



A Test of Dublin Anti-bullying Self-Efficacy Scale for Teachers (DABSE-T)

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Abstract

Emerging evidence suggests that anti-bullying programmes should have a particular focus on teacher self-efficacy for peer bullying prevention and intervention at schools. To address this suggestion, a theoretical framework and a measurement scale are needed to evaluate teacher anti-bullying self-efficacy and determine its role in the effectiveness of these anti-bullying programmes. The present research aims to adapt the Anti-Bullying Self-Efficacy Theory and test the psychometric properties of the Dublin Anti-Bullying Self-Efficacy Scale (DABSE) for teachers. A convenience sample of 221 teachers (38.9% from primary and 61.1% from post-primary schools) responded to the DABSE-T following participation in FUSE, a school anti-bullying programme in Ireland. The factorial structure of the scale was assessed using Exploratory Factor Analysis (EFA), Principal Axis Factoring with Promax Oblique rotation. Construct validity (convergent and divergent validity) was assessed using the criteria of Average Variance Extracted ($AVE > .50$) and the heterotrait-monotrait ratio of correlations (HTMT). Composite reliability was estimated as an indicator of internal consistency. The DABSE-T demonstrated satisfactory psychometric properties, suggesting that it is a valid and reliable measure of teacher self-efficacy beliefs, which encompass recognition of bullying behaviour, comprehension of the need for immediate intervention, acceptance of responsibility, knowledge of appropriate actions, and intervention implementation. The scale can be used to evaluate the effectiveness of anti-bullying interventions and identify teachers who may require additional support in addressing bullying incidents.

Keywords Teacher self-efficacy · Bullying prevention · Anti-bullying programme · Social-ecological approach, Validity, Reliability

Peer bullying refers to aggressive behaviour that is characterised by an imbalance of power, repetitiveness, and an intention to harm (Olweus, 1997), or dominate the target (Kuldass et al., 2021; Salmivalli et al., 1996). However, it has been recently questioned whether peer-bullying has to involve intentionality and repetitiveness, particularly when it occurs within a social context or stems from social, school, or institutional policies, norms, or systems (UNESCO, 2020). Beyond this conceptual debate, peer-bullying/victimization remains a persistent source of concern for students, teachers, and parents (Kuldass et al.,

2023; Pichel et al., 2021; Salmivalli et al., 2021). School children who have experienced peer-bullying may be at risk of developing mental health issues and/or psychosomatic disorders (Gini & Pozzoli, 2009). The underlying causes or reasons of bullying incidents at schools are multifaceted, encompassing various student, teacher, and school characteristics (Kuldass et al., 2021). A critical review of evidence has shown that school characteristics, such as school climate, anti-bullying policy, classroom ethnic composition, and the role of teachers, are among the primary determinants of the prevalence of peer bullying at school (Kuldass et al., 2021). To prevent or reduce bullying incidents at schools, a common approach involves focusing on raising awareness, implementing anti-bullying policies, and fostering a positive school climate (Foody et al., 2018; O'Brien, 2021). The effectiveness of anti-bullying policies and programmes is therefore generally evaluated in terms of the achievement of these aims in school contexts around the world, as in Ireland (Foody et al., 2018).

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Anti-bullying Policy in Ireland

Despite the recommendations from a government action plan group (Department of Education and Skills [DES], 2013) on professional development, a substantial body of research has indicated that teachers and principals in Ireland remain ill-equipped to effectively address bullying, citing inadequate professional development as a crucial factor (Corcoran & McGuckin, 2014; Foody et al., 2017, 2018). Alarmed by these research findings and the prevalence of bullying in schools across Ireland, a steering committee was formed to review the previous Action Plan on Bullying in Ireland, published in 2013. This committee was tasked with developing a new action plan that addresses emerging concerns and identifies strategies to effectively prevent and address bullying in schools.

