Special Education Teachers' Perceived Work Stress, Burnout Symptoms, Towards Adoption of Transformational Teaching in Inclusive Schools: A Cross-Country Study Between Indonesia and Thailand

Sujarwanto[*] (ID)
Universitas Negeri Surabaya,
INDONESIA

Wulan Patria Saroinsong (ID)
Universitas Negeri Surabaya,
INDONESIA

Chinun Boonroungrut (ID)
Silpakorn University,
THAILAND

Budi Purwoko (ID)
Universitas Negeri Surabaya,
INDONESIA

Abstract: During the implementation of the inclusive education policy in several countries in Association of Southeast Asian Nations (ASEAN), the psychological health of special education teachers should be considered as a key success factor. This study explored special education teachers' perceived work stress (PWS), bio-psychological burn-out symptoms (BPS), and transformational teaching (TFT) in inclusive education in Indonesia and Thailand. There were 177 Indonesian and 199 Thai teachers completing a series of questionnaires that included BPS, PWS, and TFT. The results showed that BPS and PWS were high, whereas BPS and TFT were significantly different across nations. No gender differences were found among both Indonesian and Thai teachers. Moreover, TFT could be significantly predicted by positive age and negative work stress, which explained 8% of the variance among Indonesian teachers ($R^2 = .08$, $F(4, 172) = 4.18$, $p < .01$) and by positive age and negative burnout symptoms, which explained 6% of the variance among Thai teachers ($R^2 = .06$, $F(4, 186) = 3.18$, $p < .05$). Furthermore, inclusive education policymakers and stakeholders should be aware of psychological health improvement including burnout symptoms and work stress, which negatively invade the role of TFT among special education teachers in both countries.

Keywords: *Burnout symptoms, inclusive education, special education teacher, transformational teaching, work stress.*

Introduction

In the last three decades, inclusive education has changed regular education systems to address the needs of diverse students (Xie et al., 2021). Within the inclusive philosophy, students with disabilities or special needs are placed within mainstream classrooms without structural changes (Hehir et al., 2016). This notion has been declared by the United Nations Salamanca Statement in 1994, which was signed by 92 member countries, and argues that inclusive schools are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society, and achieving education for all. The term has gained international attraction (Messiou, 2017). Inclusive education has become a concern in research and professional practice and an urgent national education policy agenda. This notion has been explored and expanded in various areas including psychology, pedagogy, and education. Moreover, it has been linked to current initiatives in schools to respect diversity and an equitable society (Amor et al., 2019).

Literature Review

Special Education Teachers in Inclusive Education

The responsibilities and titles of special education teachers in inclusive schools vary across countries even in different regions within the same country, for instance, academic supporting teachers, teaching coordinators, social counselors, and school developers (Agaliotis & Kalyva, 2011; Göransson et al., 2017). Practically, significant differences in how countries strive to promote inclusion exist encompassing specific obstacles faced by each country (Schwab, 2020). The roles of special education teachers in inclusive education can be categorized into four main tasks namely direct teaching, identifying and assessing students' progress, collaborating and consulting, and supporting schools' strategic planning

[*] **Corresponding author:**
Sujarwanto, Universitas Negeri Surabaya, Indonesia. ✉ sujarwanto@unesa.ac.id

toward inclusive practice (Dobson & Douglas, 2020). These individual tasks seem to overlap leading to heavy workloads for special education teachers. Previous studies reported that the role of special education teachers comprises small group teaching and co-teaching with main subject teachers. These teachers are also required to monitor and record students' progress. Additionally, designing individual teaching plans (e.g., individual education plans) to become general consultants in regular classrooms and attend school development plans are defined as key professional performances (Boonroungrut, Saroinsong, Eiamnate, & Sujawanto, 2022; Boonroungrut, Saroinsong, & Thamdee, 2022; Fitzgerald & Radford, 2017; Göransson et al., 2017).

Emanuelsson (2001) states that the role of special education teachers in inclusive education transforms from categorical to relational aspects. In this sense, special education teachers not only support disabled students but also collaborate with teachers to retain diverse learning in all classes. Prior research reported challenges for special education teachers in inclusive education concerning the lack of knowledge support on disabilities and individual differences, heavy workloads, and psychological distress during work. Knowledge of disabilities and individual differences is expected to be fundamental for teachers in inclusive education. However, several studies have pointed out that they lack support including material, administration, and professional development, especially in rural schools (Chao et al., 2017; Hamdan et al., 2016; Magnússon & Göransson, 2019; Warman, 2021). Moreover, special education teachers are overwhelmed with the workload of a substantial number of students in class (Kantavong et al., 2017) and time limitations per task (Takala et al., 2009). Special education teachers' workload is often seen as a source of stress leading to burnout symptoms, which are characterized by emotional exhaustion, depersonalization, and low personal accomplishment. In coping with the previous studies, teachers' stress and burnout were recognized as critical concerns because their psychological well-being was threatened, and various physical and mental negative outcomes were produced (Park & Shin, 2020; Squillaci & Hofmann, 2021)

Transformative Teaching in Inclusive Education

Transformative teaching has been originally derived from transformational learning theory, which is currently used in pedagogical discussion. Through its concept, the classroom is recognized as an initial social organization in which teachers and students work together inside and outside the classroom. This teaching method concerns helping students evaluate their thinking skills. Its main components include idealized influence to indicate vision and ability, inspirational motivation to develop confidence, individual consideration to provide individual feedback for personal growth and intellectual stimulation to rethink students' values and beliefs (Slavich & Zimbardo, 2012). Thus, teachers play a significant role in establishing genuine and meaningful relationships with all students in their transformative classroom (Boyd, 2009) Prior research found a positive association between transformational teaching (TFT) and student learning outcomes at all educational levels, i.e., English skill improvement (Tahir, 2018)., discussion skills in students' seminars (Caraballo & Soleimany, 2019)., and learning effective team management (Ssegawa & Kasule, 2015). Through transformative teaching, students' emotional learning and psychological safety enchant their intentional changes (Jagers et al., 2019; Kwon et al., 2020). Hence, using relevant and meaningful knowledge for students' lives becomes the core transformative teaching concern.

