TECHNIUM
SOCIAL SCIENCES JOURNAL

Technium.

44/2023

2023

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Technium Social Sciences

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International Communication & PR

Technium Social Sciences Journal
Vol. 44, 174-188, June, 2023
ISSN: 2668-7798
www.techniumscience.com

Development of Early Detection Instruments of Building Intention in Elementary School Students

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Abstract. Bullying in childhood is very detrimental and has a negative impact both in the short and long term. Bullying can cause stress, decreased self-esteem, difficulty getting along, causing psychosocial problems such as depression, loneliness, and anxiety, triggering somatic symptoms, low academic achievement, dropping out of school, increasing psychosis, and encouraging suicidal ideation. Bullying must be prevented and reduced through various efforts such as bullying prevention programs, namely detection and intervention against bullying. In order to detect the potential for bullying to occur, this research focuses on producing instruments for the early detection of child bullying intentions in elementary school students. The instrument developed was an early detection questionnaire on child bullying intentions (DDIPA). The study involved 1260 elementary school students in the early grades. Data analysis using Rasch modeling. The result is a DDIPA instrument consisting of 39 valid and reliable statement items. The DDIPA instrument can be used by researchers, teachers, and counselors in order to detect potential bullying in schools.

Keywords. Child bullying, early detection, instrument, intention

1. Introduction

Bullying is aggressive behavior with unbalanced power that aims to hurt others, done repeatedly so that the victim is unable to defend himself (Smith, 2016; van der Ploeg et al., 2020). Bullying events are rife everywhere, including among students, with a percentage of verbal bullying at 43%, physical bullying at 34%, and cyberbullying at 23% (Hertinjung, 2013). KPAI data shows that 90% of children in Indonesia have experienced bullying (Nurmalina, 2020). Based on reports of cases of bullying, at least 37,381 children were involved in education, and in the media, there were 2,473 reports (KPAI Team, 2020). The high number of reports received by KPAI shows that the phenomenon of bullying is a problem that often occurs and is experienced by children. Preliminary research using a survey conducted by researchers with 622 respondents showed that 14.41% of children aged 6-8 years experienced relational bullying 10.40%, verbal 10.39%, and physical 8.73%.

Events of bullying do not only involve perpetrators and victims, but the role of assistant to the perpetrator and provocation (the party that laughs at) and defender of the victim also contributes (Demaray et al., 2016; Salmivalli et al., 1996; Smith, 2016). The perpetrators of

Technium Social Sciences Journal
Vol. 44, 174-188, June, 2023
ISSN: 2668-7798
www.techniumscience.com

bullying are not the sole perpetrators of acts of bullying. In many cases, the encouragement of the perpetrator's assistance and provocation by external parties pushes the perpetrator to commit bullying more intensely.

Boys use more intimidation using physical force, while girls tend to use indirect intimidation in the form of relational and cyberbullying, such as exclusion and social networking. The bullying often occurs is physical abuse, followed by verbal and relational abuse. Boys are more likely to engage in physical and verbal bullying than girls. Children who have one sibling tend to be more likely to bully (Qiu et al., 2021). The forms of physical bullying that occur in elementary schools generally include pushing, punching, hitting, kicking tables, and pinching. The intensity tends to increase in children aged 10-11 years. Verbal bullying is usually ridiculing, giving negative labels, and calling names that are not liked. Whereas relational bullying usually laughs at, isolates, or asks students for money by force (Kennedy, 2020; Machimbarrena & Garaigordobil, 2018; Mayasari et al., 2019; Rawlings & Stoddard, 2019) and acts of social exclusion in the school environment and social networks (Rawlings & Stoddard, 2019).