A recommendation to prioritise professional development for all school staff was included in a *Parliamentary Joint Committee Report on School Bullying and the Impact on Mental Health* (Houses of the Oireachtas, 2021). This recommendation was later echoed in *Cineáltas* (“kindness”): *Action Plan on Bullying* (DoE, 2022). The action plan emphasized that professional development is crucial not only for teachers but for all school staff members. Furthermore, central to the new Action Plan (Department of Education, 2022), Ireland joins the move away from a “whole-school” approach to a “whole-education” approach to tackling school bullying. This recognises that addressing school bullying requires a comprehensive effort involving all stakeholders in education, not just individual schools (O’Higgins Norman, 2022; UNESCO, 2020). To increase reporting, the majority of anti-bullying programmes in Ireland focus on implementing the appropriate anti-bullying policies and promoting a positive school climate (Foody et al., 2018).

Anti-bullying Self-Efficacy

Mounting evidence further suggests that the effectiveness of school anti-bullying programmes also necessitates the enhancement and measurement of anti-bullying self-efficacy beliefs among school students (Kuldas et al., 2023; Sargioti et al., 2022) and teachers (Mazzone et al., 2021). Anti-bullying self-efficacy beliefs refer to the confidence individuals have in their ability to recognise bullying behaviours, comprehend the emergency of intervening, take responsibility for intervening, know the appropriate actions to take, and intervene (Kuldas et al., 2023; Sargioti et al., 2022). These anti-bullying self-efficacy beliefs are central to the prevention and intervention of bullying behaviours at schools. Therefore, school anti-bullying programmes

should have a particular focus on promoting anti-bullying self-efficacy beliefs of school students (Sargioti et al., 2022) and teachers (Mazzone et al., 2021).

However, the extent to which the recommendation to promote teacher anti-bullying self-efficacy beliefs has been achieved is not clear. In other words, the extent to which teachers contribute to the effectiveness of school anti-bullying programmes remains unclear. This lack of clarity is likely due to the absence of a theoretical framework and a measurement scale to evaluate the effectiveness of anti-bullying programs in promoting teacher anti-bullying self-efficacy in peer-bullying prevention or intervention at school. The effectiveness of school anti-bullying programmes is usually evaluated through students’ self-reports of bullying and victimisation incidents (O’Moore & Minton, 2005; Kuldas et al., 2023). Teachers’ self-reported efficacy in the intervention or prevention of bullying incidents at school should also be measured in order to accurately evaluate the extent to which teachers contribute to the effectiveness of school anti-bullying programs (Kuldas et al., 2021).

Social-Ecological Anti-bullying Self-Efficacy Theory and DABSE

A social-ecological framework of bullying was first introduced by Swearer and Espelage (2004) and subsequently reviewed by Espelage and Swearer (2010) and Sargioti et al. (2022). Sargioti and colleagues later synthesised the framework with the participant role approach (Salmivalli et al., 1996) and the bystander intervention model (Latané & Darley, 1970). Based on this synthesis, Sargioti et al. (2022) proposed and tested the Social-Ecological Anti-bullying Self-Efficacy theory.

According to the theoretical perspective (Sargioti et al., 2022), anti-bullying self-efficacy is a mixture of individual and social capacity, process, and outcome. In other words, self-efficacy is not a fixed trait but rather a dynamic capacity, process, and outcome of interactions between individuals and their social environments, such as student–teacher, child–parent, or peer-to-peer relationships (Kuldas et al., 2023). This dynamic interplay significantly transforms self-efficacy in bullying prevention and intervention (Kuldas et al., 2023). On the other hand, as a socio-psychological phenomenon, it is shaped by both individual characteristics (e.g. personal beliefs in their own unique abilities) and social factors, including the quality of teacher care, teacher self-efficacy, school climate, and classroom composition (Kuldas & Foody, 2022). The interplay between these individual and social characteristics can either promote or hinder the development of anti-bullying self-efficacy. For instance, students who have experienced peer bullying may develop and demonstrate anti-bullying self-efficacy if they have a caring and supportive teacher (Kuldas & Foody, 2022). Therefore, the

anti-bullying self-efficacy theory extends beyond Bandura's (1997) trait-conception of self-efficacy, which narrowly defines it as an individual's belief in their ability to successfully execute a specific behaviour (Sargioti et al., 2022). The trait-conception fails to account for the significant effect of social-ecological factors on an individual's anti-bullying self-efficacy (Sargioti et al., 2022). By incorporating the dynamic and multifaceted nature of self-efficacy, the anti-bullying self-efficacy theory provides a more comprehensive understanding of both student and teacher roles in bullying prevention and intervention.