The concept of transformative teaching seems to be a new paradigm for inclusive education (Murdoch et al., 2020). Consequently, the obstacles to the practical implications of inclusive education concede that the reform is considerable. Several special education teachers often face the uncertainty of the everyday working role in inclusive schools, especially when they attempt to shift their practices to reframe special education teaching (Wiest & Kreil, 1995). Previous research revealed some common barriers to performing TFT in special and inclusive education, mainly increasing workloads and demands for accountability, shrinking school budgets, and increasing numbers of disruptive students (Gong et al., 2013). According to Slavich and Zimbardo (2012), teachers' low instructional efficacy would likely decrease students' mastery when transforming learning-related values, beliefs, and skills. Job burnout becomes a source of the teachers' low efficacy. Thus, the second research question hypothesized that stress might be a negative predictor of TFT among special education teachers.

The Present Study

Since the implementation of the Salamanca Framework for Action in 1994, which is integral to Association of Southeast Asian Nations' (ASEAN) commitments toward inclusive education, the action has not yet fully executed and captured its principles in this region. In August 2011, Indonesia announced itself to be the leader in the inclusive education field. The main goal of inclusive education is to decrease discrimination against disabilities. Sixty areas (e.g., 12 provinces and 48 districts/cities) have been designated as inclusive education implementers as of 2015. In many regions of Indonesia, the implementation of inclusive education has been quickly increasing and improving in United Nations Educational, Scientific and Cultural Organization (UNESCO) estimates that such an implementation for children with special needs in Indonesia would reach 65% in 2015 (Sujarwanto et al., 2022). The Regulation of the National Ministry of Education Number 70 of 2009 (also known as Permendiknas 70/2009) is Indonesia's national policy on inclusive education. It is by Law 20/2003 on the National Education System, which mandates comprehensive basic education for all citizens (Mulyadi, 2017). The center for empowerment and training for teachers and education personnel in kindergarten and

special needs education is responsible for providing training in each province. Currently, no compulsory pre-service teacher training, only in-service available, is provided. Unfortunately, many teachers in rural areas have never been trained (Hata et al., 2021).

On the contrary, Thailand has just established a national policy for promoting inclusive education in 2022, and, it is an initial step with a low impact on the existing educational system. Educational equity is the goal of inclusive education focusing on decreasing the number of disabilities, inclusive concept integration, and school selection and evaluation. Inclusive pilot school projects have been established in the past decade, yet the teachers' well-being is not mainly concerned by this action. In the practical concept, teachers who work with regular students must take the special education training course to make the cooperation between teachers. However, Thailand has long struggled to find enough special education teachers for both pre-service and in-service training (Sanrattana, 2010). Special education teachers mostly have positioned in special education schools or centers, not in inclusive schools. Additionally, the government currently provides resources to serve diverse needs in inclusive education only for students who possibly cope in regular classrooms. Most schools in Thailand that accept children with special needs are integrated schools. Although several schools called themselves inclusive schools, the inclusive services were not truly provided. That is, students with special needs only participate with regular students in extra-learning activities (Vibulpatanavong, 2018; Wong, 2020). Thus, these two countries declare the different inclusive education practices in the execution that possibly impact special education teachers unrivaled.

To focus on psychological health, according to the previous research, the relationship between teachers' gender, age, stress burnout, and its outcomes has been regularly questioned and remains unclear. Several studies indicated no significant difference between genders (Ghani et al., 2014); however, some others provided evidence that gender could be a source of different degrees of work stress. Female teachers seem to perceive stress more than males (Sari, 2004; Sarıçam & Sakız, 2014; Xhelilaj et al., 2021). In addition, younger teachers are more affected by work stress and burnout than older teachers, resulting in a leave rate nearly twice as high as older teachers. Teaching experience is highly associated with increasing age among older teachers (Billingsley, 2004; Nursalim et al., 2023; Zabel & & Kay Zabel, 2001). As a research gap, the issue of stress and burnout symptoms among ASEAN special education teachers in inclusive schools has still received little research attention.

Several countries are building their inclusive education policies. Different communities and cultures are likely to construct inclusive pedagogies individually in the classroom. According to ongoing changes from the inclusive policy implementation, special education teachers in inclusive education in Indonesia and Thailand have faced threatening situations with heavy workloads, job role confusion, and lack of knowledge and support. This study aims to explore special education teachers' PWS, BPS, and TFT in inclusive education in Indonesia and Thailand with the following research questions:

1. What are the differences in BPS, PWS, and TFT in terms of nation, gender, and age group among special education teachers?

2. Can special education teachers' demographic factors, BPS and PWS predict their role in transformative teaching?

This study provides a further understanding on insight into the perspectives of psychological health among special education teachers in inclusive schools in both countries. The findings share practical implications for school policymakers to ensure the needs and support of their teachers in inclusive education.

Methodology

Research Design

Concerning the impact of special education teachers' demographic factors, BPS, and PWS on their role in transformative teaching, the research will be quantitatively designed based on the results of multiple linear regression. In addition, the research explores the impacts of those mentioned variables between two groups of participants, including Indonesian and Thai teachers.

Participants

A total of 376 special education teachers who had experience in teaching 3–12-year-old students with special needs in inclusive schools and education centers in Indonesia (n = 177) and Thailand (n = 199) were recruited. Schools and centers were chosen randomly. Participants in each selected region were chosen using a clustered sampling technique. Consent papers and all processes were informed after gaining permission from the principals using an online platform in Indonesia and online and paper-based surveys in Thailand. The principals were informed about the research goal, which would be useful during the pandemic in both nations between 2020 and 2021. All participants completed and returned the questionnaires. Notably, Indonesian teachers were from 59 districts, and Thai teachers were from 36 districts. All participants showed no difference in number analyzed by Chi-square indicating $\chi2_{gender}$ (1, n = 368) = .56, p = .45; $\chi2_{age}$ (4, n = 368) = 2.48, p = .64.

A total of 376 special education teachers were eligible to participate. Specifically, 177 teachers were from Indonesia (47.07% of entry participles) and Thailand (52.93%). Most Indonesian teachers were female (79.66%) and 26–32 years old (31.07%). Similarly, most Thai teachers were female (82.72%) and 26–32 years old (28.79%), as shown in Table 1.

