mental health will subsequently improve academic performance in students.

Science courses may be a particular source of anxiety for students because they are intimidated by the course material (Thiet, 2017). A recent 2019 study by England, Brigati, Schussler and Chen found a significant correlation (0.751) between perception of course difficulty and final course grades, especially for females, non-Caucasians, and students who took fewer Advanced Placement (AP) classes. These courses can be intimidating to students because the content is often highly technical and quantitative, which can leave students feeling unsure about their abilities to succeed in the coursework (Betz, 1978). Although students naturally compare themselves to other students in the classroom, in a science course there are traditionally no opportunities for dialogue around these feelings, and therefore students feel anxious and assume they are the alone in experiencing these feelings (Theit, 2017). However, it was found that oral communication, even while feeling anxiety, slightly increased grades (England et al., 2019). In the study by England and colleagues (2019) they found that the effect of communicating in class despite having anxiety increased grades. The exact reason is unknown, but it could be that the students were pushed to feeling a need to be engaged in the class or that knowledge is socially constructed. Since responding to verbal questions in the classroom has been shown to increase anxiety, journaling might be an alternative way for students to engage in dialogue and reduce their anxiety, while still benefitting from the oral communication happening in classrooms (England et al., 2019).

Research looking at the relationship between mental health and academic achievement is limited in Western literature, and non-existent in Chinese studies. In a study by O'Connor, et al. (2017), it was found that students with higher reports of positive mental health retained more information and had better academic achievement compared to those with lower mental

health levels. This trend transitioned into their young adulthood years, which suggests that developing positive mental health in adolescence will be beneficial to current academic performance and have long term benefits for students as they transition to the post-secondary years (O'Connor et al., 2017).

Benefits of Journaling on Emotional and Mental Health

One factor that may help students cope with anxiety in school is journaling. For the context of this paper, the term “journal” will be used to refer to both the journal and memoir as defined by Kawaura and colleagues (1998) to include both facts and/or written sentimental emotions. Journaling, as defined by the University of Rochester Medical Center, is to write down emotions and thoughts as to better understand them (Watson, Fraser & Ballas, n.d.). Journaling is a private, individual activity that protects students from peer judgement since nobody knows what others are journaling about. Therefore, the confidential nature of journaling is useful for helping with this issue of privacy protection. Stout (1993) notes that journaling is a place where students can have “silent conversations” with themselves, and this is key in the usefulness of journaling, as students can freely write about their thoughts and emotions without feeling worried about being persecuted by others. Hubbs and Brand (2005) argue that journaling is a tool with a purpose to transform perceptions of situations. This is where the power of journaling lies for students in the classroom if implemented responsibly. Students can regularly feel like their schooling is pointless because it is unrelated to their future goals, especially if these goals are ill-defined (Yazzie-Mintz, 2007). This may lead to difficulties dealing with their anxiety because they feel helpless in their circumstances. However, the Hubbs and Brand (2005) study shows how journaling can help transform the way students look at their situations, which subsequently could assist them in reducing their negative emotions and thoughts. A study by Ross (2017) also found that perspective shift

writing was effective in changing the negative perceptions of mental health patients and had long-term benefits on reframing how individuals perceive a situation.

Perspective shift writing is a writing technique where an individual writes from a different viewpoint to help them change their own perspective (Ross, 2017). These two studies showcase how journaling can effectively change the way individuals view their circumstances in life, thereby decreasing anxiety levels and shifting negative thoughts to more positive ones.

In addition to serving as a tool to shift perceptions, journaling allows students to think critically about content and to think deeply about their futures (Sendall & Domocol, 2013). When in the midst of anxiety, students may find it difficult to find a purpose to their hard work and subsequently stop putting effort into their studies. It is important to provide students with a tool to focus on the outcome of their hard work. Journaling holds the potential to not only reduce anxiety about current situations students face, but long-term anxiety about their futures as well. Curl (2008) noted that there is a cathartic effect caused by journaling. Individuals who put their worries on paper can cognitively release it from their minds. Once they can see what is troubling them, it is easier to see that the problem may not be as grave as when it was in their minds, and they can work towards finding a solution. As journaling is not normally part of a science curriculum, this study hopes to explore ways to integrate this kind of self-expression into the science classroom.

There is also evidence to suggest that students actually enjoy the journaling process, which may lead to additional emotional benefits as they do something enjoyable in class. A study by Fritson, et al. (2013) found that 22% of their participants enjoyed the process of journaling, which is a significant motivational factor for educators to implement in classrooms. Even though the other 78% of participants did not comment that they enjoyed the

journaling experience, it is important to note that there were no negative remarks about the journaling experience, and no students wrote that they felt it was a waste of time (Friston et al., 2013). If there are multiple benefits from expressive writing or drawing, the beneficial impacts on students' mental health and academic success are promising. Since schooling can seem to be an arduous task that students feel forced into with little enjoyment, journaling may be that sole positive academic experience (Moeller, Brackett, Ivcevic & White, 2020).

Mindful and positive writing has also been found to have positive short-term effects on mood, bringing a sense of calm by decreasing anxiety, increasing mental focus, and lifting moods of individuals who partook in the writing activity (Ross, 2017). A study by Ross (2017) found that mindfulness writing, which entails writing about the moment the individual is experiencing (including both physical and emotional/mental experiences), was effective in reducing anxiety. Journaling using the mindfulness technique outlined in the experimental design could be useful in reducing academic related anxiety as well.