Bullying has short-term and long-term effects. For example, physical abuse impacts physical injuries, even death. Likewise, verbal bullying can result in psychological pressure (Mohan & Bakar, 2021). In the long term, verbal bullying can lead to depression, delinquency, and criminality as adults, both as perpetrators and victims (Machimbarrena & Garaigordobil, 2018; Mahriza et al., 2020; Rawlings & Stoddard, 2019), affecting mental health, self-confidence, and the psychological condition of the victim (Mabrur Haslan, 2020; Nyoman et al., 2018). Bullying also impacts student achievement at school (Oliveira et al., 2018).

Based on the impact of bullying, bullying must be prevented and reduced through preventive programs, such as bullying prevention interventions carried out on bystanders (Rawlings & Stoddard, 2019), which include cognitive empathy and affection with five steps, namely: (1) pay attention to the incident, (2) interpret the condition emergency, namely the party who needs it, (3) accepts the responsibility to intervene, (4) knows how the action is needed and, (5) implements the intervention. In addition to interventions, preventive programs in the form of early detection of bullying are carried out with a meta-analysis of traditional bullying, namely verbal, physical, and relational bullying (Kennedy, 2020). The results show that bullying prevention programs are effective in reducing physical and relational forms of bullying victims but less effective for verbal bullying. Other findings show that those who participate in preventive programs have a 32% higher chance of reducing victims of relational and physical bullying while a 28% higher of reducing victims of nonverbal bullying. In line with that, the development of instruments to detect bullying incidents has also been carried out, including The Peer Relations Questionnaire (PRQ), The Pro-victim Scale, and The Victim Questionnaire instruments. The subjects on these three assessment instruments were 172 students from grades 3, 7, 8, and 12 (Elliott, 1996). PRQ is an instrument using the peer relations method that is used to measure the occurrence of incidents of bullying directly or indirectly based on gender differences. The Pro-Victim Scale has 12 question items to measure students' behavior towards bullying incidents. Meanwhile, The Victim Questionnaire includes eight instrument items that are used to measure students' attitudes toward helping victims of bullying. In addition, there is also PEER (Peer Evaluation of relationships at school) (Verlinden et al., 2014). PEER is carried out by giving questions/statements to computer-based students in the form of illustrations and audio relating to themselves and their friends at school (Verlinden et al., 2014).

PEER is an instrument that allows children to answer questions about victims who are peers and tell about friends who are victims independently compared to the interview method

Technium Social Sciences Journal
Vol. 44, 174-188, June, 2023
ISSN: 2668-7798
www.techniumscience.com

(Verlinden et al., 2014). The European Bullying Intervention Project Questionnaire (EBIP-Q) and The European Cyberbullying Intervention Project Questionnaire (ECIP-Q) are instruments used to measure the level of traditional bullying as well as cyberbullying that occurs in Europe and to find out the differences in bullying behavior and the roles that found in bullying behavior (Twardowska-Staszek et al., 2018). The subjects of this study were 1,052 primary and secondary school students in Poland. EBIP-Q and ECIP-Q are instruments developed using a self-report model, which is divided based on students' roles in bullying behavior, whether they are victims, perpetrators, or victims, and perpetrators. This instrument was also developed in several other European regions, namely Colombia and Spain, with 3,830 high school students as research subjects. The development of this instrument which was carried out in Colombia and Spain, strengthens the theoretical construct regarding the two dimensions of bullying, namely cyber-aggression, and cyber-victimization. The test method for these two instruments is to use confirmatory factor analysis and multigroup analysis for each sample in its subgroup (Herrera-López et al., 2017; Twardowska-Staszek et al., 2018).