Table 1. Demographic Information (n = 368)

Variable		Indonesia (*n* = 177)		Thailand (*n* = 191)		Total
		n	*%*	*n*	*%*	
Gender	male	36	52.2	33	47.8	69
	female	141	47.2	158	52.8	229
Age	18–25	14	40.0	21	60.0	35
	26–32	55	50.0	55	50.0	110
	33–39	39	47.0	44	53.0	83
	40–47	20	42.6	27	57.4	47
	> 47	49	52.7	44	47.3	93

Measures

BPS, which looked at the negative bio-psycho impact of individual experience with healthcare surveillance symptoms in the past six months, was measured by a 12-item designed questionnaire. This measure aimed to assess the likelihood of future mental health issues from the present bio-psycho symptoms as the result of occupational exhaustion, depersonalization, and low personal accomplishment. Items were assessed on a seven-point Likert scale, with 1 equaling every day and 7 equaling never. Sample items were 'difficult falling asleep', 'tense muscles, sore neck and back', and 'eating too much or too little'. This measure was validated by content validation through expert agreement. The original scale was written in Indonesian, which was translated to Thai by using a back-translation method. The study declared Cronbach's alphas at α_{Indo} = .84 and α_{Thai} = .87.

PWS, which identified the characteristics of work-related mental hazards, was measured by the 39-item work-related stress questionnaire. It was created with the goal of improved monitoring and regulating the health and safety of employees. This scale was selected because the context of policy implementation was asked in several items. Items were scored on a five-point Likert scale, with 1 equalling never and 5 equalling always. Sample items were 'I have a clear idea about what is expected of me at work' and 'My colleagues are willing to listen to my work-related problems.' The CFA good-fit model validation presents $\chi2/df$ = 1.68, *p* = .06, CFI = .70, TLI = .74, RMSEA = .06. A back-translation method was used to translate the scale into Indonesian and Thai. Cronbach's alpha was determined to have high reliability, that is, αIndo = .81 and αThai = .81 (Unite the Union, 2012)

TFT was assessed by a 16-item questionnaire, which analyzed attitudes toward TFT. This scale was designed to assess idealistic influence, inspiring motivation, individualized concern and intellectual stimulation. The item was assessed on a four-point Likert scale, with 1 indicating strong disagreement and 4 suggesting strong agreement. Sample items were 'I am certain I can master the skills taught in the class this year', 'I have a say regarding what skills I want to practice' and 'I can interact with students in the meaningful action very well'. The CFA good-fit model validation presents $\chi2 /df$ = 11.23, *p* < .01, CFI = .94, TLI =.92, RMSEA = .06. The original scale was written in English and then back-translated into Indonesian and Thai. Cronbach's alpha was determined to have high and medium reliabilities, that is, αIndo = .92 and αThai = .78 (Beauchamp et al., 2010).

Data Analysis

Univariate, bivariate, and multivariate analyses were adopted using IBM–SPSS statistical software (MAC OS version 23). All measured reliability coefficients were acceptable with values above .70. The skewness and kurtosis ranged with the normality criteria. In addition, Kolmogorov–Smirnov normality test was performed to confirm normal data distribution. To explore the differences in nation and gender as determinants of the frequencies of BPS, PWS and TFT, an independent sample t-test was conducted. ANOVA was performed to identify differences in age group as a determinant of the frequencies of BPS, PWS, and TFT. These three statistical analyses were employed because they could delineate means by using a Likert-type scale, implying that parametric statistics could be applied with Likert data. The scale scoring system in BPS and PWS was adopted by the global perceived effect from the chronic symptom studies of Van Boxem et al. (2015), for a seven-point Likert scale and Terano (2015), for a five-point Likert scale.

In addition, multiple regression analysis was employed to determine the most appropriate model for predicting TFT based on gender, age, BPS, and PWS. The variance inflation factor (VIF) was used to confirm that multicollinearity did not affect the result from the studied variables (.92 < VIF < 1.01). Cohen's d and f2 were provided and interpreted in accordance with Cohen's (1988, as cited in Selya et al., 2012). Thus, the model met the basic assumptions required to perform multiple regression analysis. The statistical significance level was set at *p* < .05.

Findings

The Preliminary Study

The BPS mean scores for the entire samples among Indonesian and Thai were 5.33, standard deviation (*SD*) = 1.05; 5.94, *SD* = 0.78 and 4.77, *SD* = 0.96. Among Indonesian teachers, the related symptoms with higher mean scores than the average were sleep problem, restlessness, itching, headache, bouts of anger, diarrhea, cramp, gas, constipation, and anxiety. Among Thai teachers, the symptoms that reported higher mean scores than the average were fatigue, anxiety, worry, difficulty falling asleep, bouts of anger, boredom, depressive feeling, and eating too much or too little. According to the scoring system, although Thai teachers reported the floor of the worse level, the overall scores were in the range of a little worse. The PWS mean scores for the entire samples among Indonesian and Thai were 3.33, *SD* = 0.29; 3.33, *SD* = 0.32 and 3.33, *SD* = 0.27. These scores were interpreted as moderate work stress levels. The TFT mean scores for the entire samples among Indonesian and Thai were 3.28, *SD* = 0.30; 3.11, *SD* = 0.26 and 3.43, *SD* = 0.25.

Individual Differences in Teachers' Gender, Age Range, and Nation

Table 2 presents the significant differences in the BPS, PWS, and TFT frequencies according to country comparison. Significant differences were found in BPS and TFT. Indonesian special teachers in inclusive schools had an overall mean of BPS higher than Thai teachers, with condition t = 12.81, $p < .01$, d = 1.33. Thai teachers declared TFT-related attitudes higher than Indonesian teachers, with condition t = -11.99, $p < .01$, d = 1.25. The remaining measure did not show significant differences concerning the nation. A significant difference was also not found concerning gender in the three studied variables in Indonesian and Thai teachers (see Table 3). Thus, the mean scores of BPS, PWS, and TFT between males and females were the same.