Even though there is ample literature that supports that journaling for several days is beneficial to academic-related anxiety (Friston et al., 2013), there is also evidence to support that brief journaling immediately before an assessment can unload anxious thoughts, which subsequently improves academic performance (Ramirez and Beilock, 2011). Ramirez and Beilock (2011) found that brief expression writing before exams can improve test scores. This study found that 10 minutes of journaling was effective enough to improve test scores by nearly a whole grade point. The current study continues to explore the effects of brief and immediate journaling on anxiety and academic performance.

Research in journaling within the Chinese context has been limited, with only one study being published on this topic. Shen et al. (2018) studied the effectiveness of writing expressively about positive emotions and found it was effective in reducing test anxiety in

students. The treatment group engaged in positive emotional journaling for 20 minutes a day, while the control group could journal about anything that they wanted. It was found that there was a significant difference in anxiety-related symptoms between the two groups, with the treatment group reporting lower levels of test anxiety compared to the control group. This study is interesting as it supports the application of using journaling as an efficient and effective method in reducing test anxiety.

Possible Journal Layouts

Journaling can take on many forms. Within written journals, people can use different mediums like writing on paper or typing out their thoughts and choosing to post them online or keep them offline. There are also alternative forms of journals like visual ones, where people use images and drawings to derive the same anxiety-reducing benefits as written journaling. Kawaura and colleagues (1998) identified four different forms of journaling: journals, memoirs, open diaries, and diaries. Journals and memoirs are styles that include written facts aimed at the individual being conscious of an audience or not being conscious respectively, whereas open diaries and diaries are written sentimental emotions with the individual being conscious of an audience or not being conscious respectively.

Visual journals are a unique alternative to written journaling because they can help students express themselves while also providing an inclusive atmosphere for those who have limitations in writing or reading. Deaver and McAuliffe (2009) define a visual journal as blank pages where individuals, using both visuals and written text, express their experiences. In this study, art therapy and counseling students maintained journals over 15-weeks. They found that students gained heightened insight into their life experiences, and that the visual journal acted as a method for them to develop their reflection skills. Their conclusion is similar to the findings by Hubbs and Brand (2005), who also reported that journals can

transform people's perceptions of their experiences. There is evidence in the literature that supports the idea that paper journaling can help shift perspectives, which could be tremendously useful in classrooms where kids are experiencing mental health and academic challenges.

The set-up of a visual journal is important to explore in order to give it structure, just as writing prompts would be used in a written journal. Deaver and McAuliffe (2009) found that students developed more insight when they combined words with their visual imagery. The imagery reveals ideas that are not tangible or easily explained through insights, but the words help to connect those images into easily identifiable ideas that facilitate self-reflection (Deaver and McAuliffe, 2009).

Positive Academic Impacts from Journaling

Current research on the benefits of writing on academic achievement suggests there could be two reasons why journaling may positively impact academic achievement. The first theory is that academic achievement in students increases as a direct result of students developing writing skills, which subsequently helps them on writing tasks. The other theory is that students might develop a greater sense of purpose or belonging in the class, which could improve their mental health experience thereby increasing their grades. Both theories are explained below.

Development of Writing Skills Increases Academic Achievement

In Western literature, Friston and colleagues (2013) found that there were significant perceived positive academic impacts from journaling. Their results showed that 66% of 112 participants found that expressive writing helped them to understand and master content in class (Friston et al., 2013). Another significant finding was that 55% of those students felt

they had an improved sense of life application of course content which suggests that there are both mental health and academic benefits to journaling. Journaling would be beneficial in an academic environment that is competitive where students feel pressure to obtain high marks, join extracurriculars, and develop an impressive high school resume for post-secondary applications.

Improving Mental Health Through a Sense of Belonging

Writing has been shown to directly improve academics, which could be the result of benefits to mental health, as well as improved writing. A study by Fritson and colleagues (2013) found that students develop a sense of purpose after journaling, suggesting that a sense of purpose for learning is a significant factor in the retention of information. Lew and Schmidt (2011) also found that there was a significant relationship between self-reflection and academic performance in first-year science students at a university. Factors that help in academic improvement include: individuals becoming more critical in their thinking about learning, becoming more aware of learning strategies that work, and summarizing what it is that they learned (Lew & Schmidt, 2011). The research findings by Lew and Schmidt (2011) and Fritson et al. (2013) suggest that a sense of purpose is a significant consequence of expressive writing and may point to the effectiveness of journaling for academic improvement.

