WHO DELIVERS IT AND HOW IT IS DELIVERED: EFFECTS OF SOCIAL-EMOTIONAL LEARNING INTERVENTIONS ON LEARNING ANXIETY AND DROPOUT INTENTION

[1]Wu Deli, [2]Amrita Kaur & [3]Rosna Awang-Hashim,
[1]School of Education, Beibu Gulf University, China
[2]College of Liberal Arts, Wezhou-Kean University, China
[3]School of Education, Universiti Utara Malaysia, Malaysia

[3]*Corresponding author: rosna@uum.edu.my*

ABSTRACT

Purpose - Given the prevalence of mental health issues among young adolescents and its detrimental effects on academic functioning, Social-Emotional Learning (SEL) interventions are becoming extremely valuable. The current study aims to investigate the effectiveness of two types of SEL interventions delivered by two different types of teachers to determine their effectiveness for SEL knowledge, learning anxiety, and intention to drop-out.

Methodology - This study employed a 2 x 2 factorial and between-subject quasi-experimental design, in which intervention type and teacher type were manipulated to produce four different versions of experiments. A total of 209 students (107 boys, 102 girls) from Grade 8 with a mean age of 14.3 years from Qinzhou City in Southwest China participated in the study.

Findings - Factorial and between-group MANOVA revealed that while psychology teacher was more effective in enhancing SEL knowledge and reducing dropout intention, regular teacher was more effective in reducing learning anxiety. TASSEL intervention was more effective in enhancing SEL knowledge while SEL regular intervention was more effective in reducing learning anxiety. Nevertheless, within-group analysis suggested TASSEL with psychology teacher was the best combination in reducing dropout intention while SEL with psychological teacher was the best combination in reducing learning anxiety.

Significance - The results have significance for schools and mental health counselling services. The findings can guide the effective design of SEL intervention and appropriate teachers to deliver it.

Keywords: Social-Emotional Learning, Teacher autonomy support, Learning anxiety, Dropout intention.

INTRODUCTION

The prevalence of mental health issues among students is a global concern because it is widespread all over the world (Merikangas et al., 2010). Initiatives to manage it and promote positive social, emotional, behavioral, and school functioning among adolescents has been at the heart of it (Green et al., 2013; Merikangas et al., 2011). According to the German Health Interview and Examination Survey for Children and Adolescents (KiGGS) in 2007, the prevalence of mental health problems in Germany was approximately around 10 percent among adolescents (Voigt, Schaffrath, & Mankertz, 2016). The Ministry of health in Malaysia reported that in 2015, the number of mental illness cases among Malaysians aged 16 to 19 was 29.2 percent, an estimated 4.2 million students (Kamarulzaman, & Jodi, 2018). In China, Wang et al. (2016) found that 74 percent of rural students are at risk of mental health problems, which is three times higher than that of urban students.

Several causes have been attributed to poor mental health issues around the world. Some of them are childhood abuse, poverty, war, physical and verbal abuse, neglect, drugs, and poor accessibility of professional medical services (Szalavitz, 2012; Scharff, 2012; Merikangas et al., 2011). There are numerous grievous outcomes for students suffering from mental health issues, some of them are-anxiety, behavioral problems, emotional disorders, drug abuse, dropout and poor academic performance (Merikangas, Nakamura & Kessler, 2009; Reid, Gonzalez, Nordness, Trout, & Epstein, 2004). Given the challenges of transition among early adolescents (Evans, Boriello & Field., 2018), the issue is even more exacerbated for junior high school students which can lead

to high school dropout and poor academic performance. For example, the cumulative dropout rate across all windows of secondary education may be as high as 63 percent in rural China (Shi et al., 2015). In rural China, the average dropout rate among Grade 7 and Grade 8 rural junior high school students is 13 percent, and ranges from 7.2 percent to 27.1 percent across different counties, Furthermore, it is believed that 74 percent of rural students face the risk of mental health issues, which is 12 times higher in comparison to urban students' population. (Wang et al., 2015).

Dropping out is positively linked to poor mental health as students in distressed mental health find it difficult to cope with academic demands. Mental health issues, particularly those of poor students with low achievement, leads to high dropout rates, especially in rural school student populations (Shi et al., 2015). It is reported that students with mental health problems are 3 times more likely to drop out compared to healthy students.

Learning anxiety is another key variable that is found to emanate from poor mental health (Wang et al., 2015). Learning anxiety is defined as a systematic fear or worry about school activities, accompanied by emotional distress (Barrios & Hartmann, 1997; Spielberger & Vagg, 1995). Anxiety leads individuals to experience negative emotions, tensions, and worries which in turn leads to physical health issues such as increased blood pressure, loss of appetite, and attention (American Psychological Association, 2020). This distress not only impacts students' academic performance (Wolf & Smith, 1995) but also contribute significantly to their intention to drop out (Wang et al., 2015). Furthermore, several researchers have also clearly stated that learning anxiety is intensely and positively linked to low achievement among students (Reardon & Galindo, 2002; Hjorth et al., 2016).

The common underlying solution that researchers have advocated for long is to improve students' social-emotional learning (SEL) knowledge and skills to help them handle challenges and lead a successful life (Collaborative for Academic, Social, and Emotional Learning [CASEL], 2017). Schools are recommended as the ideal space to initiate Social-emotional interventions as students spend a large part of their time in schools (Durlak, Weissberg, Dymnicki,Taylor,&Schellinger,2011). These SEL programs have demonstrated positive outcomes such as enhanced academic performance (Zins, Bloodworth, Weissberg, & Walberg, 2007), reduced drug use (Tobler, Roona, Ochshorn, et al., 2000), and disciplinary problems among students (Wilson, Gottfredson, & Najaka, 2001). However, not all Social-emotional or mental health interventions promise successful outcomes owing to contextual issues such as the effectiveness of the intervention, qualifications of teachers who deliver those interventions, and availability of appropriate resources (Dowdy, Kamphaus, Twyford, & Dever, 2014).

Among potential factors that affect the effectiveness of SEL intervention is who delivers it and how is it delivered. For example, while studies have revealed that regular school teachers are competent enough to implement the SEL curriculum (Durlak et al., 2011; Merrell, 2010; Wang et. al., 2016), some have claimed that school counselors with the clinical and psychological background are more effective in delivering the psychological intervention (Li, 2017). The delivery style of SEL intervention also determines its outcomes. For example, Hetrick (2018) proposed that SEL interventions that are engaging are likely to increase expected outcomes. Finally, while there is evidence that SEL intervention can be equally effective for students in a developing country such as China (Wang et al., 2016), little is known about its effectiveness with rural students who reside in boarding school as boarding schools students face unique challenges for an academic and psychological adjustment (Ak & Sayil, 2006; Agmon, Zlotnick, & Finkelstein, 2015).

Therefore, considering the limitation of the past study, the current study using a 2x2 factorial design aims to investigate the effectiveness of SEL intervention delivered in two different ways by two types of teachers to study its impact on learning anxiety and intention to dropout on rural junior high school students in China who reside in boarding school.