A significant difference was observed in TFT according to the age difference among Thai teachers, with condition $F(4, 186)$ = 2.72, $p = .03$, $d = .23$. The Tukey HSD post hoc test revealed that teachers aged between 44 and 47 reported significantly higher means of TFT than teachers aged between 26 and 32; the condition mean difference is .17 and $p = .02$ and those aged between 18 and 25 had a condition mean difference of .19, $p = .05$. The remaining age group did not show significant differences. Table 4 portrays no significant difference in the three studied variables among Indonesian teachers.

Table 2. Results by Nation Comparison

Country/ Variable	Entire Sample (*n* = 368)		Indonesia (*n* = 177)		Thailand (*n* = 191)		*t*	*p*
	M	*SD*	*M*	*SD*	*M*	*SD*		
BPS	5.33	1.05	5.94	0.78	4.77	0.96	12.81	< .01
PWS	3.33	0.29	3.33	0.32	3.33	0.27	0.16	.87
TFT	3.28	0.30	3.11	0.26	3.43	0.25	−11.99	< .01

BPS: Frequency of Bio-psycho Burnout Symptoms; PWS: Perceived Work Stress; TFT: Transformative Teaching

Table 3. Results by Gender Comparison

Variable/Gender	Male		Female		*t*	*p*
	M	*SD*	*M*	*SD*		
Indonesian Sample						
BPS	6.07	0.74	5.91	0.78	1.13	.25
PWS	3.34	0.44	3.33	0.28	0.16	.86
TFT	3.11	0.27	3.11	0.26	0.08	.93
Thai Sample						
BPS	4.68	0.94	4.79	0.97	−.60	.54
PWS	3.36	0.26	3.32	0.27	0.79	.43
TFT	3.47	0.25	3.43	0.25	0.88	.37

BPS: Frequency of Bio-psycho Burnout Symptoms; PWS: Perceived Work Stress; TFT: Transformative Teaching

Table 4. Results by Age Comparison

Variable/Age	18–25		26–32		33–39		40–47		> 47		*F*	*p*
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Indonesian Sample												
BPS	5.35	0.73	6.04	0.63	5.96	0.70	6.02	0.90	5.95	0.89	2.39	.06
PWS	3.27	0.28	3.35	0.33	3.32	0.26	3.36	0.45	3.33	0.31	0.24	.91
TFT	2.98	0.17	3.08	0.26	3.16	0.28	3.07	0.21	3.16	0.28	1.91	.11

Table 4. Continued

Variable/Age	18–25		26–32		33–39		40–47		> 47		F	p
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Thai Sample												
BPS	4.90	0.75	4.82	0.95	4.47	1.0	4.90	0.89	4.86	1.0	1.38	.24
PWS	3.35	0.25	3.29	0.24	3.30	0.29	3.37	0.23	3.36	0.32	0.81	.52
TFT	3.37	0.25	3.39	0.28	3.42	0.19	3.57	0.24	3.44	0.25	2.72	.03

BPS: Frequency of Bio-psycho Burnout Symptoms; PWS: Perceived Work Stress; TFT: Transformative Teaching

Prediction Model of Transformational Teaching

Table 5 shows the regression model of teachers' gender, age, burnout symptom, and work stress toward TFT. Significantly positive correlations in age and negative correlations in PWS were found among Indonesian special education teachers in inclusive schools. Significantly positive correlations in age and negative correlations in BPS were observed among Thai teachers. Multiple regression analysis indicated that PWS was the strongest negative predictor of TFT among Indonesian teachers, presenting Cohen's *f*-square effect size at .09, whereas BPS was the strongest negative predictor of TFT among Thai teachers, presenting Cohen's *f*-square effect size at .06, with condition $R^2 = .08$, $F(4, 172) = 4.18$, $p < .01$ and $R^2 = .06$, $F(4, 186) = 3.18$, $p < .05$, respectively.

Table 5. Multiple Regression Analysis in Relation to TFT

Variable	Pearson Correlation		Standard Partial Regression Coefficient		
	r	*p*	*β*	*t*	*p*
Indonesian Sample					
Gender	−.06	.46	.01	.22	.81
Age	.14	.02	.14	2.01	.04
BPS	−.02	.34	−.01	.11	.91
PWS	−.25	< .001	−.25	3.52	< .001
R²			.08		< .01
Adjusted R²			.06		
Thai Sample					
Gender	−.06	.18	−.06	−.97	.33
Age	.14	.02	.15	2.10	.03
BPS	−.17	< .001	−.17	2.48	.01
PWS	−.06	.16	−.08	−1.17	.24
R²			.06		.01
Adjusted R²			.04		

BPS: Frequency of Bio-psycho Burnout Symptoms; PWS: Perceived Work Stress; TFT: Transformative Teaching

Discussion

This study aimed to determine differences in the frequencies of BPS, PWS, and TFT according to teachers' nation, gender, and age group. This research also aimed to explore factors predicting TFT among special education teachers in inclusive schools in Indonesia and Thailand. The results indicated that Indonesian teachers held significantly higher mean scores on BPS but scored lower TFT than Thai teachers. According to age comparison, Thai teachers in the 44–47 age group reported significantly higher TFT than those in the 26–32 age group. Additionally, in the regression analysis, the study found the presence of positive age and negative PWS as independent predictors of TFT among Indonesian teachers, and positive age and negative BPS as independent predictors of TFT among Thai teachers. Although these effect sizes seemed small, those predictive values remained remarkably significant.

According to Mulyani et al. (2021), the ratio of Asian special education teachers with burnout symptoms was higher than those in other world regions. The univariate results suggested that the overall BPS and PWS scores were critically high. These findings were consistent with previous studies that explored unhealthy psychological stress in various special teacher populations in Asia, including teachers from India (Gincydyas & Anandarajan, 2018), Singapore (Rajoo, 2020), Hong Kong (Chao et al., 2017), United Arab Emirates (Bataineh & Alsagheer, 2012), and China (Fu et al., 2021). These works might support the claim statement of Mulyani et al. that the improvement of working conditions for teachers working with special needs children should be a concern because these teachers took extra efforts and emotions into their job higher than typical teachers.