The Social Skills Improvement System (SSIS) Bullying Subscale is an instrument given to parents, teachers, and students to identify students who exhibit bullying behavior (Rupp et al., 2018). The study used 550 teachers, 2000 parents who had children aged five to 12 years, and 500 students aged eight to 12 years as research subjects. For teachers, the questionnaire given added points regarding the student's academic competency scale. The development of this instrument explores the effectiveness of the multiple informants used in data collection. In the SSIS, there are seven social skills that become sub-scales, namely affirmation, communication, cooperation, empathy, involvement, responsibility, and self-control. Apart from that, there are also other instruments, for example, The Participant Role in Bullying (PRQ) and the Bullying Participant Behaviors Questionnaire (BPBQ) (Demaray et al., 2016). From some of the results of previous research, it appears that the detection of bullying events through instruments that have been developed in the form of self-reports or peer assessments and the use of computers to find out whether children are involved in bullying events, either victims, perpetrators, or spectators. Development of the instrument to detect children who have experienced bullying; while development of the instrument in this study aims to detect bullying intentions early in elementary school students (grades 1, 2, and 3). Instruments for early detection of bullying intentions are designed based on a theoretical framework regarding bullying, namely physical, verbal, relational, and cyberbullying.

2. Literature Review

Instrument Development Concept

The development of the instruments compiled is research and development, which aims to develop and validate products in the field of education (Gall et al., 2002). Developing an instrument that can represent the entire object of research and is accurate must go through two stages: conceptualization and operationalization. Conceptualization refers to clear and concise conceptual definitions and is carried out based on a literature review of the meaning of constructions, describing the characteristics of constructions, and defining constructions using words that do not contain ambiguity (Alshammari et al., 2022). Meanwhile, operationalization is the stage that is carried out after the conceptual definition has been compiled in order to obtain items that are measurable and can reflect the concept by looking at the dimensions, surfaces, concepts, and their categorization into observable and measurable elements (Alshammari et al., 2022; Pujihastuti, 2010). Instrument products are developed based on the concept of the Brog and Gall model with steps (Aka, 2019): (1) Research and information collecting; reviewing the

Technium Social Sciences Journal
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ISSN: 2668-7798
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instrument concept literature, preliminary studies, and field observations to the novelty of the research; (2) Planning; based on the preliminary study the researcher plans for the product to be developed including the purpose, user and product components produced; (3) Development Preliminary field testing; compiling the initial product with steps to determine the purpose of preparing the instrument, looking for relevant theory, compiling instrument item indicators, compiling instrument items, content validation, revising based on validator input, conducting tests on appropriate respondents to obtain response data, conducting reliability analysis, level of difficulty and differentiating power and assembling the instrument (Retnawati, 2016). The next step is standardization of the instrument, namely compiling, testing, repairing, compiling guidelines and scoring an instrument so that an instrument is obtained that is accurate and significant with criteria as a measuring tool that is valid or correct, reliable or fixed, standardized, economical and practical (Arifin, 2017 ; Herlina, 2020); (4) Preliminary field testing, namely researchers conducting early stage trials; (5) Main Product Revision, namely after the initial trial phase, the researcher made improvements to the instrument referring to the results of the trial phase; (6) Main Field testing, which is a wider trial stage after a thorough assessment of the instrument components is carried out; (7) Operational field revision, refinement/improvement of products resulting from field trials; (8) Operational field-testing, namely broader trials with more detailed, broad, and in-depth component assessments; (9) Final product revision, namely the final revision of product preparation; and (10) Dissemination and implementation, namely products disseminated in scientific meetings or publications.

Bullying

Bullying is a negative action that is repeated and intentionally against a victim who is weaker so that he has difficulty defending himself, which endangers him. Thus, bullying has the following characteristics: it aims to hurt, it is carried out repeatedly through long-term actions, and there is an imbalance of power between the perpetrator and the victim (Bradshaw et al., 2017; Gaffney et al., 2019; van der Ploeg et al., 2020; Volk et al., 2017). Bullying is done by using physical or emotional power to control, control and hurt other people, both in the form of physical attacks (hitting, kicking, and pushing), verbal actions (ridicule, threats), and relational (spreading rumors, giving negative nicknames, or intentionally leaving and ignoring others) and cyberbullying (using electronic devices) (Hornor, 2018; Rawlings & Stoddard, 2019). Usually, physical aggression will decrease at the age of 10-11 years, whereas verbal and relational aggression becomes more common. Forms of bullying in early childhood are exclusion, not being invited to play, and verbal intimidation (Helgeland & Lund, 2017; Machimbarrena & Garaigordobil, 2018). Based on this description, it can be synthesized that bullying is a bad and unpleasant act that has a negative purpose through physical, verbal, relational, and cyber violence.