Some students also suffer from a lack of belonging in the classroom setting and this can potentially impede their success in a course. First Generation (FG) students are those who are not from college-educated households, and the students in this group can feel isolated in the classroom (Balgopal et al., 2018; Harackiewicz et al., 2014). The academic performance of FG has been compared to non-FG individuals, and it was found that they greatly benefitted from writing tasks that forced them to reflect on their coursework (Balgopal et al., 2018;

Harackiewicz et al., 2014). It was found that students who were given writing tasks in their biology class showed higher grades than the group who did not receive the same writing prompt (Harackiewicz et al., 2014). It is uncertain whether the students benefitted because they were practicing writing in English as their non-Native language, or that it helped them develop a stronger sense of purpose. In a study by Balgopal and colleagues (2018), FG students used more higher-order terms and phrases when they were given writing to learn tasks help with academic performance in that it encourages students to develop their writing skills. Balgopal and colleagues (2018) also found that students who in engage in more writing tend to perform better on assessed writing tasks because they are allowed to develop their writing skills in that subject area. Students who were allowed to write about their learning had higher scores on exams, particularly the long-answer exam questions. Finally, students who wrote more about their learning (3 treatments), showed higher exam scores than those who only had 1 treatment (Balgopal et al., 2019). These findings support that journal writing may improve academic performance because it provides an opportunity for students to develop their writing skills.

Additionally, a study by Miyake et al. (2010) found that students' writing to affirm their value in a physics class resulted in students performing better than those who did not. In this study, writing about course content may have pushed students to place value on their learning and it may have reminded them that they have self-worth and value in the classroom (Miyake et al., 2010). Like the Balgopal et al. (2018) study, the students who wrote about their course were encouraged to become reflective and self-critical about their learning, which may have created more meaning in what they were studying.

Philosophical Worldview

This study was quantitative since I examined the relationship between journaling time on reducing test anxiety and how that may subsequently benefit academic performance. I analyzed the data with a postpositivist worldview and used the scientific method to explore if and how much impact journaling has on adolescent anxiety and academic performance (Creswell, 2013). The first research question I looked at was if journaling for 20 minutes prior to a science assessment could reduce anxiety in high school students in China. The second was if the anxiety was reduced from journaling, how did that impact the academic performance of the students? The efficacy of journaling on anxiety and academic performance was measured by asking participants to rate their anxiety using Spielberger's 1980 Test Anxiety Inventory (TAI) after journaling or after participating in a control activity. The control activity was doing self-review of course content that was related to the test for 20 minutes. Students were able to look over whatever material they wanted to help them get ready for the test. The grades of those who journaled versus those who did not were compared through a t-test analysis to see if there was any effect of journaling on anxiety and academic performance.

In order to conduct this intervention during the COVID-19 pandemic, I had to execute the study online. Therefore, all journaling, control group activities and quizzes were submitted online through the platform Canvas. I completed all observations and analyses and although I attempted to remain objective, there was some observation bias since my perceptions influenced how the data was interpreted (Chilisa & Kawulich, 2012). The ontological assumption in this study was that although journaling was tested for its efficacy on reducing test anxiety, there could have been inherent bias through my observations of the data (Chilisa & Kawulich, 2012). The epistemological approach I used was postpositivist, and relied on self-reported numerical levels of anxiety through

Spielberger's 1980 TAI to compare anxiety levels pre and post journaling. I used this postpositivist epistemological approach to look at data, since it aligns with my personal philosophy that there is an observable world we can study through the scientific method, but within those observations there are human errors and thus, theories made from any observations are revisable (Chilisa & Kawulich, 2012). Also, summative assessment grades from various science courses were analyzed to see how levels of anxiety were impacted. Using these comparisons, the hypothesis that journaling helps reduce test anxiety, which subsequently helps academic performance will be supported or refuted (Eichelberger, 1989).

The motivation for this study stems from my 7 years of experience working in education and witnessing the anxiety in students by the end of their final year of high school. There is competition for placements at post-secondary institutions and this pressure evolves into heightened anxiety in students' final years. As an educator I am motivated to explore classroom strategies such as journaling, prior to assessments, which can reduce the pressure placed on Chinese adolescents and subsequently improve both their mental health and academic performance. It is my hope that with this study, an effective method of easing the secondary school experience for teens can be created to help teenagers with the mental health issues that come with high academic competitiveness.

Methodology

The purpose of this study was to explore the anxiety-reducing effects of written and visual journaling in Chinese secondary school environments and how it impacts academic performance. The journaling intervention was designed to allow students as much freedom as possible in creating their journal entries. Participants were encouraged to include visual elements within their journals and who selected the visual journal option were encouraged to

reflect on their drawings as they created them so they could reap the benefits from this style of journaling. Participants were free to write both facts such as, “my hands are trembling right now,” or emotions, “I feel like my world is going to fall apart if I don’t do well on this test.” Note that these comments are made-up examples and not comments from the participants. The participants in this study were aware that nobody would be reading their journal entries.

The research questions that were examined include:

- Can journaling for 20 minutes prior to a science assessment reduce test anxiety in secondary school students in China? If so, how does journaling impact their academic performance?

It was hypothesized that students who received the journaling treatment would have lower levels of test anxiety than those who did the alternative review activity. It was also hypothesized that students who had lower levels of test anxiety would achieve higher grades than those with higher levels of anxiety regardless of whether they had journaled or done the review activity. Given previous studies that support the ability of journaling to reduce anxiety, it was hypothesized that written and visual journaling would lead to a moderate reduction in test anxiety, as well as improved academic performance of Chinese adolescents.