Despite a substantial body of literature utilising the participant role and bystander intervention models, research recommending the development and evaluation of both victim and bystander anti-bullying self-efficacy has emerged over the last decades (Andreou et al., 2007; Knauf et al., 2018). Sargioti et al. (2022) tested the anti-bullying self-efficacy model and developed the *Dublin Bystander Anti-Bullying Self-Efficacy* (DABSE) scales, which measure both target and bystander self-efficacy in addressing both online and offline bullying incidents. The model suggests that both target and bystander self-efficacy beliefs are developed through the five non-linear sequential steps: recognition, emergency comprehension, responsibility, knowledge, and intervention. These steps should be considered when designing and evaluating anti-bullying programs.

It should be noted that the anti-bullying self-efficacy theory proposes a probabilistic rather than a deterministic (i.e. nonlinear rather than linear/causal) relationships between the five steps. According to the theory, there is bidirectional/non-linear relationship between the five steps, indicating dynamic rather than causal effects. Therefore, DABSE does not suggest linear sequential five steps. For example, teacher self-efficacy in recognising a bullying incident does not necessarily lead to the comprehension of that bullying situation as an emergency needing immediate intervention.

The Present Study

While bullying prevention programmes can be beneficial overall, their effectiveness is often moderate and diminishes for adolescents compared to children (Salmivalli et al., 2021; Yeager et al., 2015). Despite this observed lack of optimal effectiveness, schools remain the most suitable setting for implementing appropriate anti-bullying policies and programmes (Foody et al., 2018). Recent evidence suggests that school anti-bullying programmes are more likely to achieve their desired effectiveness by promoting and measuring anti-bullying self-efficacy beliefs among both students (Kuldass et al., 2023; Sargioti et al., 2022) and teachers (Kuldass et al., 2021; Mazzone et al., 2021). Therefore, the FUSE programme was designed to promote online safety and build school teachers and students' confidence

in their ability to tackle bullying behaviour. FUSE is made up of a suite of classroom-based workshops on the topics on Bullying, Cyberbullying, and Online Safety following the five steps of the Social-Ecological Approach and Model of Anti-bullying Self-Efficacy (O'Higgins Norman, et al., 2023; Sargioti et al., 2022). Therefore, the content of the workshops aims to lead participants to notice when there is bullying behaviour and recognize the signs someone is targeted, understand that bullying is something that should not be ignored, take personal responsibility to report, and be able to take action by reporting by talking with a trusted adult or using the resources and mechanisms available to deal with the event in a secure and safe manner.

To assess whether anti-bullying self-efficacy theory and DABSE scale are appropriate for enhancing and measuring teacher self-efficacy in preventing or intervening in bullying incidents at schools, a proper instrument needed to be adapted to the teacher population. Therefore, the present study aimed at adapting the anti-bullying self-efficacy theory and testing the psychometric properties of the Dublin Anti-Bullying Bystander's Self-Efficacy Scale (Sargioti et al., 2022) for teachers.

Methods

Procedure

This study was conducted in May 2021 to evaluate the implementation of the FUSE intervention programme, which aims to empower teachers and students to effectively address peer bullying and online safety issues, enhancing their confidence to tackle school bullying and promote online safety awareness. A dedicated website was created for the programme, serving as a central repository for delivering or accessing all relevant teaching resources and educational materials. The website was accessible to registered schools and participating teachers, providing them with a centralized platform to access and utilize the programme's learning materials. Upon registration, school principals, in collaboration with their teaching staff, assigned teachers to deliver the programme to participating students in their respective year groups.