Social-Emotional Learning

Multi-Tiered Systems of Support (MTSS) are scientifically-validated, evidence-based frameworks that follow a consistent, comprehensive, and structured design to cater academic, social, and behavioural demands of students (Benner, Kutash, Nelson, & Fisher,2013; Cook et al., 2015; Schwartz, 2016). SEL curriculum intended for universal implementation is considered a Tier I effort within multi-tiered systems of support (MTSS). The intervention in the present study is partly based on Goleman (2000)'s Mixed Model which studies the emotional and social function of individuals. This mixed Emotional Intelligence (EI) model regards emotional intelligence as a group of emotional and social abilities consisting of cognitive ability and personality. They believe that EI comes from four abilities: self-awareness, self-management, social awareness and relationship management. Mixed model theory displays multiple conceptualizations of emotional intelligence ability and traits and serves as the underpinning theory for the development of student's adjustment. For example, for boarding school students, as they lack the daily guardianship of their parents, there are more chances for them to approach problematic students or underachievers, and they are easier to imitate misbehaviors such as bullying, alcohol dependency, smoking without proper self-management, which indicates they need to nurture more self-management skill (Zhang, Li, Zhang, Lu, & Wang, 2014).Nevertheless, SEL

intervention will provide the chance for them to learn the knowledge and skill based on self-awareness, self-management, social awareness and relationship management, and improve their boarding school adjustment.

CASEL (2000) offered a concise definition of SEL:" SEL is the process of acquiring the skills to recognize and manage emotions, develop caring and concern for others, make responsible decisions, establish positive relationships, and handle challenging situations [effectively]" (para2). SEL proposes five key competencies which include Self-awareness, Self-management, Social-awareness, Relationship Skills, and Responsible decision making. Self-awareness refers to an individual's ability to identify one's own emotions, values, and strengths. Self-management includes the competency to adjust feelings, responses, and affections to meet the needs of everyday interactions (Denham & Brown, 2010). Social-awareness includes the competency of perspective-taking, understanding the feelings of others, and valuing differences. Relationship skills refer to the capability to build and retain affirmative relationships. Responsible decision making refers to students who are responsible for decision-making, have a deep concern for themselves and others.

According to two substantial meta-analysis reviews including more than 500 individual studies of SEL curriculums, CASEL (2017) and Durlak et al. (2011) have recommended the addition of universal SEL to core instruction (e.g., math, reading, writing, science) at schools. Their analysis determined that when schools focus on social-emotional wellness in addition to the academic core subjects, students thrive academically and behaviorally. For example, the affective component of SEL can help enhance students' self-assertion, communication skills and reduce anxiety/depression and behavioural issues (Durlak et al., 2011).

SEL knowledge is an important component of SEL interventions. It is related to students' social and emotional knowledge and coping strategies which help students foster healthy social-emotional and behavioural skills in five categories: (a) learning to create strong attachments early in life, (b) gaining age-appropriate skills, (c) having experiences that promote healthy well-being, (d) feeling they control their fate, and (e) learning to deal with stress in healthy ways (Merrell, Carrizales, Feuerborn, Gueldner, &Tran, 2007). Previous studies have found that SEL knowledge can help students succeed academically and emotionally (Carrizales-Engelmann, Feuerborn, Gueldner, & Tran, 2016; Kauffman & Landrum, 2009). Weist et al. (2018) revealed that acquiring SEL knowledge can help students slower the growth of mental health problems such as emotional and behavioral disorders and enhance self-regulation.

SEL intervention has been widely used in developed countries, such as USA, England for a long time. However, in China, it is just at the beginning (Li, Yang & Huang, 2018). At present, there are two reported SEL intervention in China, one is operated by Ministry of Education of China (MoE) and United Nations Children's Fund (Li et al., 2018), this official program used a curriculum adapted from the support materials provided by the learning behavioral center of Pun University, Bei'an, England. This curriculum has seven lessons, including "New start", "Quarrel and reconciliation", "say No to bullying", "Moving towards the goal", "Like myself", "Interpersonal relationship" and "Change". The other SEL intervention was implemented by Wang et al. (2016), which was specially aimed to reduce learning anxiety and dropout intention, this research used their own curriculum, compiled by educational psychologist from Beijing Normal University, which was the first time to be used.

Both of these interventions are time-consuming and cost a lot of money, and the second one even lacks enough previous experimental evidence, cannot be widely implied, especially for poor boarding schools. However, SEL intervention like Strongkids curriculum is evidence-based and cost-effective which can help junior high boarding school students reduce negative thoughts and behaviours (Carrizales-Engelmann et al., 2016). In this case Strongkids curriculum Grade 6-8 was applied in this research as the original intervention program.

SEL and Teacher Autonomy Support

Several SEL researchers (Harlacber & Merrell 2010; Herrick 2018) have indicated a need for modification in delivering SEL in such a way that it engages students at a more personal level. Harlacber and Merrell (2010) found that praise and positive feedback were effective in improving students' SEL skills and knowledge which indicated a possibility to enhance the impact of such interventions by employing empirically driven guidelines as Teacher Autonomy Support (TAS) within Self-determination theory (SDT).

SDT is a contemporary theory of motivation which differentiates between types and quality of motivation along a continuum (Deci & Ryan, 1985; 2000). The theory proposes that the satisfaction of three basic psychological needs- autonomy, competence, and relatedness lead to optimal psychological functioning of individuals across a variety of domains (Deci & Ryan, 2000). In line with this proposition, Teacher Autonomy Support (TAS) has emerged as fundamental to students' motivation in classroom settings. Autonomy supportive classrooms are characterized by teacher behaviours such as offering choices, having students completing tasks in a way they like, provide

a rationale, acknowledge negative emotions, offering affirmative feedback on their abilities, letting students work at their own pace, providing praise as feedback, and refraining from using controlling language (Reeve, 2006; Cheon, Reeve, Lee, Y., & Lee, J. , 2018) TAS has been linked with students' academic success (Gutiérrez, & Tomas, 2019), creativity (Liu, Chen & Yao, 2011), persistence and effort, and reduced pressure and anxiety (Kaur, Awang Hashim & Noman, 2014) as well as with the reduced intention to dropout (Hang, Kaur & Hamid, 2017; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2005). Based on this evidence, the current study adopted TAS behavioural guidelines to deliver SEL intervention in one of the experimental groups.

The Current Study

The current study comprised two types of intervention 1) SEL and 2) SEL combined with TAS identified as Teacher Autonomy Support Social-Emotional Learning (TASSEL). These two interventions were delivered by both a regular teacher and a psychology (school counsellor) teacher. This provided us with four intervention groups in total which are group 1) SEL intervention implemented by regular teacher 2) SEL intervention implemented by psychology teacher 3) TASSEL intervention implemented by regular teacher and 4) TASSEL intervention implemented by psychology teacher. The first objective of the study was to establish which teacher type is significant in improving students' SEL knowledge and reducing learning anxiety and dropout intention. Similarly, the second objective was also to investigate which intervention is more effective in improving students' SEL knowledge and reducing learning anxiety and dropout intention. The third objective was to investigate if there is any interaction of teacher type X intervention type among the four groups in improving students' SEL knowledge and reducing learning anxiety and dropout intention.