Chapter II: Method

Participants

The participants of this study were four grade 11 science (Life Science 11 and Chemistry 11) classes aged 15-17 at a private boarding school (Maple Leaf International School) in Dalian, China. For this study, I selected four classes that I was teaching online to participate. The sampling procedure that was used was a convenience sample, as the population of students was limited to the classes I was teaching (“Sampling Procedure,” n.d.) The class selection was initially going to be based on the response rate of teachers who were open to having their classes take part in the experiment, however the pandemic made it difficult to communicate with teachers who were teaching both in China and in various countries. Consequently, I asked the students I was teaching if they were interested in participating. Students in my four classes were provided an information letter and consent form (see Appendices B and C). Since these students were all living independently at the school, they provided their own informed consent. Students who chose to participate were randomly assigned to the treatment (journaling) or control (self-review of course material) conditions in each online classroom. In total, 36 students agreed to participate in the study and 11 had to be dropped due to incomplete data submissions.

Design

This study included one independent and two dependent variables. The independent variable was whether the individual journaled for 20 minutes or engaged in a review activity. The first dependent variable was the levels of anxiety reported in the TAI, and the second dependent variable was the academic grades from the quizzes. Quiz scores were compared between the control and treatment groups. The effect of journaling was tested on levels of anxiety and academic impacts.

Materials

The Test Anxiety Inventory (TAI) test, by Spielberger (1980) was used to assess students on their levels of anxiety (Cronbach's $\alpha = .81$). This is a 20-item questionnaire where students are assessed on both their worry and emotionality subscales of test anxiety (Schwarzer, 1984). The worry component of test anxiety included the cognitive components where the individual felt threatened by a situation, and they began to worry more about their failure rather than the task (Schwarzer, 1984). The emotionality part of test anxiety was the physical symptoms (e.g., nervous stomach, increased heart rate and general sense of unease) that came from feeling nervous (Schwarzer, 1984). The TAI was used as it is commonly used for assessing high school levels of test anxiety, and it has been tested for high reliability in assessing this type of anxiety (Shabbir Ali, 2013). It was also a scale designed to be both brief and tailored for self-reporting (Shabbir Ali, 2013). Higher scores suggest higher levels of anxiety in both the emotionality and worry domains (Alibak, Talebi & Neshat-Doost, 2019). As an example, for the statement, "I feel my heart beating very fast during important tests", an "almost never" response would be valued at 1, while "almost always" would have a value of 4 on the total score. The publisher of this assessment, Mind Garden Inc., provided the TAI in both English and simplified Chinese so there was no need to translate the assessment from an external source.

The quizzes were from either a grade 11 Chemistry or grade 11 Life Science course taught online using the Canvas learning platform. The Canvas classrooms were divided into modules for each unit, and students had to engage with one another via discussion posts, assignments and writing summative assessments (i.e. quizzes and unit tests) during scheduled times. For this experiment, I created folders for the TAI and journaling/control group activities where students submitted work before they wrote their quiz. I did not look at the folders for the journaling and control group submissions, however I was able to verify

that the activities had been completed and submitted. Quizzes were designed based on course materials and had a value of 10-15 marks. The quiz was a mixture of multiple-choice and short answers. They were scored by myself as I was teaching the classes. Because students in each classroom were randomly assigned to journaling or no journaling groups, it was expected that the effects of any inconsistency between quizzes would be minimized. Students had 30 minutes to write the quiz and they were grouped together with assignments and projects, which in total were worth 35% of their final mark. Students did not have the option to redo any quizzes, however the lowest mark in the semester was dropped at the student's request. It is important to note that culturally, quizzes are not formative assessments and are typically counted as summative assessments in China. I was under this assumption that quizzes would evoke academic performance anxiety like a unit test would.

Academic results were recorded on the Maple Leaf International School's grade book called PowerSchool. After each of the four classes completed their assessments and their grades were recorded, a screenshot of their results were sent by the school for analysis.

Procedure

Once participants were randomly assigned to groups by my thesis supervisor, the treatment group received a journaling activity where they had to mindfully journal about their thoughts and emotions about the quiz immediately before writing the assessment. All instructions were written in a post made on the same learning platform (Canvas) that the students were using for the course. They either wrote out their thoughts or used visuals to represent their emotions, but it had to be mindful writing. The non-treatment group received a review activity that they worked on for 20 minutes, while the treatment group journaled during that time. The review activity was students looking over materials to be tested for 20 minutes. After the 20-minutes of either journaling or reviewing material, students completed the TAI and then the test. Students used as much time as they needed for the TAI and were

not limited to class time since they were completing and submitting TAI survey completing and submitting TAI surveys from home. They submitted in their journals or review activity and TAI before writing their quizzes, which took approximately 30 minutes.

Data Analysis

Descriptive scores, including means and standard deviations, for the two dependent variables were calculated. A t-test analysis was used to test the effect of the independent variable (journaling or review activity) on each of the four dependent variables (TAI anxiety levels and academic scores). All statistical analysis was done using SPSS v. 26 software.

Chapter III: Results

I first looked at whether journaling for 20 minutes reduces academic-related anxiety prior to writing a unit test. Statistical analysis indicated that there was no significant effect of journaling on anxiety. Both the TAI subscales (emotionality and worry) and total grades between the control (review activity) and experimental (journaling) were looked at to see if there was any reduction of anxiety symptoms in the journaling group. Mean and standard deviations are shown in Table 1.