[Blinded for peer review] provided guidance, support, and the programme materials to each teacher during the workshop delivery. The programme sequentially implemented the steps of the social-ecological anti-bullying self-efficacy theory (Sargioti et al., 2022). Following their participation in the FUSE programme, teachers completed the online DABSE-T, which was administered using the Qualtrics software (Qualtrics, 2021). Participating teachers were invited via email to complete the online survey about their self-efficacy beliefs in addressing peer bullying. The emailed survey included clear and concise instructions and consent forms.

The development of the DABSE Scale for Teachers followed the same procedure that the Scale for Students described in Sargioti et al. (2022). Multiple teachers from the same school could participate in the survey as long as they had personally implemented the programme in their classrooms. All participants were informed that they had the option to withdraw from the study at any time, and that the data collected would be anonymous and confidential. The ethics committee of the authors' university granted ethical approval prior to the distribution of the survey and the program implementation.

Participants

A convenience sample of 221 teachers from 119 primary and post-primary schools in Ireland participated in an online survey after completing the FUSE programme in the 2021/2022 academic year. All the public schools across the country were invited (via email) to register for implementation of the FUSE Anti-Bullying and Online Safety programme. Of the total number of primary ($N=3,095$) and post-primary schools ($N=730$), only 119 schools fully implemented the FUSE programme during the period from October 2021 to June 2022 and had at least one teacher filling the online survey. Among the participants, 99.1% of teachers delivered the FUSE programme in a physical classroom, and 0.9% delivered the programme online. The removal of participants with over 50% missing data, outliers, and random missing values resulted in a final sample of 162 teachers. This sample size was considered adequate for EFA because the minimum loading value for each item per factor was greater than 0.60 (Jung et al., 2020).

Instrument

The present study adapted the Dublin Bystander Anti-Bullying Self-Efficacy Scale for Teachers (DABSE-T) from the Dublin Anti-Bullying Self-Efficacy Scales for School Students (DABSE), which were originally developed by Sargioti et al. (2022) and further revised by Kuldass et al. (2023). The DABSE was developed originally comprising 26 items, but after testing the psychometric properties, the final scale consists of 20 items that are rated on a 6-point scale (ranging from 0="not at all" to 5="very"), measuring the five dimensions of victim and bystander anti-bullying self-efficacy beliefs: recognition (4-item), emergency comprehension (4-item), responsibility (4-item), knowledge (4-item), and intervention (4-item) in the context of offline and online bullying incidents (Sargioti et al., 2022). The DABSE scales demonstrated satisfactory psychometric properties as a valid and reliable measure of school student self-efficacy beliefs (see Kuldass et al. (2023) and Sargioti

et al. (2022) for more details). While the original scales were developed for school students to measure their self-efficacy either as target or bystander of offline and online bullying incidents (four separate scales with five dimensions each), the DABSE-T was aimed at measuring teacher self-efficacy in peer bullying prevention or intervention in the classroom environment (i.e. "The FUSE programme has increased my confidence in my ability to ... if any of my students is bullied in the classroom settings (in person and/or digitally)"). Table 1 presents the full list of DABSE-T items.

Data Analysis

IBM SPSS version 28 (IBM Corp. Released, 2021) was used for data storing, screening, and analysis. An Exploratory Factor Analysis (EFA) was conducted to assess the factorial structure of the scale with the 20 items. The factor extraction method was Principal Axis Factoring with Promax Oblique rotation. Convergent and divergent validity were used to test the construct validity, using the Average Variance Extracted ($AVE > 0.50$) and the heterotrait-monotrait ratio of correlations (HTMT) criterion, respectively (Hair et al., 2014; Henseler et al., 2015). Composite reliability ($CR > 0.70$) was estimated as a measure of internal consistency (Hair et al., 2014).