Thailand had just issued an inclusive education policy. The empirical findings on inclusive teaching methods and Thai special education teachers' psychological reports were limited to local unpublished classroom reports or case studies. In

Indonesia, issues related to special teachers' high burnout and low competence in applying inclusive teaching methods had been noted in various published studies among Indonesian inclusive educators. This study resonated with prior research regarding the implementation of the inclusive education policy as an educational service for children with special educational needs and disabilities. This policy was under Indonesia's Constitution and National Education Law Number 20 of 2003 which highly challenged teachers' understanding of the characteristics of children with special needs and the implementation of teaching methods for all students in inclusive education. Kantavong et al. (2017) reported that special education teachers in Indonesia experienced exhaustion higher than Thai teachers because Indonesian teachers received neither support nor assistance in inclusive classrooms. Indonesian special education teachers encountered barriers in teaching, such as a lack of updated knowledge on disabilities and individual differences and resources to develop their competency, a huge load of students in a class, and difficulties in curriculum modifications, and academic assessments (Kurniawati, 2021; Oo & Boonroungrut, 2017; Siregar & Simorangkir, 2021). In addition, some areas were obstacle-ridden with few special education teachers. Training general teachers was applied to being inclusive teachers, however, these trained teachers reported difficulties in educating children with disabilities (Hata et al., 2021).

Considerably, Indonesian participants in the present study mostly worked in region-centered provinces, outside the capital area, especially in the east part of the country, compared with Thai participants who worked in or near the capital. This demographic concern might have emerged because of the different national policies. 12 provinces and 48 districts/cities in Indonesia have been targeted as inclusive education implementers since 2015. The main inclusive schools in Thailand were public schools mostly located in Bangkok and nearby cities. As noted by the Office of the Education Council of Thailand, the unpractical policy and the under supervision of the central authorities were the major problems affecting the success of inclusive education implementation in other regions in Thailand. Disparities existed in special education teacher development and support between teachers from rural and urban regions.

On the contrary, a report showed that experienced teachers who had higher classroom management skills for working with students with special needs favored inclusion (Kurniawati et al., 2012). Possibly, providing intervention to enhance substantial knowledge and skill of students with special needs might be a solution, which released burnout with negative BPS. Undoubtedly, previous training courses declared significant impacts on teachers' self-efficacy and emotional support for teaching in inclusive education (Chao et al., 2017; Hamdan et al., 2016; Warman, 2021). By contrast, Western inclusive teachers who completed training or university degrees in special education seldom reported emotional confusion in previous studies (Cameron et al., 2018).

TFT referred to teachers' and students' dynamic relationship creation to maximize students' potential and personal growth by intellectual coaches, providing modeling and proficiency experiences, challenging students, and encouraging them (Slavich & Zimbardo, 2012). The link between special education background and TFT for students had already been established. Xie et al. (2021) determined that teachers with good attitudes in inclusive education could be a key success in TFT. However, teachers could face three stages of change moving from confusion to conflict among multiple jobs before being professionalized. Similarly, Gong et al. (2013) found that transformational educational leadership was negatively related to teachers' emotional exhaustion and depersonalization. Therefore, role and work confusion, cooperation with teachers who knew little about disabilities, multiple workloads, and overlapped roles could lead to work stress and then affect the quality of their implementation of TFT methods among teachers in both countries. A brand-new profession without preparation including forced positioned teachers by school authorities or not special education background assistant teachers could affect teachers' readiness and willingness to perform transformational teaching in an initial step. In addition, undergraduate courses related to special needs children in teacher education programs had not yet been achieved, especially in Thailand. Therefore, the new graduates without special education backgrounds always reported that they had no skills or knowledge to interact with those children. In the sense of cooperation between general teachers and special education teachers, TFT development hardly occurred as same as the evidence of TFT scores from this study. Importantly, the curriculum development process for teacher education at the university level should support future change following the inclusion movement (Janejitvanich, 2019; Kongprajak, 2020).

The preceding findings through regression analysis seemed to indicate that the prediction of teachers' age and BPS or PWS toward TFT was substantial among the two groups of teachers. The results remained significant in prediction, supporting previous reports that highlighted the potential adverse effects of stress and related symptoms over the role of teachers during a teaching method implementation (Cancio et al., 2018; Hester et al., 2020). However, when age was added to the model, the prediction became significantly positive in both groups of teachers. That is, age might be related to the experience that enhanced a sense of competence. Kumi-Yeboah and James (2012) agreed that transformative teaching experiences helped teachers become responsible and exercise discretionary judgment. Teachers agreed that the capacity to reflect on previous experiences inspires them to work with colleagues collaboratively and be supportive. Considerably, providing teaching services identified in Indonesian and Thai inclusive classrooms seemed to differ depending on policies launched and types of disabilities, for instance, Thailand included students with learning disabilities whereas Indonesia included students who were physically disabled (Kantavong et al., 2017; Kurniati & Widyastono, 2021). Overall, the present study confirmed the level of work stress and its burnout symptoms among teachers in inclusive schools in Indonesia and Thailand. Focusing on intervention programs that aim to boost and support teachers' needs might be the target for their psychological health and teaching method towards student outcomes.

Conclusion

This study provides initial evidence concerning work stress and burnout symptoms to all special education teachers in inclusive schools. This can be a disadvantage to transformative teaching in advance. Thus, strengthening support might aid teachers to be active and teach well, contributing to overall children with special needs. Despite the limitations of the study, its practical implications lead to the awareness of improving teachers' psychological health, including bio-psycho burnout symptoms and work stress in inclusive schools. Policy stakeholders can boost the understanding of clear roles and development purposes. Preparation programs including training on individual differences and disabilities can affect teaching quality in inclusive education.

Recommendations

By exploring the impact of the special education teachers' demographic factors, BPS, and PWS on their role in transformative teaching, the study sparks further research in the field of psychological health among special education teachers to improve more comprehensive teaching methods in inclusive education in Indonesia and Thailand where the inclusive education policies have been launched in the recent years. Based on the present results, it is recommended that special teachers working in inclusive schools should learn to release working stress and emotional management. Research on improving teachers' abilities to manage their emotion as intervention might be important. This skill might prevent teachers from possible future illnesses physically and mentally that might impact their teaching.