Table 1

Means (and standard deviations) on outcome measures for control and journaling groups

	Control (n = 13)	Journal (n = 12)
TAI emotionality subscale	15.23 (4.89)	17.67 (5.56)
TAI worry subscale	16.2308 (5.34)	16.5833 (5.96)
TAI score	39.3077 (10.11)	43.5000 (11.48)
Test final grade	69.3385 (25.19)	68.6583 (38.86)

For the emotionality subscale on the TAI there was no significant difference $t(23) = 1.17, p = 0.256$, Cohen’s $d = 0.47$ between journaling and the control group. For the worry subscale there was also no significant difference $t(23) = 0.16, p = 0.877$, Cohen’s $d = 0.06$ between journaling and the control group. For the TAI score there was no significant difference between journaling and control group $t(23) = 0.97, p = 0.342$, Cohen’s $d = 0.39$. A similar result was found on the effects journaling had on academic performance. Statistical analysis revealed that there was no significant difference between journaling and control groups on final test grades $t(23) = 0.05, p = 0.959$, Cohen’s $d = 0.02$. Notably, the standard deviation

appears higher in the journaling group and was found to be more variable (38.86) compared to the control group (25.19). Levene's test for equality of variances shows no significant difference $p = 0.089$.

Next, I correlated scores on the TAI overall score with the final grade on the quiz scores, which showed no significant correlation $r = .07, p = 0.73$. Together, these results indicated that test anxiety and academic performance were similar regardless of whether students journaled prior to writing the test or not and were not significantly related to one another.

Chapter IV: Discussion

The enormous emphasis placed on Chinese students to perform well in school stems from the cultural idea that high academic performance is associated with better economic prosperity in the future, as well as contributing to a positive image for the student's family (Salili et al., 2004). Therefore, it is not surprising that anxiety symptoms correlate significantly with competing for good grades in Chinese students (Essau et al., 2008). Given that this is an ongoing issue in students, it is important to explore the opportunities that we as educators have in reducing student anxiety. As mentioned previously, research into the impacts of journaling on reducing test anxiety has been limited and nearly non-existent in Chinese adolescents. However, there is research that supports the stress-alleviating benefits that come from journaling. In this study I examined the impact of journaling on test anxiety in Chinese youth. The hypothesis that journaling would reduce test anxiety and subsequently improve test scores was not supported in the study.

The results of this study suggest that journaling for 20 minutes did not have any effect on reducing anxiety or improving academic performance in Chinese adolescents. Interestingly, the students who did not journal performed slightly better on the unit test compared to those that journaled! There are a number of potential interpretations for this curious outcome. The first interpretation is that there is no effect of journaling on reducing anxiety in adolescents; however, a potential issue with this is that there are studies that refute this finding (Miyake et al., 2010; Shen et al., 2018). This may suggest that there was an external factor (such as the COVID-19 pandemic) that could have potentially influenced the results.

Limitations

Potential Correlates of Test Anxiety

While I intended to measure test anxiety, I may have been tapping into something very important, like the anxiety impacts of COVID-19. In a recent study by Wang and Zhao (2020) it was found that Chinese university students had higher anxiety during the COVID-19 pandemic. 6.3% of the general population had reported that they were anxious, however it was found that 66.69% of students in general experienced generalized anxiety (Wang et al., 2020). There is a possibility that conducting this kind of study during the COVID-19 pandemic made it difficult to accurately measure test anxiety as the pandemic may have potentially introduced a construct-irrelevant variance, and thus the results are not supportive of previous research.

Impact of COVID-19 on Methods

Another limiting factor to the study was that no portion of the study (the journaling, the review activity or filling out the TAI scale) was monitored as the students were required to study entirely online due to COVID-19. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), the pandemic has prevented 9 out of 10 students around the world from attending in-person classroom instruction (van der Aalst et al., 2020). In this experiment there was a significant portion of online learning required by the participants, which may have reduced the quality of learning since socially interacting in a face-to-face manner is an imperative component of learning (van der Aalst et al., 2020). Inadvertently, this could have impacted the academic performance of students, and resulted in lower grades from their online course compared to if they had taken the class in person.

Choice of Control Activity

The choice of the control activity could use some adjustments in future repetitions of this study. The control activity consisted of doing review on testable course material for 20

minutes. This activity could have impacted the test anxiety, therefore, not functioning as a strong control activity. The extra time to review test materials may have reduced test anxiety and therefore impacted the anxiety levels of the students. Similarly, the journaling activity could have inadvertently increased test anxiety as it was a non-test related task. This factor could explain why there were no significant difference in levels of anxiety found between the journaling and control groups.

Training Participants for Journaling

Unfortunately, I was unable to be in the classroom with participants and teach them what journaling was. Walker (2006) wrote about the importance of teachers outlining the expectations for journaling to their students; this ensures that students know what they are doing and thus they could engage in journaling confidently. Therefore, my students may have been confused during the writing process about what exactly they were supposed to be doing, especially given that they were L2 language learners. Additionally, students had never met me in person before, so there were limited opportunities to develop trust between myself and the participants. Walker (2006) also highlighted the importance of creating trust between students and the teacher so that students would feel their teacher would remain true to their intentions of the purpose of their journaling. This may have impacted how open the students were in their journaling entries. If they had not been willing to be completely honest with their writing, the journaling may not have been as effective or effective at all at alleviating some test anxiety (Walker, 2006).