Bullying is a systematic abuse of power in the context of a relationship with others (Horton, 2011). This abuse of power is not interpreted by more powerful individuals such as parents, teachers, school principals, and others but rather by weak individuals rather than other individuals or other groups on purpose. Differences in power in schools occur because there are differences in age, physical strength, verbal skills, the ability to manipulate others, status in groups, and group support; it creates opportunities for bullying from more superior groups.

Bullying in childhood is very detrimental and has short and long-term impacts, including post-traumatic stress disorder, low self-esteem, social difficulties, psychosocial problems (depression, loneliness, anxiety), somatic symptoms, low academic achievement, dropping out of school, increased psychosis throughout life up to the desire to end one's life (Z.

Technium Social Sciences Journal
Vol. 44, 174-188, June, 2023
ISSN: 2668-7798
www.techniumscience.com

Han et al., 2017; Mayo et al., 2019; Yang et al., 2018). Bullying events have actually occurred to children, but sometimes these incidents are not recognized as a form of bullying (Helgeland & Lund, 2017; Natesan et al., 2018). Bullying is a national problem that targets all social classes, races, economies, environments, and age ranges (Sophia & Humphrey, 2013). According to the Centers for Disease Control and Prevention (CDC), bullying is aggressive behavior that is unacceptable to someone because of differences in strength between one individual and another. This abusive behavior has the potential to occur repeatedly from time to time (Kennedy, 2020). Bullying is characterized as an act that is carried out physically, verbally, and psychologically as a repeated threat made by one or more individuals who have the intention to hurt or disturb others, and there is an imbalance of power between the victim and the bully (Gómez Tabares & Landinez-Martínez, 2021). These acts are categorized into four categories of bullying, namely (Kennedy, 2020; Menesini & Salmivalli, 2017; Rezapour et al., 2019; Smith, 2016; Tippett et al., 2010; van der Ploeg et al., 2020): (a) Physical bullying is attacking someone physically by pushing, hitting and kicking, inappropriate touching, and punching; (b) Verbal bullying is in the form of using insulting sentences, making calls, as well as threats, teasing, calling names, or making bad and threatening nicknames; (c) Relational bullying is bullying that is done by spreading rumors, isolating other individuals and carrying out social rejection of other individuals, destroying things, and stealing; and (d) Cyberbullying. This bullying is carried out in cyberspace or also called cyberbullying, using electronic media and in the form of verbal or relational aggression. The manifestation of cyberbullying is creating malicious websites, spreading rumors via social media, terrorizing via the internet, and so on. Cyberbullying occurs when the perpetrator does not directly bully but posts it on a MySpace account, Facebook, or a specially made website or blog and can be disseminated to the general public (Baldry et al., 2017).

Bullying Intentions

Theory Planned Behavior (TPB) is a cognitive theory that presents a series of conceptual thoughts to predict a person's intention to behave so that it can predict the likelihood that the person will engage in a behavior (Shahzalal & Adnan, 2022). Intention can be interpreted as a motivation or encouragement that influences a person's behavior. The intention is also an indication of how hard someone is willing to try and how someone's effort is in behaving (Ajzen, 1991). The stronger the intention in a person, the more behavior will follow that intention (Ajzen, 2020). Intention has the greatest influence on a person's actual behavior. The stronger the intention, the stronger the possibility of the resulting behavior (Shahzalal & Adnan, 2022). The intention to perform a certain behavior is the closest antecedent of that behavior (Billari et al., 2009). Attitudes, norms, and controls are predictors of intentions and behavior. Attitude is a construct that examines social change (Billari et al., 2009). In addition, attitude is a latent disposition to give a like or dislike response to a psychological object. Attitudes are formed spontaneously and inevitably when there is an effort to form beliefs about an object (Fishbein & Ajzen, 2010). Attitudes can place a person in a favorable and unfavorable assessment of an entity. Attitudes can predict many types of human behavior. It is also the strongest predictor of intention (Shahzalal & Adnan, 2022). Norms refer to acceptable behavior within a social group. The main function of norms is to ensure that behavior serves not only the interests of the individual but also the interests of the larger social system. Norms pay attention to the possibility that individuals or groups approve or disapprove of individuals carrying out certain behaviors (Billari et al., 2009b; Fishbein & Ajzen, 2010). Meanwhile, control refers to people's perceptions of the extent to which they are capable of, or have control over, certain