Limitations

Alongside the contribution of this study to the literature on work stress and TFT among special education teachers in inclusive education, several caveats must be considered when interpreting the results as the following limitations. Regarding two medium size samples, special education teachers recruited in this study were from different city natures: Indonesian teachers mostly from the region-centered provinces and Thai teachers mostly from the capital and suburbs. According to the small effect size from the regression model, implementation of the result should be a concern for this point. The research was conducted during the COVID-19 pandemic (Boonroungrut, Saroinsong & Thamdee, 2022), therefore, different outcomes might occur in other normal times. Moreover, the use of a single latent measure to assess the studied variables might demote the importance of the subscale. In addition, CFI and TLI indexes of PWS indicated only acceptable, not good fit for CFA validation. The demographic variable on teachers' working years is removed because the answers are counted in different systems between schools, positions, and countries. Furthermore, due to the limitation of data received and the design, no controlled variable was included in the regression analysis. The future research should concern several potential third variables such as school area, teacher's educational background, working experience, and training hours etc.

Ethics Statements

The studies involving human participants were reviewed and approved by the Research Ethics Board of Universitas Negeri Surabaya. The participants provided their written informed consent to participate in this study

Conflict of Interest

No potential conflict of interest was declared by authors.

Funding

Authorship Contribution Statement

Sujarwanto: Conceptualization, design, analysis. Saroinsong: Conceptualization, design, analysis. Boonroungrut: Conceptualization, design, analysis, writing. Purwoko: Conceptualization, design, analysis.

References

Agaliotis, I., & Kalyva, E. (2011). A survey of Greek general and special education teachers' perceptions regarding the role of the special needs coordinator: Implications for educational policy on inclusion and teacher education. *Teaching and Teacher Education*, *27*(3), 543-551. https://doi.org/10.1016/j.tate.2010.10.008

Amor, A. M., Hagiwara, M., Shogren, K. A., Thompson, J. R., Verdugo, M. Á., Burke, K. M., & Aguayo, V. (2019). International perspectives and trends in research on inclusive education: A systematic review. *International Journal of Inclusive Education*, *23*(12), 1277-1295. https://doi.org/10.1080/13603116.2018.1445304

Bataineh, O., & Alsagheer, A. (2012). An investigation of social support and burnout among special education teachers in the United Arab Emirates. *International Journal of Special Education*, *27*(2), 5-13.

Beauchamp, M. R., Barling, J., Li, Z., Morton, K. L., Keith, S. E., & Zumbo, B. D. (2010). Development and psychometric properties of the transformational teaching questionnaire. *Journal of Health Psychology*, *15*(8), 1123-1134. https://doi.org/10.1177/1359105310364175

Billingsley, B. S. (2004). Special education teacher retention and attrition: A critical analysis of the research literature. *The Journal of Special Education*, *38*(1), 39-55. https://doi.org/10.1177/00224669040380010401

Boonroungrut, C., Saroinsong, W. P., Eiamnate, N., & Sujawanto. (2022). Brief report: Visualizing scientific landscape on learning disabilities in Scopus between 2012 and 2021. In I. Y. Maureen, E. Imah, S. Savira, S. Anam, M. Mael & L. Hartanti (Eds.), *Innovation on education and social sciences* (pp. 134-140). Routledge. https://doi.org/10.1201/9781003265061-18

Boonroungrut, C., Saroinsong, W. P., & Thamdee, N. (2022). Research on students in COVID-19 pandemic outbreaks: A bibliometric network analysis. *International Journal of Instruction*, *15*(1), 457-472. https://doi.org/10.29333/iji.2022.15126a

Boyd, B. L. (2009). Using a case study to develop the transformational teaching theory. *International Journal of Leadership in Education*, *7*(3), 50-59. https://doi.org/10.12806/V7/I3/TF1

Cameron, D. L., Tveit, A. D., Jortveit, M., Lindqvist, G., Göransson, K., & Nilholm, C. (2018). A comparative study of special educator preparation in Norway and Sweden. *British Journal of Special Education, 45*(3), 256-276. https://doi.org/10.1111/1467-8578.12231

Cancio, E. J., Larsen, R., Mathur, S. R., Estes, M. B., Johns, B., & Chang, M. (2018). Special education teacher stress: Coping strategies. *Education and Treatment of Children*, *41*(4), 457-481. https://doi.org/10.1353/etc.2018.0025

Caraballo, L., & Soleimany, S. (2019). In the name of (pedagogical) love: A conceptual framework for transformative teaching grounded in critical youth research. *The Urban Review*, *51*, 81-100. https://doi.org/10.1007/s11256-018-0486-5

Chao, C. N. G., Sze, W., Chow, E., Forlin, C., & Ho, F. C. (2017). Improving teachers' self-efficacy in applying teaching and learning strategies and classroom management to students with special education needs in Hong Kong. *Teaching and Teacher Education*, *66*, 360-369. https://doi.org/10.1016/j.tate.2017.05.004

Dobson, G. J., & Douglas, G. (2020). Who would do that role? Understanding why teachers become SENCOs through an ecological systems theory. *Educational Review, 72*(3), 298-318. https://doi.org/10.1080/00131911.2018.1556206

Emanuelsson, I. (2001). Reactive versus proactive support coordinator roles: an international comparison. *European Journal of Special Needs Education, 16*(2), 133-142. https://doi.org/10.1080/08856250110040677

Fitzgerald, J., & Radford, J. (2017). The SENCO role in post-primary schools in Ireland: Victims or agents of change? *European Journal of Special Needs Education*, *32*(3), 452-466. https://doi.org/10.1080/08856257.2017.1295639

Fu, W., Tang, W., Xue, E., Li, J., & Shan, C. (2021). The mediation effect of self-esteem on job-burnout and self-efficacy of special education teachers in Western China. *International Journal of Developmental Disabilities*, *67*(4), 273-282. https://doi.org/10.1080/20473869.2019.1662204

Ghani, M. Z., Ahmad, A. C., & Ibrahim, S. (2014). Stress among special education teachers in Malaysia. *Procedia-Social and Behavioral Sciences*, *114*, 4-13. https://doi.org/10.1016/j.sbspro.2013.12.648

Gincydyas, & Anandarajan, S. (2018). Stress faced by teachers working in school for differently abled. *Asian Journal of Multidimensional Research*, *7*(2), 580-584. https://bit.ly/4ayGl2j