It is significant to note that outliers can significantly impact the accuracy of factor analysis by distorting the sample mean and inflating the inter-factor correlation value (Brown, 2006). Therefore, outliers should be carefully examined and removed prior to conducting EFA if there is a theoretical reason (Field, 2018). To this end, Kuldass et al. (2023) recommended using a specific range of regression factor scores to facilitate the replication of the same number of factors, namely anti-bullying self-efficacy dimensions (see Kuldass et al. (2023) for further details). Regression factor scores are a type of standardized score indicating each participant's position on a latent common factor (DiStefano et al., 2009). Per the recommendation by Kuldass et al. (2023), a regression factor score of ≥ -2.0 (two standard deviations below the mean) was used as a cut-off point to exclude outliers that inflated inter-factor correlations.

Results

Descriptive Results

Of the final sample, 38.9% teachers were from primary, and 61.1% were from post-primary schools. Regarding the prevalence of bullying, 43% of teachers reported not witnessing a bullying incident over the past 2 months, 35.5% witnessed it in their classroom, and 21.5% were not aware of any bullying incidents. No other

Table 1 Results of the exploratory factor analysis and overall mean of the items

Item	Factor loading					Mean (SD)
	1	2	3	4	5	
Recognition						
Realise		.967				4.21 (0.78)
Be aware		.905				4.28 (0.75)
Notice		.895				4.14 (0.80)
Recognise bullying behaviours		.741				4.22 (0.82)
Emergency						
See the need to tell someone		.954				4.50 (0.66)
See the need to ask for help		.931				4.49 (0.66)
See the need for urgent help		.900				4.48 (0.67)
See the need to take action		.797				4.49 (0.67)
Responsibility						
Take responsibility for taking action			.950			4.49 (0.68)
Take responsibility for telling someone			.886			4.47 (0.69)
Take responsibility for asking for help			.875			4.48 (0.66)
Take responsibility for reporting			.837			4.49 (0.69)
Knowledge						
Know how to report					.917	4.22 (0.95)
Know where to report know whom to ask for help					.853	4.27 (0.85)
Know what to do					.821	4.28 (0.79)
Know whom to ask for help					.792	4.27 (0.88)
Reporting						
Where to report				.920		4.31 (0.77)
Tell someone				.899		4.38 (0.76)
In what to do =				.871		4.25 (0.80)
Ask for help				.848		4.27 (0.88)
Eigenvalue	12.04	2.03	1.43	1.07	1.05	
% of Variance	59.41	9.32	6.32	4.57	4.499	
Convergent validity	.81	.78	.79	.78	.72	
Discriminant validity	.67	.72	.72	.68	.79	
Composite reliability	.94	.93	.94	.94	.91	
Interfactor correlation						
Factor 1	1.00					
Factor 2	.47	1.00				
Factor 3	.69	.54	1.00			
Factor 4	.59	.62	.65	1.00		
Factor 5	.57	.57	.63	.69	1.00	

n = 162. Missing values were excluded using listwise exclusion method. The extraction method was Principal Axis Factoring with Promax Oblique Rotation with Kaiser normalization. All factor loadings were well above .32. Convergent validity was estimated via Average Variance Extracted (AVE = the sum of the squared loadings divided by the number of indicators). Discriminant validity was estimated via the hetero-trait-monotrait ratio of correlations (HTMT) < 0.85

socio-demographic variables were recorded given that the research was not intended to be focused on individual differences or cross-group comparisons. Table 1 presents the mean score of each item (ranging between 4.14 and 4.50) along with their standard deviations and rotated factor loadings.

Construct Validity and Reliability

The Kayser-Meyer-Olkin (KMO) measure along with Bartlett’s test of sphericity verified the sampling adequacy for EFA of item-responses (KMO = 0.92; Bartlett’s statistic = 3972.8, *df* = 190, *p* < 0.001). The analysis recommended

a five-factor solution with eigenvalues over Kaiser's criterion of 1. All the five factors explained the 84.06% of the variance. Convergent validity, discriminant validity, and composite reliability were satisfactory to ensure the construct validity and reliability of the scale. The AVE values between 0.72 and 0.82 were greater than 0.50 for all five factors and indicated that convergent validity was established. The HTMT values were smaller than 0.85 for all the five factors (0.67 for emergency, followed by 0.72 for recognition, 0.72 for responsibility, 0.68 for intervention, and 0.79 for knowledge), indicating established discriminant validity. Table 1 presents the estimated coefficients for composite reliability, convergent validity, and discriminant validity indices for each factor.