Technium Social Sciences Journal
Vol. 44, 174-188, June, 2023
ISSN: 2668-7798
www.techniumscience.com

behaviors. Perceived behavioral control refers to a person's belief that the behavior is under his or her control – but operationally, perceived behavioral control is often judged by the ease or difficulty of the behavior (Fishbein & Ajzen, 2010; Syahri et al., 2021). The theory of planned behavior is modified by adding one determinant, namely personal norms, namely the approval or disapproval of a person to perform a behavior (Dang & Liu, 2022). Personal norm is an activation norm theory which is a person's awareness regarding the consequences that can be detrimental and the assumption of responsibility for not acting pro-environmentally. Personal norms determine whether a person must take certain actions to prevent bad outcomes (H. Han, 2014). Personal norms not only contribute to intentions and behavior but increase the predictability of attitudes (Schwartz & Tessler, 1972). Thus, bullying intention is a person's tendency to display verbal, physical, relational, and cyberbullying behavior due to rational thinking. The intention to bully follows the sequence of thinking steps with the behavioral target components, namely the object of bullying, acts of verbal, physical, cyber, and relational intimidation, and situations that support the behavior and the time period.

3. Research Methods

Research Design

This study uses research and development (research and development) methods to produce certain products and conduct tests to determine their level of effectiveness (Purnama, 2013). The development model used is the development of the Borg and Gall research model, which aims to find and design new products and procedures that are systematic, field-tested, and evaluated to find specific criteria with quality and effectiveness according to standards (Gall et al., 2002).

The research population was the first-grade students of public elementary schools in DKI Jakarta Province. The sampling was carried out by multistage sampling based on the region and the number of schools in each region. Comrey and Lee stated that a sample of 50 is too little, 100 is too little, 200 is enough, 300 is good, 500 is very good, and 1,000 is perfect (Mundfrom et al., 2005). Based on these criteria, the sample for this study was determined to be 1260 elementary school students aged 7-9 years.

Instrument Development Procedure

The steps for developing the instrument in this study are adopting the Borg and Gall development model by carrying out ten stages, namely: research and information collecting, planning, development of a preliminary form of product, preliminary field testing, main product revision, main field testing, operational product revision, operational field testing, final product revision and dissemination and implementation (Aka, 2019).

Data Collection and Analysis Techniques

The research data collection used a questionnaire in the form of a Gutman scale carried out through interviews with the teacher. The interview refers to the statement points that aim to early detection of the intention of bullying children. Data analysis uses Rasch capital, which is operationalized with the latest Winsteps software version 5.4.1.0. The first stage of the trial was small-scale (sample = 120), and the second stage was a large-scale trial (sample = 1,260).