METHODOLOGY

Research Design

This study employed a 2 x 2 factorial between-subject quasi-experimental design, in which intervention type and teacher type were manipulated to produce four different versions of experiments as shown in Table 1. Therefore, to test the main effect, independent variables were intervention type (TASSEL and SEL) and teacher type (Psychology teacher and regular teacher). The dependent variables included SEL knowledge, learning anxiety, and intention to drop out. Since the study was conducted at a school, a quasi-experimental design allowed us to recruit intact classrooms as experimental groups (Creswell, 2012).

Participants and Sampling

The study was conducted in Qinzhou City in Southwest China. Qinzhou City is one of the poorest places in the country, with a high dropout rate in rural junior high schools. Out of 200 junior high schools in the city, one boarding school was randomly chosen to conduct the study. A total of 209 students (107 boys, 102 girls) from Grade 8 with a mean age of 14.3 years were recruited to participate in this study. Out of 7 classes in Grade 8, four classes were randomly chosen to run the experiments.

Table 1

Experimental Design: 2 × 2 Factorial Design

Condition	Intervention type	Teacher type	Male	Female
1	SEL	Regular teacher	29	22
2	SEL	Psychology teacher	20	30
3	TASSEL	Regular teacher	32	23
4	TASSEL	Psychology teacher	26	27
Total			107	102

SEL-Social emotional learning; TASSEL-Teacher autonomy support Social-emotional learning.

In order to control the experimenter effect, it is recommended to have almost identical teachers (Ross & Morrison, 2004) to run the experiments. Four teachers (2 regular and 2 from psychology background) who matched on demographic variables such as age, gender, and the number of years' teaching experience were recruited to participate in the study. The two teachers to deliver TASSEL were chosen based on the general causality orientation scale (GCOS), which measured teachers' orientation ranging from autonomy-supportive to control or impersonal motivating style. The teachers who scored higher on autonomy-supportive orientation were recruited for TASSEL intervention, the other two were selected for SEL intervention..

Instruments

SEL Knowledge Questionnaire
The 20 items self-report knowledge questionnaire is designed to assess the knowledge of healthy social-emotional and behavioural skills before and after the SEL intervention. It is essentially a way to measure students' knowledge, especially social and emotional coping strategies through the contents taught

in the course. The instrument consists of true and false items and multiple-choice questions. Each item is scored correctly or incorrectly using the scoring keys provided in the course. Each correct item is given 1 point. An example of item is "Uncomfortable emotions for most people are (a) excitement, (b) frustration, (c) curiosity, (d) content". This Questionnaire has been used in several studies (Feuerborn, 2004; Faust, 2006; Isava, 2006) which have shown that these 20 items are sensitive to change in knowledge among students who participated in the intervention. Internal consistency reliability (Cronbach's alpha) for this scale ranges from 0.60 to 0.70.

Learning Anxiety Scale

The study used a variant of the Children's Dominant Anxiety Scale (CMA), known as the Learning Anxiety Index (Reynolds & Richmond, 1978). The Learning Anxiety Index (LA) is the most widely used scale to measure the anxiety of junior high school students in China (Wang et al., 2016). It consists of 15 questions raised by the Mental Health Test (MHT) (Gan, Bi & Ruan, 2007; Zhou, 1991). Each item uses a yes or no answer. A correct answer gets 1 point for each question. More than 8 points on this variable implies higher levels of learning anxiety, less than 3 indicates a low level of learning anxiety. The reliability of LA ranges from 0.84 to 0.88, and that of retest ranges from 0.78 to 0.86 (Yao, Kang, Gong, Chen, & Zhang, 2011).

Dropout Intention

Intentions to persist versus drop out test scale (Vallerand et al.1997), was used to test rural junior middle school students' intention to drop out. It includes three items to assess the willingness to stick to school or drop out. A sample item is "I sometimes think about dropping out". Each item uses a six-point Likert-type scale ranging from 1 (strongly disagreed) to 6 (strongly agreed). The scale has been shown to be reliable, with Cronbach's alpha of 0.78.

General Causality Orientation Scale

The General Causality Orientation Scale (GCOS) (Deci & Ryan, 1985) was designed to assess three different motivational orientations: autonomy, control, and impersonal in an individual. It has a total of 36 items in twelve vignettes, each with three options to be responded on a six-point Likert scale ranging from 1=very unlikely, to 6=very likely. The scale has been shown to be reliable, with Cronbach's alpha of about 0.75 and a test-retest coefficient of 0.74 over two months (Deci & Ryan, 1985). In the current study, this scale was used to recruit teachers for TAS experimental conditions.

Learning Climate Questionnaire

This questionnaire is to access the degree to which target individuals such as students, employees, perceive people in authority such as teachers, managers,

to be autonomy supportive. For the present study, a short six-item version was used to assess the degree to which the students perceived their teachers to be autonomy supportive. A higher score on scale represented a higher level of autonomy support. The scale of Learning Climate Questionnaire (LCQ) had been used successfully in learning settings (Black & Deci, 2000), the alpha coefficient of internal consistency of LCQ was reported above 0.90. In the present study, the scale was used prior to intervention (classroom without TAS) as a pretest and after the intervention (classroom with TAS) as a posttest, in order to establish treatment fidelity.

Intervention

SEL-Regular

The primary intervention for the current study was adopted from the original Strongkids curriculum (Carrizales-Engelmann et al., 2016) which was originally developed by experts at the University of Oregon. It offers a comprehensive series for each stage consisted of a set of curriculum manuals that target students' mental health development at five levels: a) Strong Start (Pre-K), b) Strong Start (grades K to 2), c) Strongkids (grades 3 to 5), (d) Strongkids (grades 6 to 8), and e) Strong Teens (grades 9 to 12). For the current study, we adopted a curriculum for grade level 6 to 8. It comprises 12-lessons designed to be taught in 30-90 minutes. The topics in the lessons are centred on bringing cognitive, affective, and behavioural changes among students to acquire social and emotional skills. The primary researcher had conducted face to face interviews with teachers and students to adapt and align the original curriculum with Chinese social and cultural values. For example, the identification of appropriate ways to express feelings is different in China than that of in the west. Students may choose to keep quiet or write or draw to express their feelings instead of demonstrating behavioural aggression. A sample of one lesson plan is illustrated in the Table 2.

Table 2

SEL Lesson Sample
Lesson 5: Dealing with Anger- Identifying Anger and Ways to Control Anger

Activity	Content
Ice breaking activity	• Students play charades by acting out emotions cards shown by their teams to let other team guess it.
Revision	• Previous is revised.