Discussion

The development and measurement of anti-bullying self-efficacy beliefs are crucial for both teachers and students in preventing or intervening in bullying incidents at schools. The effectiveness of anti-bullying programmes particularly hinges on the development and measurement of anti-bullying self-efficacy beliefs among victims and bystanders (Sargioti et al., 2022). Emerging evidence indicates that victim and bystander anti-bullying self-efficacy beliefs can be effectively fostered and measured through the FUSE anti-bullying programme and Dublin anti-bullying self-efficacy scales, which are based on the anti-bullying self-efficacy theory (Kuldass et al., 2023; Sargioti et al., 2022). However, these studies fell short in establishing the extent to which teacher anti-bullying self-efficacy beliefs can be effectively fostered and measured, focusing on students instead.

The present study aimed to evaluate the applicability of the anti-bullying self-efficacy theory and the Dublin bystander anti-bullying self-efficacy scale (Sargioti et al., 2022) to the enhancement and measurement of teacher self-efficacy beliefs. The descriptive results revealed that all the 20 items had high mean scores (ranging from 4.14 to 4.50). Although participating teachers' scores on the post-FUSE program assessments appeared high, the absence of comparative data prevents definitive conclusions about the programme effectiveness. The EFA and subsequent tests of construct validity (convergent and discriminant validity) and composite reliability supported the sufficient psychometric properties of the DABSE-T, revealing the five-dimensional structure (i.e. recognition, emergency comprehension, responsibility, knowledge, and intervention) aligned with the anti-bullying self-efficacy theory (Kuldass et al., 2023; Sargioti et al., 2022). Accordingly, the anti-bullying self-efficacy theory and the DABSE-T (Sargioti et al., 2022) can be considered suitable for promoting and assessing teacher self-efficacy beliefs.

The EFA results suggested that the factor solution might be unidimensional. Nevertheless, a multidimensional or bifactor model could still be considered for two crucial reasons. First, as Kuldass et al. (2023) underscored, "a unidimensional factor solution is expected when an anti-bullying program is very effective; participants give very high scores on each scale, reducing substantial variance in item-responses" (p. 8742). Second, the eigenvalue of the first factor (12.04) was six times larger than that of the second factor (2.03), and at least three factors had considerable inter-factor correlations (ranging from 0.57 to 0.69). These results could be sufficient evidence for a bifactor model, the co-existence of a general factor and sub-factors (see Kuldass et al., 2023). Since an accurate evaluation of school anti-bullying programmes necessitates consideration of teacher anti-bullying self-efficacy beliefs as both a general factor and its subdimensions, a bifactor model of teacher anti-bullying self-efficacy beliefs can be explored in future research.

Limitations and Future Research

A key limitation of this study stems from the reliance on a convenience sampling method, and therefore the findings cannot be generalized to the national population. The FUSE programme was offered nationally to all schools in Ireland. However, only a specific number chose to participate, and those were the schools invited to participate in the study. Future research on the FUSE or any other anti-bullying programme needs to use probabilistic sampling to generalise its findings.

Furthermore, the focus of the present study was testing the psychometric properties of the Dublin Anti-Bullying Bystander's Self-Efficacy Scale for teachers and determining its applicability for such population; therefore, the design used has not addressed aspects that can be tackled by future research. These aspects primarily include the following: (a) the absence of a pre-intervention assessment, (b) the inability to identify a clear cut-off score to distinguish between low and high self-efficacy among participating teachers, (c) the omission of a dimensionality test, (d) the exclusive use of EFA, (e) the lack of predictive evidence for the effectiveness of step-by-step training, and (f) the focus on teacher anti-bullying self-efficacy alone without considering other teacher characteristics such as their attitudes.