Gong, T., Zimmerli, L., & Hoffer, H. E. (2013). The effects of transformational leadership and the sense of calling on job burnout among special education teachers. *Journal of School Leadership, 23*(6), 969-993. https://doi.org/10.1177/105268461302300603

Göransson, K., Lindqvist, G., Möllås, G., Almqvist, L., & Nilholm, C. (2017). Ideas about occupational roles and inclusive practices among special needs educators and support teachers in Sweden. *Educational Review, 69*(4), 490-505. https://doi.org/10.1080/00131911.2016.1237477

Hamdan, A. R., Anuar, M. K., & Khan, A. (2016). Implementation of co-teaching approach in an inclusive classroom: Overview of the challenges, readiness, and role of special education teacher. *Asia Pacific Education Review, 17*, 289-298. https://doi.org/10.1007/s12564-016-9419-8

Hata, A., Yuwono, J., Purwana, R., & Nomura, S. (2021). *Embracing diversity and inclusion in Indonesian schools: Challenges and policy options for the future of inclusive education.* World Bank. https://doi.org/10.1596/36533

Hehir, T., Grindal, T., Freeman, B., Lamoreau, R., Borquaye, Y., & Burke, S. (2016). *A summary of the evidence on inclusive education*. ABT Associates.

Hester, O. R., Bridges, S. A., & Rollins, L. H. (2020). 'Overworked and underappreciated': special education teachers describe stress and attrition. *Teacher Development, 24*(3), 348-365. https://doi.org/10.1080/13664530.2020.1767189

Jagers, R. J., Rivas-Drake, D., & Williams, B. (2019). Transformative social and emotional learning (SEL): Toward SEL in service of educational equity and excellence. *Educational Psychologist*, *54*(3), 162-184. https://doi.org/10.1080/00461520.2019.1623032

Janejitvanich, J. (2019). Kār pramein khwām t̂xngkār cảpĕn k̄hxng khrū d̂ān khwām rū̂ læa kār s̄nạbs̄nun thāng s̄ạngkhm nı kār cạdkār s̄ụks̄ʹā s̄ảh̄rạb dĕk thī̀ mī khwām t̂xngkār phis̄eṣ' nı rongreīyn c̄hephāa khwām phikār læa rongreīyn reīyn rwm nı k̄het p̣hākh klāng s̄ạngkạd s̄ảnạkngān khṇa krrmkār kār s̄ụks̄'ā k̄hận p̣hụ̄̂n ṭ̄hān [A need assessment of teachers' knowledge and social support in education for children with special needs in special schools and inclusive schools in central region, Office of the Basic Education Commission]. *Journal of Education Silpakorn University*, *17*(2), 104-114. https://bit.ly/3VTgNIR

Kantavong, P., Sujarwanto, Rerkjaree, S., & Budiyanto (2017). A comparative study of teacher's opinions relating to inclusive classrooms in Indonesia and Thailand. *Kasetsart Journal of Social Sciences*, *38*(3), 291-296. https://doi.org/10.1016/j.kjss.2016.05.005

Kongprajak, N. (2020). paa wá pûu nam taang wí chaa gaan ǩɔng pûup rí hǎa rót tǎan sùk sǎa tîi sòng pǒn dtɔɔ gaan bpen ong gɔɔn hèng gaan rian rúu kɔ̌ ngót tǎan sùk sǎa sǎng gàt sǎm nák ngaan kèet púun tîi gaan sùk sàap rá tǒm sùk sǎan krớp tǒm kèet [Instructional leadership of the school administrators with the learning organization in the Nakorn Pathom primary education service area office 2]. *Journal of Suvarnabhumi Institute of Technology*, *6*(1), 159-170.

Kumi-Yeboah, A., & James, W. (2012). Transformational teaching experience of a novice teacher: A narrative of an award-winning teacher. *Adult Learning*, *23*(4), 170-177. https://doi.org/10.1177/1045159512457354

Kurniati, D., & Widyastono, H. (2021). Special education systems in five countries: Indonesia, Norway, Malaysia, Netherlands, Thailand. *Journal of ICSAR*, *4*(1), 35-39. https://bit.ly/4d0QgPA

Kurniawati, F. (2021). Exploring teachers' inclusive education strategies in rural Indonesian primary schools. *Educational Research*, *63*(2), 198-211. https://doi.org/10.1080/00131881.2021.1915698

Kurniawati, F., Minnaert, A., Mangunsong, F., & Ahmed, W. (2012). Empirical study on primary school teachers' attitudes towards inclusive education in Jakarta, Indonesia. *Procedia-Social and Behavioral Sciences*, *69*, 1430-1436. https://doi.org/10.1016/j.sbspro.2012.12.082

Kwon, C.-K., Han, S.-H., & Nicolaides, A. (2020). The impact of psychological safety on transformative learning in the workplace: A quantitative study. *Journal of Workplace Learning*, *32*(7), 533-547. https://doi.org/10.1108/JWL-04-2020-0057

Magnússon, G., & Göransson, K. (2019). Perimeters of, and challenges to, the jurisdiction of Swedish special educators: An exploration of free text responses. *European Journal of Special Needs Education*, *34*(3), 257-271. https://doi.org/10.1080/08856257.2018.1458473

Messiou, K. (2017). Research in the field of inclusive education: Time for a rethink? *International Journal of Inclusive Education*, *21*(2), 146-159. https://doi.org/10.1080/13603116.2016.1223184

Mulyadi, A. W. E. (2017). Policy of inclusive education for all in Indonesia. *Policy and Governance Review, 1*(3), 201-212. https://doi.org/10.30589/pgr.v1i3.57

Mulyani, S., Salameh, A. A., Komariah, A., Timoshin, A., Hashim, N. A. A. N., Fauziah, R. S. P., Mulyaningsih, M., Ahmad, I., & Ul din, S. M. (2021). Emotional regulation as a remedy for teacher burnout in special schools: evaluating school climate, teacher's work-life balance and children behavior. *Frontiers in Psychology*, *12*, Article 655850. https://doi.org/10.3389/fpsyg.2021.655850

Murdoch, D., English, A. R., Hintz, A., & Tyson, K. (2020). Feeling heard: Inclusive education, transformative learning, and productive struggle. *Educational Theory*, *70*(5), 653-679. https://doi.org/10.1111/edth.12449

Nursalim, M., Saroinsong, W. P., Boonroungrut, C., Wagino, & da Costa, A. (2023). Prediction of students' COVID-19 resilience: An artificial neural network based on gender, age, stress intensity, and mindfulness variables. *Psychology in the Schools, 60*(9), 3253-3265. https://doi.org/10.1002/pits.22920

Oo, T. T., & Boonroungrut, C. (2017). A study on the emotional intelligence of student teachers: A case study at Loikaw Education College, Myanmar. *Journal of Psychology Kasem Bundit University, 7*(1), 72-82.