<div align="right">(continued)</div>

Activity	Content
Mindfulness-Based Focusing Activity	• Students write a short reflection on any incident that triggered anger. • They discussed physical and behavioral changes they experienced during that event.
Key terms and definitions	• Key terms and definitions are introduced using power points slides.
Activities according to each lesson	• Students have small case studies on situation that trigger anger to read and enact in groups. • Later students present those role play to rest of the class. • The class provided feedback on how they could have managed their anger in those situations. • Students enlist the anger management strategies from those discussions.
Putting it all together and Closure	• Students develop a flowchart ranging from incident to emotional reaction to solution to mitigate that reaction.
Tips for transfer training and Teamwork	• Each group is provided a case to read and suggest which anger management strategy could have been used to solve that problem
Teamwork Handout (personal)	• Students prepare handout to depict their personalized strategies or tips for close friends and family.

SEL-Teacher Autonomy Support

In the current study, we trained teachers to use autonomy-supportive behaviours while delivering the SEL lessons. The teacher autonomy-supportive instruction behaviours included "warm-up activities chosen by students", "give rational about each lesson", acknowledge students' perspective", "ask students to share their own experiments and accept students' negative emotions", "provide students choices to write about their feeling", "provide verbal feedback/praise for the activities", "allow group discussion with teamwork", "allow students to work at their own pace". An example of such a lesson is provided in Table 3.

Table 3

TASSEL Lesson Sample
Lesson 5: Dealing with Anger - Identifying Anger and Ways to Control Anger

Activity	Content
Ice-breaking activity	• The teacher presents a choice for students for icebreaking activity. For example, they can choose charade, flashcards, or an online app to identify positive and negative emotions. *TAS e.g. warm up activities chosen by students.*
Revision	• The previous lesson is revised by involving students in volunteering to answer so that each voice is heard. *TAS e.g. acknowledge students' perspective.* • The teacher begins the class by explaining in detail why the topic is important to learn.
Mindfulness-Based Focusing Activity	• Students reflect and share any incident that triggered anger with teachers or peers they feel close to. • They discuss physical and behavioral changes they experienced during that event personally or in groups, *TAS e.g. provides rationale; provided choices to choose the modes for sharing.*
Key terms and definitions	• Key terms and definitions are introduced using PowerPoints slides. • Students have small case studies on situations that trigger anger to read and enact in groups.
Activities according to each lesson	• The teacher asks students to share if they experience any discomfort or unpleasantness in undertaking these activities. • Later students present those role play to rest of the class. • The class provided feedback on how they could have managed their anger in those situations.

(continued)

Activity	Content
Putting it all together and Closure	• The teacher provides regular feedback to students' performance and feedback comments. • *TAS e.g. acknowledges negative emotion, provide continuous feedback.* Students work in groups enlist the anger management strategies from those discussions using a medium of their choice. • Students develop a flowchart ranging from incident to emotional reaction to a solution to mitigate that reaction which they can submit online after class. *TAS e.g. Provide choice, doesn't set limit, let students work at their pace, allow group discussions.*
Tips for transfer training and Teamwork	• Each group is provided a case to read and suggest which anger management strategy could have been used to solve that problem. • Teacher work personally with every group to provide feedback and prompts. *TAS e.g. Provide feedback and uses non-controlling language, group work*
Teamwork Handout (group work)	• Students work together to prepare handouts in the form of their choice to depict strategies or tips for close friends and family. *TAS e.g. Provide choice, group work*

Procedure – Data collection and intervention

Phase 1- The study began with obtaining ethical permission and consent for participation in the study from respective institutions, district office, school administrators' parents, teachers, and students. Participants were promised anonymity and their participation in the study was voluntary. No compensation was provided to the teachers or students for participation.

Phase 2- Both the interventions (12 lessons) were finalized and translated in Mandarin. A pilot was conducted to rule out any concerns during the final study. During this phase sampling of school was accomplished.

Phase 3- The groundwork began with teacher selection for the intervention. Following standard procedure for experimental design and mitigate the experimenter effect teachers to participate in the study were chosen carefully. The two teachers (regular teacher and psychology teacher) who scored highest on GCOS were recruited to deliver TASSEL intervention. To control the external validity threats, teachers were requested not to indulge details with others until the study is finished.

Phase 4- In this phase, the participating teachers were imparted training. Teachers for TASSEL intervention underwent systematic and rigorous training to acquire TAS styles following the guidelines from Su and Reeve (2011) and Kaur et al. (2015) and Strongkids curriculum. Teachers for regular SEL also underwent training following Strongkids curriculum kit (Carrizales-Engelmann et al., 2016).

Phase 5- In this phase, student participants took a pretest on all the dependent variables and reported other demographic information to establish homogeneity. Later, those classes were randomly assigned to one experimental condition each. Trained teachers were assigned accordingly to each group. A timetable with SEL intervention time and curriculum topic was shared with the students and teachers. For the duration of this experiment, other co-teachers were instructed to revise the break and lunchtime to avoid interaction between these classes. This facilitated in controlling for validity threats.

Phase 6- This was the final phase of the study which lasted from week 1 to week 12 whereby the teachers delivered the interventions they were trained for. The primary researcher observed those interventions twice in a month while the school administrator observed every week. At the end of the last class students reported on post-test questionnaires.

DATA ANALYSIS

The Statistical Package for the Social Sciences (SPSS) version 25 was used to run descriptive and inferential statistics. Missing data, multivariate outliers and normality was established prior to moving to final analysis. The reliability and validity of the instrument were established using Cronbach's alpha and exploratory factor analysis. Multivariate analysis of variance (MANOVA) was used as the main analysis.

RESULTS

The internal consistency of each variable was tested by observing Cronbach's alpha values. Principal axis factoring (PAF) factoring extraction method and

oblique rotation using the varimax method was used to run exploratory factor analysis. The factor loadings of all items with absolute values of .40 and above (Reio & Shuck, 2015) were accepted as adequate items to contribute significantly towards variables chosen for the study as shown in Table 4.

Table 4

Descriptive Statistic of Study Variables

Scale	Mean	SD	Reliability	Skewness	Kurtosis
SEL Knowledge	11.57	3.10	.76	-.240	-.726
Learning anxiety	9.63	3.58	.77	-.479	-.304
Dropout intention	3.49	1.24	.78	-.086	-.27

N=209

Manipulation Checks

To establish the fidelity of the TASSEL intervention students in all groups after the intervention filled out the Learning Climate Questionnaire (LCQ; Williams & Deci, 1996). This instrument recorded the degree to which students' experienced autonomy support provided by the teacher. It was found that students in TASSEL groups reported significantly higher scores (mean=3.15, p<.05) than students in SEL intervention groups (mean=2.62, p<.05) on perceived autonomy support.

Main analysis
Between-group MANOVA- Pretest
A between-group MANOVA was performed on the combination of three dependent variables, namely SEL knowledge, learning anxiety, and dropout intention for the four groups on pretest scores to determine if there was any significant difference among the four groups at pretest. Box's M statistics suggested equality of covariance across groups significant at alpha level p>.001. The omnibus multivariate results presented no significant difference (Wilks' λ=.95, F(3,205)=1.11, p>.05) within the four groups on all three variables at pretest level. Results of the follow up analysis for each variable were also insignificant. Therefore, it was assumed that all the groups came from a homogenous population.