4. Results

The results of the first phase of the trial with a limited sample (n = 120) showed 39 items were valid. The items were then tested in the second stage with a sample of 1260 students using Rasch modeling. This modeling basically creates a measurement scale with equal

Technium Social Sciences Journal
Vol. 44, 174-188, June, 2023
ISSN: 2668-7798
www.techniumscience.com

intervals and together uses person score data and statement item score data. Individual scores and item scores form the basis for estimating true scores, which indicate individual ability levels and item suitability levels (Sumintono et al., 2015). The analysis using Rasch modeling shows the unidimensionality test with an RVEM value of 50.8%, which indicates that the unidimensional requirements are met because the RVEM value is more than the tolerance threshold of 20% (Reckase, 1979). In addition, the Cronbach Alpha value = 0.98 is also greater than the criterion value = 0.7. It shows that the interaction between 1260 people and 39 items as a whole has high reliability. Overall, the value of person reliability = 0.98 and item reliability = 0.98. It indicates that the Early Detection of Child Bullying Intentions (DDIPA) instrument has high reliability (Wei et al., 2014).

Wright map analysis or person-item map analysis, which aims to determine the correlation between person and item in describing the strength of the instrument items as a tool for detecting bullying intentions among students, shows that the highest bullying intentions were found in students numbers 130 and 1186, while the level of bullying intentions was the lowest occurred or was found in 382 students.

Figure 1 visualizes the X axis as the level of student bullying intentions, and the Y axis is the magnitude of the information function of bullying intentions. These results indicate that a moderate level of student bullying (logit 0) produces very high information. Then, a low or high level of bullying will produce low information. It means that the DDIPA instrument items produce maximum information when given to students who experience moderate bullying intentions.

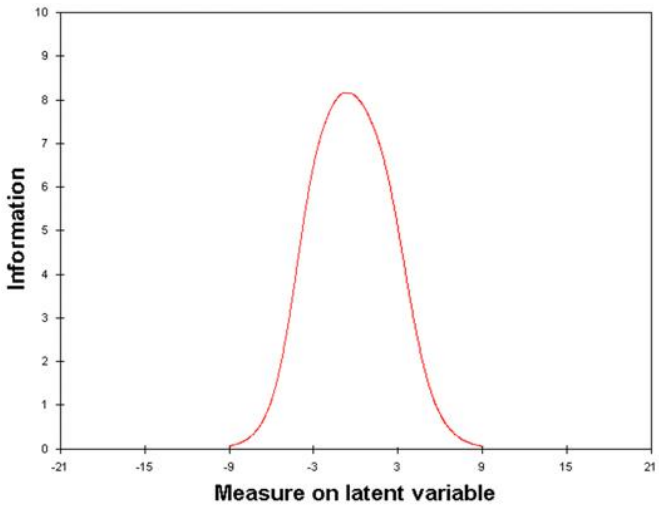

Figure 1. Test Information Function

Table 1 shows the results of the categories of student bullying intentions, from very high to very low. Students with very high bullying intensity = 2%, high = 8%, moderate = 7%, low = 17%, and very low = 66%.

Technium Social Sciences Journal
Vol. 44, 174-188, June, 2023
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Table 1.
Results of the Student Bullying Intention Category (Person Ability)

No	Category	Amount	Percentage
1.	Very high	26	2%
2.	High	105	8%
3.	Middle	86	7%
4.	Low	215	17%
5.	Very low	828	66%

The results of the item fit analysis showed that 25 items (64%) out of the 39 statement items fit the model (fit model). These items meet at least two of the three criteria: MNSQ values are between 0.5 <MNSQ 1.5, ZSTD values are between -2 < ZSTD 2, and Point Measure Correlation (Pt Mean Corr) values are not negative or are between 0.4 Pt Measure Corr 0.85 (Boone et al. (2014). Meanwhile, 14 (36%) other statement items were not fit because they did not meet the minimum criteria, namely P13, P15, P22, P39 P26, P27, P28, P29, P30, P32, P33, P35, P36, and P37.

In the measured item, a standard deviation value (0.74) is obtained. If this value is combined with the mean measure value (-0.05), the level of item bullying intentions can be grouped into five groups. If the value of b is less than -1.16 logit, then it is included in the very high group; if b is between -1.16 logit to -0.42 logit, it is included in the high group, the group of statement items is in the medium category; value b = -0.42 logit to +0.32 logit, the group of statement items is in a low category; value b = > +0.32 logit to +1.06 logit, the group of statement items is in the very low category; the value of b = more than +1.06 logit, and the statement item group is in the very high category. Based on these groupings, 10.2% of the statement items were in the very low category, 23.1% were in the low category, 35.9% were in the medium category, 23.1% were in the high category, and 7.7% were very high.