The present study focused on testing the DABSE-T scale with a post-intervention design, which lacks data collected prior to the implementation of the FUSE programme. Despite the high self-efficacy scores reported by teachers who participated in the FUSE program, the post-intervention design prevents any definitive conclusions regarding the effectiveness of the anti-bullying program in enhancing teacher self-efficacy in peer-bullying prevention

or intervention. Future research should employ a quasi-experimental design with pre- and post-intervention data collection to establish a clearer causal relationship between the programme and self-efficacy improvements (Lipsev & Cordray, 2000).

On the other hand, the research did not focus on finding a cut-off score to distinguish between low and high levels of anti-bullying self-efficacy among teachers. Previous research on student anti-bullying self-efficacy (Kuldas et al., 2023) found a cut-off score of 2.0, which differentiated between those with low and high anti-bullying self-efficacy. Such a cut-off score is needed to measure the degree to which an anti-bullying programme is ineffective for some teachers.

Recent research (Kuldas et al., 2023) proposed a bifactor model for student anti-bullying self-efficacy, which encompassed a bystander scale for both offline and online peer-bullying. However, as research on teacher anti-bullying self-efficacy is still in its early stages, the current study was delimited to EFA, thereby hindering a dimensionality testing. Therefore, it was unable to determine whether teacher bystander self-efficacy applies to offline or online peer-bullying context. Instead, it exclusively evaluated bystander anti-bullying self-efficacy among participating teachers without distinguishing between offline and online peer-bullying contexts. For instance, further research could use DABSE-T to determine the extent to which teachers feel responsible for addressing online peer-bullying. Existing literature indicates that teachers may perceive less responsibility for online peer-bullying due to its perceived occurrence outside of the classroom and school hours (Green et al., 2017). Moreover, the data analysis included no test of measurement invariance across age, sex, ethnicity, sexual orientation, religion, and socioeconomic status groups. Further research is needed to conduct a Confirmatory Factor Analysis (CFA) of the structural model and test measurement invariance. The absence of a measurement invariance test precludes drawing any empirical conclusions about how diversity affects responses to the DABSE-T and the development of an effective bullying intervention program.

The research provided no predictive evidence regarding the effectiveness of step-by-step training on teacher anti-bullying beliefs. For instance, it remained unclear whether teacher ability to recognise peer-bullying behaviour predicts their understanding of the need for immediate intervention. Further research is needed to test which of the teacher self-efficacy beliefs best predict the act of intervention, such as whether to know how to intervene predict the intervention act more than other steps. In other words, the question remains unclear: Which of the dimensions of the anti-bullying self-efficacy model best predicts the act of intervention or prevention?

Finally, the effectiveness of teacher anti-bullying self-efficacy may also depend on their attitudes towards bullying/

victimization (Troop-Gordon et al., 2015). Teachers' attitudes differ depending on the type of bullying they witness (O'Higgins Norman, 2008). If teachers perceive bullying as a normal part of childhood development and social learning, they are less likely to intervene (De Luca et al., 2019). In such a case, they may also dismiss bullying experiences as something children will overcome and that they need to learn to stand up for themselves (Troop-Gordon & Ladd, 2015). This disregard for bullying behaviour can be particularly harmful as it may be misinterpreted by students as a sign of approval, potentially leading to an increase in peer bullying at school (Burger et al., 2015). As a result, students who are targeted may come to believe that they cannot expect help from teachers (Yoon & Bauman, 2014).

Implications for Practice

Despite all the limitations, the current findings have several implications for school anti-bullying policies and practices. The level of teacher self-efficacy beliefs in peer-bullying prevention and intervention can be used as an indicator of the effectiveness of school anti-bullying policies and programmes across different countries, including Ireland. To this end, the anti-bullying self-efficacy theory (Kuldas et al., 2023; Sargioti et al., 2022) and DABSE-T can be employed effectively. The anti-bullying self-efficacy theory proposes the five non-linear steps that can be adapted to explain teacher self-efficacy in preventing or intervening in peer-bullying incidents at school. This theory suggests that school anti-bullying programmes should promote teacher confidence in their ability to: *recognise* peer bullying behaviour, *comprehend* the need for immediate intervention, *take responsibility*, *know* appropriate actions, and *intervene* (Sargioti et al., 2022).