Between-group MANOVA- Posttest
The omnibus multivariate results showed a significant difference (Wilks' λ =.778, F(3, 205) =5.98, p < .001) between the four groups on the combination of all three variables based on teacher type and intervention type. From Table 5, the mean difference showed that the group with a psychology teacher and TASSEL was most effective in increasing SEL knowledge (M=14.32,

SD=3.73). To reduce learning anxiety, the most effective group combination was psychology teacher and regular SEL (M=9.44, SD=3.00). Similarly, to reduce dropout intention, the most effective group was psychology teacher and TASSEL (M=2.70, SD=.91).

2X2 factorial MANOVA at posttest

Table 5

Summary of Means and Standard Deviations for Study Variables at Posttest

Teacher Type	Intervention Type	n	SEL knowledge	Learning anxiety	Dropout intention
Regular teacher	SEL	51	12.16(4.03)	9.63 (3.51)	3.24 (1.11)
Regular teacher	TASSEL	55	13.98(3.42)	10.33 (3.23)	3.51 (0.98)
Psychological teacher	SEL	50	14.00(3.39)	9.44 (3.00)	3.10 (1.26)
Psychological teacher	TASSEL	53	14.32(3.73)	12.28 (2.47)	2.70 (0.91)

A 2 X 2 factorial MANOVA at posttest revealed that the main effect of teacher type was significant, Wilks' Λ=0.91, F(3,203)=7.05, P<.001, $\eta 2$=.09 on the combination of all three dependent variables. This indicated that the linear composite score of SEL knowledge, learning anxiety, and dropout intention after the intervention was significantly different for regular teacher and psychology teacher.

A follow-up ANOVA test in Table 6 showed that a significant main effect of teacher type was observed on SEL knowledge, F(1,205)=4.67, p<.05, $\eta 2$=.02, learning anxiety F(1,205)=4.31, p<.05, $\eta 2$=.02, and dropout intention F(1,205) = 10.07, p<.005, $\eta 2$=.05. The mean score suggests that the psychology teacher was able to increase SEL knowledge (M=14.16, SD=3.55) more than the regular teacher (M=13.10, SD=3.82). Similarly, it was the psychology teacher who was able to reduce the intention to dropout (M=2.90, SD=1.11) more than the regular teacher (M=3.37, SD=1.05). However, it was the regular teacher who was significantly able to reduce the learning anxiety (M=9.99, SD=3.37) in comparison with the psychology teacher (M=10.90, SD=3.08).

The analysis also found that the main effect of intervention type was also significant, Wilks' Λ =.90s, F (3,203) = 7.28, P<.001, $\eta 2$=.10 on the combination of all three dependent variables. This indicated that the linear composite score of SEL knowledge, learning anxiety, and dropout intention after the intervention was significantly different between SEL and TASSEL.

A follow-up ANOVA test in table 6 below showed significant main effect of intervention type on SEL knowledge, $F(1,205)=4.51$, $p<.05$, $\eta2=.02$, on learning anxiety, $F(1,205)=17.31$, $p<.005$, $\eta2=.08$. However, there was no significant main effect of intervention type on the intention to dropout, $F(1,205)=.17$, $p>.05$, $\eta2=.00$. The mean scores suggest that TASSEL was more effective in enhancing SEL knowledge(M=14.15,SD=3.57) as compared to regular SEL(M=13.08, SD=3.71). However, it was the regular SEL that was able to reduce learning anxiety (M=9.53, SD=3.26) significantly more than the TASSEL (M=11.30, SD=2.85).

Finally, the interaction between teacher type and intervention was also found to be significant, Wilks'$\Lambda=.95$,$F(3,203)=3.92$, $P<.05$, $\eta2=.06$, which indicated that the linear composite of SEL knowledge, learning anxiety and dropout intention after the intervention was influenced by an interaction between teacher type and intervention type. A follow-up ANOVA test in Table 6 suggested that no significant interaction of teacher type and intervention type on SEL knowledge was observed, $F(1,205)=2.22$, $p>.05$, $\eta2=.01$. Nevertheless, a significant interaction of teacher type and intervention type was observed for learning anxiety, $F(1,205)=6.34$, $p<.05$, $\eta2=.03$, and a significant interaction of teacher type and intervention type was also found for the intention to dropout, $F(1,205)=5.11$, $p<.05$, $\eta2=.02$.

Table 6

Two-Way ANOVA Statistics

Source	Dependent variable	df	F	P	η
Teacher type	SEL knowledge	1	4.67	.03*	.02
	Learning anxiety	1	4.31	.039*	.02
	Dropout intention	1	10.07	.002**	.05
Intervention type	SEL knowledge	1	4.51	.04*	.02
	Learning anxiety	1	17.31	.000**	.08
	Dropout intention	1	.17	.681	.00
Teacher type X Intervention type	SEL knowledge	1	2.22	.14	.01
	Learning anxiety	1	6.34	.013*	.03
	Dropout intention	1	5.11	.025*	.02
Error	SEL knowledge	205			
	Learning anxiety	205			
	Dropout intention	205			

P<.05, p<.005

DISCUSSION

The objective of the study was to investigate which teacher type and intervention type is significant in improving students' SEL knowledge and reducing learning anxiety and dropout intention and if there was an interaction between the two independent variables. The 2 x 2 factorial MANOVA revealed that both teacher type and intervention type had a significant main effect of the acquisition of SEL knowledge among students. It was observed that while the psychology teachers were significantly better in enhancing SEL knowledge as compare to the regular teachers, TASSEL was better in enhancing SEL knowledge as compare to the regular SEL. However, there was no interaction between teacher type and intervention type on the acquisition of SEL knowledge.

Similarly, the results revealed that both teacher type and intervention type had a significant main effect on learning anxiety among students. Nevertheless, here it was found that the regular teacher was more effective in reducing students learning anxiety as compared to the psychology teacher. Moreover, for learning anxiety, it was the regular SEL that worked better in reducing anxiety as compared to TASSEL. There was also a significant interaction between teacher type and intervention type in reducing learning anxiety and psychological teacher with SEL intervention has the best intervention effect on learning anxiety.

In terms of the main effect for intention to drop out it was observed that teacher type was significant and while the main effect for intervention type was insignificant. The psychology teacher was found to be more effective in comparison to the regular teachers in reducing students' intention to drop out. However, the interaction was significant suggesting that a combination intervention type and teacher type can facilitate in reducing dropout intervention, the psychological teacher with TASSEL intervention has the best intervention effect on dropout intention.