Sample Size

Another possible explanation of the results is that I did not have enough participants to successfully look at any correlational relationships between journaling and test anxiety. Recruitment was challenging because I was communicating with students via email and an online teaching platform instead of the classroom. Students may not have seen the

announcement posts or checked their emails. There was no way to confirm that all 71 of my students had seen the recruitment information that the study was taking place. Some students did not regularly check their emails, and some were overwhelmed in trying to learn how to navigate the online learning platform and therefore missed the announcements that I had posted regarding participation in the study. This resulted in the sample size being reduced to a very small group, which could have easily impacted the results of the study by reducing the internal and external validity of the research (Faber & Fonseca, 2014).

Format of Journals

There may have been a source of variance in the study as students used a self-selected format of journaling. Students were allowed to do either written or visual journaling, as well as journal positively or about their anxious thoughts. Since there are different benefits to the different types of journaling, this self-selection may have been testing a range of journaling interventions.

One Time Journaling Intervention

The students were instructed to only journal one time before their test. There is a possibility that this may have increased their level of anxiety because it was a new task for them, and they may have felt the need to journal “correctly”. In future studies, it would be interesting to see if students who familiarize themselves with the journaling intervention benefitted more from journaling than those in this study.

Issues with Data Collection Online

Consequently, I was unable to guarantee that students were reviewing or journaling actively for 20 minutes, nor was I able to explain to them in person how to fill out the TAI scale. The TAI scale was translated into simplified Chinese; however, an in-person explanation would have been much more effective in ensuring that students knew how to fill

out the form, as well as provided them an opportunity to ask me questions if they needed any help. Without being able to monitor the students in person or communicating that this study taking place to all prospective participants, it may have created a data set that refutes the original hypothesis where other studies support the hypothesis that mental health is positively impacted by journaling (Shen et al., 2018).

Directions for Future Research

Given that there is such a small body of knowledge around journaling and mental health in Chinese youth, my intent is to repeat this study in the future when the pandemic settles, and students are guaranteed in-class instruction again. In a non-pandemic context, I would repeat this study in the classroom so that I could guide students in-person through the experimental process and work with a larger sample size. In-person instruction would allow students to have face-to-face communication with myself, and I would be able to ensure they were journaling or reviewing for 20 minutes and submitting a completed TAI form. Although COVID-19 research publications have drastically increased, with over 20 000 papers being published on the topic since December 2019, it is important to recognize how detrimental the pandemic has been on other areas of research, including this one (Harper et al., 2020).

Implications

Despite the global pandemic, there are still important research implications that can be taken from this study. Firstly, research into how we as educators can look at our practice and integrate simple but effective stress-reducing strategies for our students should be explored further. It is our responsibility as educators to actively contribute to school climate in positive ways. Research has shown that students who perceived their school climate as fairer, have stronger connectedness amongst individuals, feel safe and have reported better health (Rathmann et al., 2018). Alternatively, those that saw their school environments as being teacher controlled were more demanding and had higher disciplinary measures

reporting greater levels of stress (Rathmann et al., 2018). This emphasizes the importance of research into how a modest practice of journaling in the classroom can possibly add to a collection of resources for educators to reduce the stress students feel, and subsequently create more positive school climates.

As mentioned previously in this thesis, there is very little research into the positive impacts of journaling on students, but even more so within a Chinese context. Although people around the world are all experiencing various levels of anxiety from COVID-19, research published last May by Zhou et al. (2020) suggests that 37.4% of Chinese adolescents reported feeling anxiety symptoms while 31.3% reported a mixture of both depressive and anxiety symptoms. These statistics illustrate that over 30 million Chinese youth are suffering from mental health issues. Since this research indicates high levels of mental health issues among Chinese teens, more efforts need to be made to look into how to combat this concerning proportion of youth suffering from mood-disorder issues.

Additionally, the study by Zhou et al. (2020) found that at higher grade levels (i.e., secondary school levels) the anxiety reported by students was higher. This suggests that educators at the high-school level need to focus on how we can modify assessment styles to help mediate the stress experienced by students. The stress of students graduating high-school will likely always be there as they are transitioning to another stage of their lives; however, journaling is one possible stress-reduction technique that may help ease some of those anxious emotions students develop as they move into higher grade levels.

In conclusion, the findings of this study indicate that journaling does not appear to have an impact on test anxiety nor academic performance. However, the potential to mediate test anxiety in adolescents through journaling should be explored in future studies when the global educational climate returns to what it was prior to the pandemic. It is my belief that as educators, we should support our students through their learning experiences but also work to

actively evolve our teaching practice to include more positive mental-health elements like journaling.

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Appendix A

Sample of the Spielberger (1980) Test Anxiety Inventory

For use by Anna Bosanac only. Received from Mind Garden, Inc. on August 10, 2019

Please provide the following information:

Name _____ Date _____

Gender (*Please circle*): **Male Female** Score: T _____ W _____ E _____

Directions

A number of statements which people have used to describe themselves are given on the following page. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel:

1 = Almost Never, 2 = Sometimes, 3 = Often, 4 = Almost Always.