An anti-bullying programme that fosters teacher self-efficacy beliefs may significantly increase their likelihood of intervening in and preventing peer-bullying incidents at school (Boulton, 2014; Dedousis-Wallace et al., 2014; Fischer & Bilz, 2019; Young & Kerber, 2003). Fostering teacher anti-bullying self-efficacy may contribute to other positive teacher characteristics, which may, in turn, increase the likelihood of teachers effectively addressing peer-bullying incidents. For example, teachers' attitudes towards peer bullying and victimization can be enhanced by training that focuses on their anti-bullying self-efficacy beliefs, such as enhancing their ability to recognize and address peer bullying behaviours (Mazzone et al., 2021). Teachers are more likely to intervene in peer bullying incidents when they feel more confident in their ability to do so (Dedousis-Wallace et al., 2014; Fischer & Bilz, 2019; Young & Kerber, 2003).

One of the main reasons teachers fail to intervene in bullying incidents is their inability to recognize them as

emergencies requiring immediate and appropriate action (Jungert et al., 2016; Mazzone et al., 2021). As such, teacher training should go beyond simply explaining about the different forms of bullying and focus on their anti-bullying self-efficacy. If teachers feel confident in their ability to recognize a bullying incident as an emergency requiring intervention, they are more likely to take personal responsibility to intervene or to know how to effectively address it.

Anti-bullying programmes are therefore recommended to equip teachers with the ability to recognise peer-bullying behaviour (Jungert et al., 2016). This is also because most students often refrain from reporting incidents when they are targeted or witness peer-bullying (Foody et al., 2017). Evidence indicates that only a small percentage of students inform a teacher about peer bullying victimisation (Feijóo et al., 2021; National Advisory Council for Online Safety, 2021). In the absence of such self-reports from students, teacher anti-bullying self-efficacy beliefs are crucial for peer bullying prevention or intervention. This suggests the need for teacher training to enhance their understanding of their role in preventing or intervening in peer bullying (Foody et al., 2018; Jungert et al., 2016).

Teachers play a crucial role in mediating between perpetrators and targets to reduce or eradicate peer-bullying from the classroom (Burger et al., 2015). However, they often overlook the influence of the social context and their own impact as mediators, instead focusing solely on the individual characteristics of the perpetrator or target (Mazzone et al., 2021). To effectively address bullying, teachers must recognise their contextual roles in peer-bullying prevention or intervention (Jungert et al., 2016).

The FUSE program, the anti-bullying self-efficacy theory, and DABSE-T can all contribute to addressing the recommendation for professional development, which is essential not only for teachers but for all school staff (DoE, 2022; Houses of the Oireachtas, 2021). Their potential extends beyond the Irish school system and has international value. They can be applied in school settings in other countries.

Conclusions

The current research has made novel contributions to the anti-bullying literature by adapting the anti-bullying self-efficacy theory and testing the psychometric properties of the DABSE for teachers. It has hereby addressed the gap in the theoretical foundation and measurement tool needed for accurately assessing the pivotal role of teacher self-efficacy beliefs, serving as an indicator of the effectiveness of anti-bullying programmes. The DABSE-T has demonstrated satisfactory psychometric properties as a valid and reliable measure of teacher self-efficacy beliefs in peer-bullying prevention and intervention. Future research can utilize the DABSE-T to evaluate the effectiveness

of an anti-bullying programme and identify teachers who may need additional support in bolstering their anti-bullying self-efficacy beliefs as the ability to: recognise peer-bullying behaviour, comprehend the need for immediate intervention, take responsibility for intervention, know how to intervene, and implement the intervention.

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Data Availability The data that support the findings of this study is not publicly available but can be obtained from the authors upon reasonable request.

Declarations

Conflict of Interest The authors declare no competing interests.

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