Teacher Type

With regard to teacher effectiveness, the psychology teacher was effective in enhancing SEL knowledge as well as reducing the dropout intention. This result is reasonable, as psychological teachers are major in psychology, their knowledge, and pedagogical skills to transfer knowledge on the psychological construct is known to be more effective in comparison with regular teachers (Knof, 1995). Psychology teachers possess a comprehensive understanding of the development of children and adolescents to influence their knowledge

(Li, 2017). For example, SEL psychology teachers must know how to promote discussion on sensitive topics, such as anger management, how to build healthy relationships, and how to reduce risk behaviors. Moreover, the construct of SEL knowledge does not require cognitive change as much as required by learning anxiety. However, to our surprise, regular teacher delivered much better results in comparison with the psychology teachers for learning anxiety. Despite the popular notion that psychology teachers are more effective in delivering the psychology-based intervention (Li, 2017), in the current study, it is noted that regular teacher was more effective in reducing learning anxiety. Psychological teachers are known to possess a unique set of knowledge, skills, and abilities in assessing students' needs, designing, and implementing intervention plans (Ross, Powell, & Elias, 2002). However, it is plausible that regular teachers who meet students more often than the school psychology teachers (school counselors) have better relatedness and rapport with students in influencing their mindsets. Additionally, in the present context, the regular teachers perhaps are more familiar with students' daily lives and personal and academic challenges as compare to the psychology teachers. As regular teachers have more classes and more time to spend with students, they know much more about their daily lives and worries. Thus, students in the intervention groups with the regular teacher were able to demonstrate a lower gain score on learning anxiety, which is similar to the result of Ross et al. (2002).

Intervention Type

TASSEL was found to be effective in increasing students' SEL knowledge while SEL was effective in reducing learning anxiety. However, there were no significant differences between SEL and TASSEL interventions in reducing the intention to drop out. Based on the literature, we can see that teacher autonomy support helps students with educational and developmental outcomes such as better participation, higher level of learning quality, preference for the best challenges, and improved intrinsic motivation (Guay, Ratelle, & Chanal, 2008; Reeve, Jang, Carrell, Barch, & Jeon, 2004; Vansteenkiste, Simons, Lens, Sheldon, &Deci, 2004). As a result, the TASSEL intervention was helpful in students' acquisition of SEL related knowledge. However, TASSEL intervention failed to reduce learning anxiety in comparison with SEL intervention. The explanation for this can be found in Chinese culture which is predominately a collectivist culture (Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). Under collectivist culture students are obedient tend to respect hierarchy, for example, they do not question teachers and their authority (Kaur & Noman, 2015). They are encouraged to obey rules and follow collective norms. Independence from group is neither encouraged nor appreciated (Ramani et al.,2017).

Chinese students feel safer to be dependent on authority and experience less anxiety when they function with a group. For instance, when the teacher asks a question in class, the students prefer to answer it together. However, if the teacher wants to find a volunteer to answer, everyone becomes nervous, as they get worried about giving a wrong answer and will be scolded by the teacher and or maybe laughed at by classmates. Therefore, TAS that encourages students to speak up individually and be more expressive in turn increased students' learning anxiety.

Additionally, the significant interaction of teacher type and intervention type on learning anxiety and dropout intention suggests that for effective outcomes it is necessary to consider the choice of the teacher type and intervention type as the combination is likely to affect the outcome. For example, to reduce anxiety combination of SEL with psychology teacher delivered the best among group differences (M=9.44) and similarly to reduce the dropout intention effectively, the combination of psychology teacher with TASSEL was found to be most effective (M=2.70).

CONCLUSION

The impetus for the current study was to impart effective SEL intervention to junior high school students in rural China. It was established that junior high school students specifically from rural areas and those residing in boarding schools are highly vulnerable and significantly more susceptible to mental health issues than their counterparts in urban areas (Wang et al., 2015). Those mental health issues have been linked to poor academic performance, high dropouts, depression, and learning anxiety (Wang et al., 2016) which are detrimental to students' success as well to the national human development agenda (Wang et al., 2016). SEL interventions around the world have contributed to students' academic, personal, and social functioning through affective, cognitive, social skills acquisition (Durlak, et al., 2011). The current study tested the effectiveness of SEL intervention which was adopted from an empirically validated Strongkids curriculum (Carrizales-Engelmann et al., 2016) to be tested in four conditions which are teacher type (2) and intervention type (2). Teacher type included psychology and regular subject teacher whereas intervention type included SEL and TASSEL. The results revealed psychology teacher was more effective in reducing primary outcomes such as dropout intention and enhancing SEL knowledge as compared to the regular teacher. However, as a regular teacher enjoys more proximity in terms of connection and rapport with the students, was able to better reduce learning anxiety. In terms of intervention type, regular SEL was more effective in reducing learning anxiety. Teacher autonomy-supportive intervention style required students to function in a more independent way which we

believe aggravated anxiety among rural high school students in the Chinese context. Nevertheless, within-group analysis and interaction effect suggest that psychology teachers can be effective if they present SEL intervention in regular way.

Despite meaningful results, the study is not without its limitations. A true experimental design that allowed random assignment of students to multiple intervention conditions would have been useful. For future studies, longitudinal interventions are recommended. Additionally, it would be meaningful to measure real dropout rates rather than the intention to drop out. It is believed that these findings can be of great assistance for school management and teachers in designing appropriate Social-emotional learning intervention in terms of how those interventions should be delivered and by who.

ACKNOWLEDGEMENT

REFERENCES

Agmon, M., Cheryl, Z., & Finkelstein, A. (2015). The relationship between mentoring on healthy behaviors and well-being among Israeli youth in boarding schools: A mixed-methods study. *BMC Pediatrics*, *15(1)*, 11. doi: http://dx.doi.org/10.1186/s12887-015-0327-6

Ak, L., & Sayil, M. (2006). Three different types of elementary school students' school achievements, perceived social support, school attitudes and behavior-adjustment problems. *Educational Sciences: Theory & Practice*, *6*(2).

American Psychological Association. (2020). *Anxiety*. https://www.apa.org/topics/anxiety/#:~:text=Anxiety%20is%20an%20emotion%20characterized,certain%20situations%20out%20of%20worry

Barrios, B. A., & Hartmann, D. P. (1997). Fears and anxieties. In E. J. Mash & L. G. Terdal (Eds.), *Assessment of childhood disorders* (3rd ed., pp. 230–327). New York: Guilford Press.

Benner, G., Kutash, K., Nelson, J., & Fisher, M. (2013). Closing the achievement gap of youth with emotional and behavioral disorders through multi-tiered systems of support. *Education and Treatment of Children*, *36*(3), 15-29.

Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education*, *84*(6), 740-756.

Carrizales-Engelmann, D., Feuerborn, L. L., Gueldner, B. A., & Tran, O. K. (2016). *Merrell's Strong Kids—Grades 6-8: A social and emotional learning curriculum.* Baltimore, MD: Paul H Brookes Publishing.

Cheon, S. H., Reeve, J., Lee, Y., & Lee, J. W. (2018). Why autonomy-supportive interventions work: Explaining the professional development of teachers' motivating style. *Teaching and Teacher Education*, *69*, 43-51.

Cook, C., Frye, M., Slemrod, T., Lyon, A., Renshaw, T., & Zhang, Y. (2015). An integrated approach to universal prevention: Independent and combined effects of PBIS and SEL on youths' mental health. School Psychology Quarterly: *The Official Journal of the Division of School Psychology, American Psychological Association*, *30*(2), 166-83.