There are no wrong or right answers. Do not spend too much time on one statement but give the answer which seems to describe how you generally feel. Please answer every statement.

ALMOST NEVER
SOMETIMES
OFTEN
ALMOST ALWAYS

- 1. I feel confident and relaxed while taking tests 1 2 3 4
- 2. While taking examinations I have an uneasy, upset feeling 1 2 3 4
- 3. Thinking about my grade in a course interferes with my work on tests 1 2 3 4
- 4. I freeze up on important exams 1 2 3 4
- 5. During exams I find myself thinking about whether I'll ever get through school 1 2 3 4
- 6. The harder I work at taking a test, the more confused I get 1 2 3 4
- 7. Thoughts of doing poorly interfere with my concentration on tests..... 1 2 3 4
- 8. I feel very jittery when taking an important test..... 1 2 3 4
- 9. Even when I'm well prepared for a test, I feel very nervous about it..... 1 2 3 4
- 10. I start feeling very uneasy just before getting a test paper back..... 1 2 3 4
- 11. During tests I feel very tense 1 2 3 4
- 12. I wish examinations did not bother me so much..... 1 2 3 4
- 13. During important tests I am so tense that my stomach gets upset..... 1 2 3 4
- 14. I seem to defeat myself while working on important tests 1 2 3 4
- 15. I feel very panicky when I take an important test..... 1 2 3 4
- 16. I worry a great deal before taking an important examination..... 1 2 3 4
- 17. During tests I find myself thinking about the consequences of failing 1 2 3 4
- 18. I feel my heart beating very fast during important tests 1 2 3 4
- 19. After an exam is over I try to stop worrying about it, but I can't 1 2 3 4
- 20. During examinations I get so nervous that I forget facts I really know 1 2 3 4

For use by Anna Bosanac only. Received from Mind Garden, Inc. on August 10, 2019

Test Attitude Inventory

考试态度鉴定表

请提供下列信息：

考号：_____ 日期：_____ 性别：_____

[指导语]：下页的一些句子描述的是人们对参加考试的感受。请你仔细阅读每一个句子，然后在句子右面选择合适的数字，表示你在大多数时候的感受。

1 表示“从来没有”，2 表示“有时”，3 表示“经常”，4 表示“总是如此”。

答案并无对错或好坏之分，请你实事求是地回答每一道题。

请勿填写。

分数：T _____ W _____ E _____

Research Edition Translation performed by Jing Chen on this date December 2003.
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Redwood City, CA 94061 www.mindgarden.com from Test Anxiety Inventory by
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Simplified Chinese

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考試態度量表

TA-259 - TSAN/TAI - Traditional Chinese - all twenty items

名稱 _____ 日期 _____
性別 女 男

填寫說明：以下是一些自我描述的句子。讀完每個句子後，請根據你通常的感受，圈選句子右側合適的數字。回答沒有對錯之分，所以不要在每句停留時間過長，只需要憑自己的一般感覺回答即可。

T _____ W _____ E _____
1 = 幾乎從不
2 = 有時
3 = 通常
4 = 幾乎總是

- | | | | | |
|------------------------------|---|---|---|---|
| 1. 考試時我有信心而且心情放鬆。 | 1 | 2 | 3 | 4 |
| 2. 考試時我覺得不安、煩躁。 | 1 | 2 | 3 | 4 |
| 3. 考試時如果我想到自己該門課的成績，就會影響到發揮。 | 1 | 2 | 3 | 4 |
| 4. 在重要考試的時候，我會緊張到身體發僵。 | 1 | 2 | 3 | 4 |
| 5. 考試時我會想自己是否能夠畢業。 | 1 | 2 | 3 | 4 |
| 6. 考試時我越努力，我的思緒就越混亂。 | 1 | 2 | 3 | 4 |
| 7. 考試時一想到自己會做得不好，我的注意力就不能集中。 | 1 | 2 | 3 | 4 |
| 8. 在重要考試的時候，我會感到非常緊張。 | 1 | 2 | 3 | 4 |
| 9. 就算我考試前準備充足，我也會十分緊張。 | 1 | 2 | 3 | 4 |
| 10. 考卷改好發回來之前，我會感到不安。 | 1 | 2 | 3 | 4 |
| 11. 考試時我會很緊張。 | 1 | 2 | 3 | 4 |
| 12. 我希望考試不要讓我如此煩惱。 | 1 | 2 | 3 | 4 |
| 13. 在重要考試時，我會緊張到胃痛。 | 1 | 2 | 3 | 4 |
| 14. 在重要考試時，我好像有一種被自己打敗了的感覺。 | 1 | 2 | 3 | 4 |

For use by Anna Bosanac only. Received from Mind Garden, Inc. on August 10, 2019

15.	在重要考試時，我會感到驚惶失措。	1	2	3	4
16.	在重要考試之前，我會很憂慮。	1	2	3	4
17.	在考試時我已經在想著不及格的後果。	1	2	3	4
18.	在重要考試時，我感到心跳很快。	1	2	3	4
19.	考試後，我嘗試讓自己放鬆心情，但就是禁不住會擔心。	1	2	3	4
20.	考試時我會緊張得忘記了自己本來知道的知識。	1	2	3	4

TA-259 - TSAN/TAI - Traditional Chinese - all twenty items

Appendix B

Information Letter



Faculty of Education

Dear Potential Participant:

You are being invited to participate in a research project at Maple Leaf International School Dalian Campus entitled "**The benefits of journaling for Chinese adolescents with test anxiety**".