In addition, Rash modeling also informs Differential Item Functioning (DIF) or differences in item functions using the Mantel Haenzel method. The presence or absence of DIF can be determined by looking at the resulting DIF analysis table. If the item statement contains a probability value <0.05, then the item statement contains DIF (Bambang & Wahyu, 2015). The DIF analysis results show that all statement items have a Mantel Haenzel probability value of more than 0.05. It indicates that there are no items in the statement that indicate DIF. That is, the function of the statement items based on the male and female sex groups has the same function so that the chance of answering correctly for a person has the same abilities between male or female gender.

Meanwhile, the results of the analysis of bullying intentions based on the suitability of the respondents (person) are summarized in Table 2. The results show that out of the 1260 people analyzed, 1218 respondents (97%) fit the model (fit model), and only 42 people (3%) were not suitable (fit). Respondents are said to be suitable if they consistently describe what is expected by the model. The criteria are: the MNSQ value is between 0.5 <MNSQ 1.5, the ZSTD value is between -2<ZSTD-2, and the Point Measure Correlation (Pt Mean Corr) is not negative or is between 0.4 Pt Measure Corr 0, 85.

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Vol. 44, 174-188, June, 2023
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Tabel 2.
Results of Person Fit

No	Criteria	Number of Persons Personal fit	
		Fit	Not Fit
1	0,5 < MNSQ <1,5	1218 persons	42 persons
2	-2 < ZSTD < 2		
3	0,4 < Pt Mean Corr < 0,85		
	Percentage	97%	3%

5. Discussion

The DDIPA instrument consists of 39 statement items with two answer options, "Yes" and "No," tested on 1260 respondents. From the instrument's unidimensionality test, information was obtained that the RVEM value was 50.8% which met the unidimensional requirements (> 20%). From the item and person reliability tests, a reliability coefficient = 0.98 (> 0.70) is obtained, which indicates that the DDIPA instrument has high reliability (Wei et al., 2014). Judging from the degree of suitability of the items, of the 39 item statements, 25 (64%) of them fit the model (fit model), and 14 (36%) of the other items did not fit. Of the 39 item statements, 10.2% of the items were in the very low category, 23.1% were in the low category, 35.9% were in the moderate category, 23.1% were in the high category, and 7.7% were in the very high category. Based on the level of person fit, out of 1260 respondents, 1218 (97%) respondents fit the model (fit model), and only 42 (3%) respondents did not fit (fit). The level of student bullying intentions in the very high category = 2%, high = 8%, moderate = 7%, low = 17%, and very low = 66%. Overall, none of the statement items indicated DIF. That is, each statement item has the same function based on gender. That means both men and women have the same opportunity to respond to or answer each statement item.

From the trial results, the DDIPA instrument is appropriate for measuring the intention to bully elementary school students, especially students in grades 1-3 MIN in Jakarta. In addition to being valid and reliable, the DDIPA instrument also demonstrated its ability to detect the intensity of bullying among students, from very high, high, medium, and low to very low levels. It provides an opportunity for anyone, including teachers, counselors, parents, social workers, and researchers, to use the DDIPA instrument to detect potential bullying of students in elementary schools. Under these conditions, the research results in the form of the DDIPA instrument not only make a scientific (theoretical) contribution to various disciplines, such as psychology, education, guidance, and counseling, but also make a practical contribution to teachers, counselors and psychologists in carrying out their professional functions. Moreover, the DDIPA instrument is a novelty in bullying specifically designed to measure the bullying intentions of children aged 7-9 years or elementary school students grades 1-3.