Park, E.-Y., & Shin, M. (2020). A meta-analysis of special education teachers' burnout. *SAGE Open*, *10*(2), 1-18. https://doi.org/10.1177/2158244020918297

Rajoo, H. H. (2020). The importance of creative and positive workplace culture: A case study on how creative initiatives foster better relationships, resilience, and mindfulness at work for special education teachers. *Asia Pacific Journal of Developmental Differences*, *7*(1), 127-152. https://bit.ly/3JnaRQS

Sanrattana, U. (2010). An implementation of inclusive education. *International Journal of Education, 33*(2), 80-85.

Sari, H. (2004). An analysis of burnout and job satisfaction among Turkish special school headteachers and teachers, and the factors affecting their burnout and job satisfaction. *Educational Studies*, *30*(3), 291-306. https://doi.org/10.1080/0305569042000224233

Sarıçam, H., & Sakız, H. (2014). Burnout and teacher self-efficacy among teachers working in special education institutions in Turkey. *Educational Studies, 40*(4), 423-437. https://doi.org/10.1080/03055698.2014.930340

Schwab, S. (2020). Inclusive and special education in Europe*. In N. George (Eds.), *Oxford research encyclopedia of education.* Oxford University Press. https://doi.org/10.1093/acrefore/9780190264093.013.1230

Selya, A. S., Rose, J. S., Dierker, L. C., Hedeker, D., & Mermelstein, R. J. (2012). A practical guide to calculating Cohen's f2, a measure of local effect size, from proc mixed. *Frontiers in Psychology*, *3*, Article 00111. https://doi.org/10.3389/fpsyg.2012.00111

Siregar, E., & Simorangkir, M. R. R. (2021). Understanding of inclusion school teachers in children with special needs in the 4.0 education era. *International Journal of Recent Innovations in Academic Research*, *5*(6), 33-37.

Slavich, G. M., & Zimbardo, P. G. (2012). Transformational teaching: Theoretical underpinnings, basic principles, and core methods. *Educational Psychology Review*, *24*, 569-608. https://doi.org/10.1007/s10648-012-9199-6

Squillaci, M., & Hofmann, V. (2021). Working in inclusive or non-inclusive contexts: relations between collaborative variables and special education teachers' burnout. *Frontiers in Education*, *6*, Article 640227. https://doi.org/10.3389/feduc.2021.640227

Ssegawa, J. K., & Kasule, D. (2015). Prayer: a transformative teaching and learning technique in project management. *International Journal of Project Management*, *8*(1), 177-197. https://doi.org/10.1108/IJMPB-06-2014-0050

Sujarwanto, Saroinsong, W. P., Boonroungrut, C., Adhe, K. R., Purwoko, B., & Riyanto, Y. (2022). Special education teachers' perceived stress towards transformational teaching. *International Journal of Instruction, 15*(4), 971-986. https://doi.org/10.29333/iji.2022.15452a

Tahir, K. (2018). Transformational teaching: Pakistani students' perspectives in the English classroom. *International Journal of Teaching and Learning in Higher Education*, *30*(1), 61-69.

Takala, M., Pirttimaa, R., & Törmänen, M. (2009). Inclusive special education: the role of special education teachers in Finland. *British Journal of Special Education*, *36*(3), 162-173. https://doi.org/10.1111/j.1467-8578.2009.00432.x

Terano, H. J. R. (2015). Development and acceptability of the simplified text with workbook in differential equations as an instructional material for engineering. *Journal of Multidisciplinary Studies*, *4*(2), 106-126. https://bit.ly/4cZVsTZ

Unite the Union. (2012). *Unite guide to work-related stress*. https://bit.ly/3U8AZUB

Van Boxem, K., de Meij, N., Kessels, A., Van Kleef, M., & Van Zundert, J. (2015). Pulsed radiofrequency for chronic intractable lumbosacral radicular pain: A six-month cohort study. *Pain Medicine, 16*(6), 1155-1162. https://doi.org/10.1111/pme.12670

Vibulpatanavong, K. (2018). Inclusive education in Thailand. In Ifdil, Y. Yaswinda, Z. Ardi & M. F. Amsal (Eds.), *Proceedings of the International Conference of Early Childhood Education (ICECE 2017)* (pp. 67-70). Atlantis Press. https://doi.org/10.2991/icece-17.2018.16

Warman, W. (2021). Establishing the governmental policy to promote engagement within the inclusive education system in Indonesia. *Journal of Social Studies Education Research*, *12*(1), 124-148. https://www.learntechlib.org/p/219414/

Wiest, D. J., & Kreil, D. A. (1995). Transformational obstacles in special education*. Journal of Learning Disabilities*, *28*(7), 399-407. https://doi.org/10.1177/002221949502800703

Wong, T. P. (2020). *Inclusive education in ASEAN countries: How to support children with disabilities in schools.* University of Notthingham. https://bit.ly/4aB2AVd

Xhelilaj, L. K., Petani, R., & Ntalla, M. (2021). Relationship between teacher's burnout, occupational stress, coping, gender and age. *Journal of Educational and Social Research, 11*(4), 275-275. https://doi.org/10.36941/jesr-2021-0094

Xie, Z., Deng, M., & Zhu, Z. (2021). From regular education teachers to special educators: the role transformation of resource room teachers in Chinese inclusive education schools. *International Journal of Inclusive Education.* Advance online publication. https://doi.org/10.1080/13603116.2021.1968516

Zabel, R. H., & Kay Zabel, M. (2001). Revisiting burnout among special education teachers: Do age, experience, and preparation still matter? *Teacher Education and Special Education*, *24*(2), 128-139. https://doi.org/10.1177/088840640102400207