Taking part in this study is voluntary. Before you decide whether or not you would like to take part in this study, please read this letter carefully to understand what is involved. After you have read the letter, please ask the researcher any questions you may have.

PURPOSE

The purpose of this study is to explore whether journaling can reduce test-related anxiety, and how that may subsequently improve academic performance.

The student researcher is Anna Bosanac, teacher at Maple Leaf International School and Masters' student at Lakehead University. The principal investigator is Tanya Kaefer, associate professor at Lakehead University.

WHAT IS REQUESTED OF ME AS A PARTICIPANT?

As a participant you are expected to do some writing activities before a test, complete a Test Anxiety Inventory (anxiety rating scale) and then write your test online, like you normally would this year. You will submit your journal/review (or a photo of it, if you prefer to write on paper), and Test Anxiety Inventory on [platform] immediately before you write your test.

The expected duration of the study is from May-June 2020.

WHAT INFORMATION WILL BE COLLECTED?

Your anxiety rating scale and test scores will be collected. Your journal/review submission will be checked for completion, but will not be downloaded, read, or otherwise examined.

The anxiety scale will be analyzed to see the effectiveness of journaling on alleviating academically related anxiety symptoms and test scores will be analyzed to look for any academic improvements from lowered anxiety. Your journals or review materials will not be included in the study.

WHAT ARE MY RIGHTS AS A PARTICIPANT?

- you are under no obligation to participate and are free to withdraw at any time without prejudice
- your decision to participate will not affect your academics

**WHAT ARE THE RISKS AND BENEFITS?**

There are no great foreseeable risks in participating. However, if you experience any emotional or psychological distress from journaling, mental health resources are provided from the researcher and can be used to seek help. Additionally, please remember that if the study becomes overwhelming you may withdraw immediately at any time with no consequences.

Although there are no direct benefits to participating in this study, some participants may get satisfaction from contributing to research into how journaling can be used as an intervention strategy to help students feel less anxious about their schoolwork.

HOW WILL MY CONFIDENTIALITY BE MAINTAINED?

This study will maintain confidentiality during the research process. Once anxiety reports and test scores are downloaded from the online depository, any names will be deleted and only student numbers retained to ensure the participants' identities remain confidential.

If the student researcher is your teacher, she will not know whether you are participating in the study until after the test is fully graded and you have received your mark. You will provide your consent via email to Dr. Kaefer, who will let you know which group you are in. Ms. Bosanac won't know who has participated in the study until after it is completed.

WHAT WILL MY DATA BE USED FOR:

The use of this data will be for a Master's Thesis Project and potential publication in peer-reviewed journals or conferences. This research is for academic use only and there is no intent to commercialize the research findings. Only members of the research team will have access to the data.

WHERE WILL MY DATA BE STORED?

The data will be stored in an external hard drive and is password protected. The hard copies of assessments will be archived at the school in department offices and anxiety scales will be filed in a locked filing cabinet in the student researcher's home until data analysis is completed. Once completed the anxiety scales will be sent by courier to Lakehead University, Canada, where they will be stored in a locked cabinet in Dr. Kaefer's office. All data will be stored for at least 5 years.

HOW CAN I RECEIVE A COPY OF THE RESEARCH RESULTS?

If you would like a copy of the research results, please email Anna Bosanac at abosanac@lakeheadu.ca or Dr. Tanya Kaefer at tkaefer@lakeheadu.ca.



Faculty of Education

WHAT IF I WANT TO WITHDRAW FROM THE STUDY?

If you would like to withdraw, please speak with the researcher Anna Bosanac directly at school or send an email to abosanac@lakeheadu.ca. You will be able to withdraw at any time and no questions will be asked about why you would like to withdraw.

RESEARCHER CONTACT INFORMATION:

My email address is abosanac@lakeheadu.ca

I am acting in a dual role as both a teacher and researcher as I am employed as a teacher at the school the study is being conducted in.

RESEARCH ETHICS BOARD REVIEW AND APPROVAL:

This research study has been reviewed and approved by the Lakehead University Research Ethics Board. If you have any questions related to the ethics of the research and would like to speak to someone outside of the research team, please contact Sue Wright at the Research Ethics Board at [807-343-8283](tel:807-343-8283) or research@lakeheadu.ca.

Appendix C

Consent Form



Faculty of Education

Consent Form for Potential Participants

MY CONSENT:

By replying to this email with my name and student number, I agree to the following:

- ✓ I have read and understand the information contained in the Information Letter
- ✓ I agree to participate
- ✓ I understand the risks and benefits to the study
- ✓ That I am a volunteer and can withdraw from the study at any time and may choose not to answer any questions
- ✓ That the data will be securely stored in the researcher's personal computer for a minimum period of 5 years following completion of the research project
- ✓ I understand that the research findings will be made available to me upon request
- ✓ I will remain anonymous
- ✓ All of my questions have been answered

By consenting to participate, I have not waived any rights to legal recourse in the event of research-related harm.