6. Research Limitations

Although this research has been carried out following strict scientific procedures, it has some limitations. First, this research only involved a small proportion (1260) of students in grades 1-3 MIN in DKI Jakarta. In fact, there are still students from private Madrasah Ibtidaiyah (MIS) in the DKI Jakarta area. Apart from that, there are also MIN and MIS students in other provinces in Indonesia, and there are even students from public elementary schools and private schools, both in DKI Jakarta and other areas. Second, this research uses analysis using Rasch modeling; further research can use other models that can also be considered, for example,

Confirmatory Factor Analysis (CFA) under Structural Equation Modeling (SEM). Third, the research does not use control variables that can influence respondents in responding to statement items on the questionnaire, for example, personality, social intelligence, emotional intelligence, locus of control, and self-regulation.

7. Conclusion

This study aims to produce an instrument for early detection of bullying intentions in elementary schools. The results show that the instrument for early detection of child bullying intentions for elementary school students is the Early Detection of Child Bullying Intentions (DDIPA) which consists of 39 statement items with alternative answers: "Yes" and "No," which have been proven valid and reliable. The DDIPA instrument can detect the prevalence of child bullying intentions with a fit level of 97% and has the ability to categorize levels of bullying intentions precisely for 1260 children, namely: very high = 2%, high = 8%, medium = 7%, low = 17%, and very low = 66%. The steps for developing DDIPA begin with making 40 statement items accompanied by five alternative answers and then improving them into two alternative answers after being proven invalid and reliable. The improved version of DDIPA was then tested on 120 respondents and analyzed using Rasch modeling; the results showed 39 valid and reliable statement items. The DDIPA instrument was then tested on 1260 respondents and analyzed using Rasch modeling; the results showed high validity and reliability. Item fit with model = 64%, and person fit with model reached 97%, and there is no indication of DIF based on gender.

The findings of the DDIPA instrument provide theoretical and practical implications. Theoretically, the DDIPA instrument provides opportunities for further studies or research on a larger and more comprehensive scale related to the intention to abuse children. Follow-up studies/research is not only limited to the development of bullying intention instruments at different contexts and age levels but can also be linked to other relevant and contextual variables, such as personality, emotional intelligence, social intelligence, spiritual intelligence, social environment, and family parenting. In this context, the DDIPA instrument can be an important part of a mixed-methods or quantitative research model in multidisciplinary studies. Meanwhile, practically, the DDIPA instrument can make it easier for teachers, parents, and researchers to detect potential bullying in children early. Early detection of bullying intentions provides important goodwill to reduce the possibility of bullying behavior among children. It, in turn, can reduce bullying behavior, which has recently become more massive, along with the widespread use of various communication devices that provide sophisticated features for sharing information and data instantly and in real-time.

With the conclusions and implications above, some suggestions can be recommended. First, the DDIPA instrument was developed further by involving a larger number of samples with a wider area, for example involving MIN and MIS students as well as Public and Private Elementary Schools in several provinces in Indonesia. In addition, the development of DDIPA instruments can also be enriched by other analytical approaches, for example, CFA-SEM, and involves control variables such as personality, IQ, locus of control, and self-regulation. The DDIPA instrument can also be used as an instrument for measuring the variable intention of bullying children in multivariable quantitative research. Second, the item fit test results with Rasch modeling showed that 14 items were unfit. These items must be analyzed for formulation and content and re-tested in order to obtain more suitable results. Third, teachers, researchers, counselors, and parents should consider using the DDIPA instrument to detect possible potential bullying among children. On a broader scale, the DDIPA instrument can also be used by

organizations, such as schools, professional organizations (for example, HIMPSI, ABKIN), the Indonesian Child Protection Commission (KPAI), and the Education Office to map conditions of bullying intentions among children. It is important as early anticipation to mitigate the phenomenon of bullying among children, which is de facto detrimental to both parties, both the perpetrators and especially the victims of acts of bullying. It means that DDIPA instruments can be used both individually and classically.

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