Collaborative for Academic, Social, and Emotional Learning. (2000). *Social and emotional learning program review*. http://www.casel.org.

Collaborative for Academic, Social, and Emotional Learning. (2017). *Core SEL competencies.*

Creswell, J. W. (2012). *Educational research: planning, conducting, and evaluating quantitative and qualitative research* (4th ed.): Pearson Education.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York: Plenum.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11,* 227–268.

Denham, S. A., & Brown, C. (2010). Plays nice with others: Social–emotional learning and academic success. *Early Education and Development*, *21*(5), 652-680.

Dowdy, E., Kamphaus, R. W., Twyford, J. M., & Dever, B. V. (2014). *Culturally competent behavioral and emotional screening.* In Handbook of school mental health (pp. 311-321). Springer, Boston, MA.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, *82*(1)*,* 405-432.

Evans, D., Borriello, G. A., & Field, A. P. (2018). A review of the academic and psychological impact of the transition to secondary education. *Frontiers in Psychology*, *9*, 1482.

Feuerborn, L. L. (2004). *Promoting emotional resiliency through instruction: The effects of a classroom-based prevention program* (Unpublished doctoral dissertation).

Faust, J. J. (2006). Preventing depression and anxiety: An evaluation of a social-emotional curriculum. (Unpublished education specialist's thesis). University of Wisconsin, Whitewater, USA.

Gan, T., Bi, Z., & Ruan, K. (2007). A review and outlook of mental health measure tools used for middle school students. *Chinese Journal of School Health*, *28*, 191-192.

Goleman, D. (2000). Leadership that gets results. *Harvard Business Review*, *78*(2), 4-17.

Green, J. G., McLaughlin, K. A., AlegríÅLa, M., Costello, E. J., Gruber, M. J., & Hoagwood, K., et al. (2013). School mental health resources and adolescent mental health service use. *Journal of the American Academy of Child and Adolescent Psychiatry*, *52*(5), 501–510. https://doi.org/10.1016/j.jaac.2013.03.002

Guay, F., Ratelle, C. F., & Chanal, J. (2008). Optimal learning in optimal contexts: The role of self-determination in education. *Canadian Psychology*, *49*(3), 233–240.

Gutiérrez, M., & Tomás, J. M. (2019). The role of perceived autonomy support in predicting university students' academic success mediated by academic self-efficacy and school engagement. *Educational Psychology*, *39*(6), 729-748.

Hằng, B., Kaur, A., & Hamid, A. (2017). A motivational model on intentions to drop out of vocational school - A self determination theory perspective. *Malaysian Journal of Learning and Instruction*. *14*(1), 1-21.

Harlacher, J. E., & Merrell, K. W. (2010). Social and emotional learning as a universal level of student support: Evaluating the follow-up effect of Strongkids on social and emotional outcomes. *Journal of Applied School Psychology*, *26*(3), 212-229.

Hetrick, M. R. (2018). Universal implications for the effects of strongkids social and emotional learning curriculum on students' social-emotional competency: A quantitative analysis. *Graduate Theses and Dissertations*. *41*. https://pilotscholars.up.edu/etd/41

Hjorth, C. F., Bilgrav, L., Frandsen, L. S., Overgaard, C., Torp-Pedersen, C., Nielsen, B., & Bøggild, H. (2016). Mental health and school dropout across educational levels and genders: A 4.8-year follow-up study. *BMC Public Health*, *16*(1), 976.

Isava, D. M. (2006). *An investigation of the impact of a social-emotional learning curriculum on problem symptoms and knowledge gains among adolescents in a residential treatment center* (Unpublished doctoral dissertation).

Kamarulzaman, W., & Jodi, K. H. M. (2018). A review of mental illness among adolescents in Malaysia. *International Journal of Education, 3*(20), 73-82.

Kauffman, J. M., & Landrum, T. J. (2009). Politics, civil rights, and disproportional identification of students with emotional and behavioral disorders. Exceptionality, *17*(4), 177-188.

Kaur, A., Awang-Hashim, R., & Noman, M. (2014). Teacher autonomy support: Does it hinder motivation among Thai students? *Malaysian Journal of Learning and Instruction*, *11*, 171-189.

Kaur, A., & Noman, M. (2015). Exploring classroom practices in collectivist cultures through the lens of Hofstede's Model. *The Qualitative Report*, *20*(11), 1794-1811.

Kaur, A., Awang-Hashim, R., & Noman, M. (2015). Teacher autonomy support intervention as a classroom practice in a Thai school-A self-determination theory perspective. *Journal for Multicultural Education, 9*(1), 10-27.

Knoff, H. M. (1995). Best practices in facilitating school-based organizational change and strategic planning.

Li, F. (2017). *Investigation on mental health problems of rural junior middle school students in remote mountainous areas and research on coping mechanisms* (Unpublished doctor's degree thesis of Jilin University).

Li, F. Z., Yang, C. L., & Huang, M. (2018). Course orientation of social emotional learning in China. *Guangxi Education*, (12), 40-45.

Liu, D., Chen, X. P., & Yao, X. (2011). From autonomy to creativity: A multilevel investigation of the mediating role of harmonious passion. *Journal of Applied Psychology*, *96*(2), 294.

Merrell, K. W., & Buchanan, R. (2006). Intervention selection in school-based practice: Using public health models to enhance systems capacity of schools. *School Psychology Review*, *35*(2), 167-180.

Merrell, K. W., Carrizales, D. C., Feuerborn, L. C., Gueldner, B. A., & Tran, O. K. (2007). Strongkids--Grades 6-8: *A social and emotional learning curriculum.* Paul H Brookes Publishing.

Merrell, K. W. (2010). Linking prevention science and social and emotional learning: The Oregon Resiliency Project. *Psychology in the Schools*, *47*(1), 55-70.

Merikangas, K. R., Nakamura, E. F., & Kessler, R. C. (2009). Epidemiology of mental disorders in children and adolescents. *Dialogues in Clinical Neuroscience*, *11*, 7–20.

Merikangas, K. R., He, J. P., Brody, D., Fisher, P. W., Bourdon, K., Koretz, D. S. (2010). Prevalence and treatment of mental disorders among US children in the 2001–2004 NHANES. *Pediatrics*, *125*, 75–81. https://doi.org/10.1542/peds.2008-2598

Merikangas, K. R., He, J., Burstein, M., Swendsen, J., Avenevoli, S., & Case, B., et al. (2011). Service utilization for lifetime mental disorders in US adolescents: Results of the National Comorbidity Survey Replication – adolescent supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry*, *50*, 32–45. https://doi.org/10.1016/.jaac.2010.10.006

Ramani, S., Post, S. E., Könings, K., Mann, K., Katz, J. T., & Van Der Vleuten, C. (2017). It's just not the culture: A qualitative study exploring residents' perceptions of the impact of institutional culture on feedback. *Teaching and Learning in Medicine, 29(2)*, 153-161.

Ravens-Sieberer, U., Wille, N., Erhart, M., Bettge, S., Wittchen, H. U., Rothenberger, A., ... & Barkmann, C. (2008). Prevalence of mental health problems among children and adolescents in Germany: Results of the BELLA study within the National Health Interview and Examination Survey. *European Child & Adolescent Psychiatry*, *17*(1), 22-33.

Reid, R., Gonzalez, J., Nordness, P., Trout, A., & Epstein, M. H. (2004). A meta-analysis of the academic status of students with emotional/ behavioral disturbance. *The Journal of Special Education*, *38*, 130–143. https://doi.org/10.1177/00224669040380030101

Reio Jr, T. G., & Shuck, B. (2015). Exploratory factor analysis: Implications for theory, research, and practice. *Advances in Developing Human Resources, 17*(1), 12-25.

Reardon, S. F., & Galindo, C. (2002, April). Do high-stakes tests affect students' decisions to drop out of school? Evidence from NELS. *Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA*.

Reynolds, C. R., & Richmond, B. O. (1978). What I think and feel: A revised measure of children's manifest anxiety. *Journal of Abnormal Child Psychology*, *6*(2), 271-280.

Reeve, J., Jang, H., Carrell, D., Barch, J., & Jeon, S. (2004). Enhancing high school students' engagement by increasing their teachers' autonomy support. *Motivation and Emotion*, *28*(2), 147–169.

Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. *Journal of Educational Psychology*, *98*(1), 209.

Ross, M. R., Powell, S. R., & Elias, M. J. (2002). New roles for school psychologists: Addressing the social and emotional learning needs of students. *School Psychology Review*, *31*(1), 43-52.

Ross, S. M., & Morrison, G. R. (2004). *Experimental research methods*. Handbook of research on educational communications and technology, *2*, 1021-43.

Scharff. Constance. (2012). *Child abuse prepares for a lifetime of mental health issues*. https://www.psychologytoday.com/us/blog/ending-addiction-good/201506/child-abuse-prepares-lifetime-mental-health-issues

Schwartz, M. C. (2016). T*he implementation of a social-emotional learning curriculum for targeted students: Evaluating strong start as a Tier II Intervention* (Unpublished doctoral dissertation).

Shi, Y., Zhang, L., Ma, Y., Yi, H., Liu, C., Johnson, N., Chu, J., Loyalka, P., & Rozelle, S. (2015). Dropping out of rural China's secondary schools: A mixed-methods analysis. *China Quarterly*, *224*, 1048–1069.

Spielberger, C. D., & Vagg, P. R. (1995). *Test anxiety: Theory, assessment, and treatment*. Washington, DC: Taylor & Francis.

Su, Y-L., & Reeve, J. (2011). A meta-analysis of the effectiveness of intervention programs designed to support autonomy. *Educational Psychology Review*, *23*, 159–188.

Szalavitz, M. (2012). How child abuse primes the brain for future mental illness. *TIME Healthland, 109*(9), E563–E572. https://doi.org/10.1073/pnas.1115396109

Tobler, N. S., Roona, M. R., Ochshorn, P., Marshall, D. G., Streke, A. V., & Stackpole, K. M. (2000). School-based adolescent drug prevention programs: 1998 meta-analysis. *Journal of Primary Prevention*, *20*(4), 275-336.

Triandis, H. C., Bontempo, R., Villareal, M. J., Asai, M., & Lucca, N. (1988). Individualism and collectivism: Cross-cultural perspectives on self-ingroup relationships. *Journal of personality and Social Psychology*, *54*(2), 323.

Vallerand, R. J., Fortier, M. S., & Guay, F. (1997). Self-determination and persistence in a real-life setting: Toward a motivational model of high school dropout. *Journal of Personality and Social Psychology*, *72*(5), 1161.

Vansteenkiste, M., Simons, J., Lens, W., Sheldon, K. M., & Deci, E. L. (2004). Motivating learning, performance, and persistence: The synergistic role of intrinsic goals and autonomy-support. *Journal of Personality and Social Psychology*, *87*, 246–260.

Vansteenkiste, M., Simons, J., Lens, W., Soenens, B., & Matos, L. (2005). Examining the impact of extrinsic versus intrinsic goal framing and internally controlling versus autonomy-supportive communication style upon early adolescents' academic achievement. *Child Development*, *76*, 483–501.

Voigt, S., Schaffrath Rosario, A., & Mankertz, A. (2016, January). Cytomegalovirus seroprevalence among children and adolescents in Germany: Data from the German Health Interview and Examination Survey for Children and Adolescents (KiGGS), 2003–2006. In *Open Forum Infectious Diseases* (Vol. 3, No. 1, p. ofv193). Oxford University Press.

Wang, H., Yang, C., He, F., Shi, Y., Qu, Q., Rozelle, S., & Chu, J. (2015). Mental health and dropout behavior: A cross-sectional study of junior high students in northwest rural China. International *Journal of Educational Development*, *41*, 1–12.

Wang, H., Chu, J., Loyalka, P., Xin, T., Shi, Y., Qu, Q., & Yang, C. (2016). Can social–emotional learning reduce school dropout in developing countries? *Journal of Policy Analysis and Management*, *35*(4), 818-847.

Weist, M. D., Eber, L., Horner, R., Splett, J., Putnam, R., & Barrett, S., Hoover, S. (2018). Improving multitiered systems of support for students with internalizing emotional/behavioralproblems. *Journal of Positive Behavior Interventions, 20*, 172–184. https://doi.org/10.1177/1098300717753832

Wilson, D. B., Gottfredson, D. C., & Najaka, S. S. (2001). School-based prevention of problem behaviors: A meta-analysis. *Journal of Quantitative Criminology*, *17*(3), 247-272.

Williams, G. C., & Deci, E. L. (1996). Internalization of biopsychosocial values by medical students: A test of self-determination theory. *Journal of Personality and Social Psychology*, *70*(4), 767–779.

Wolf, L. F., & Smith, J. K. (1995). The consequence of consequence: Motivation, anxiety, and test performance. *Applied Measurement in Education*, *8*(3), 227-242. https://doi.org/10.1207/s15324818ame0803_3

Yao, Y., Kang, Y., Gong, W., Chen, Y., & Zhang, L. (2011). MHT scale of adolescent with different gender: A meta-analysis. *Chinese Journal of Evidence-based Medicine*, *11*, 211–219.

Zhang Xinghui., Yajun Li., Qin Zhang., Furong Lu., & Yun Wang. (2014). Smoking and its risk factors in Chinese elementary and middle school students: A nationally representative sample study. *Addictive Behaviors*, *39*(5), 837-841.

Zhou, B. (1991). *Mental Health Test (MHT)*. Shanghai: East China Normal University Press.

Zins, J. E., Bloodworth, M. R., Weissberg, R. P., & Walberg, H. J. (2007). The foundations of social and emotional learning. *Journal of Educational and Psychological Consultation*, *17*, 191–210.