Norm Development for the Early Adolescence Empathy Scale (EAES): A Standardization Study Following EFA and CFA

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Abstract

This study aimed to develop normative data for the Early Adolescent Empathy Scale (EAES), a psychometric scale designed to assess empathy in early adolescents in Thailand. Grounded in a multidimensional framework (Davis, 1994; Decety and Michalska, 2010), the EAES consists of three components: Cognitive Empathy (CE), Emotional Empathy (EE), and Compassionate Empathy (CPE). The study employed a descriptive quantitative design, following validation through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), to establish normative scores. Participants included 394 students aged 10–14 years, all under the age of 15 from public primary and secondary schools in Bangkok, selected using stratified random sampling. Normative data were derived using percentile ranks and T-score standardization. The 50th percentile (P50) of total empathy was 136 out of 165 points (equivalent to 4.10/5). Regression equations were applied to calculate T-scores for each subscale. Results indicated that the EAES is both psychometrically valid and practical for use in educational and psychological settings. The scale offers standardized interpretation of empathy levels and supports data-informed interventions for socio-emotional learning (Eisenberg et al., 2015)

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Introduction

Empathy plays a vital role in adolescents' social and emotional development by supporting prosocial behavior, emotional regulation, and healthy peer relationships (Allemand, Steiger and Fend, 2015; Eisenberg et al., 2006). During early adolescence, rapid emotional, physical, and social changes often lead to increased self-focus and challenges in managing emotions, which may temporarily reduce empathetic responses (Davis, 1994). Research by Zuffianò et al. (2018) shows that empathy is positively associated with self-regulation and peer adjustment during this period. However Several studies have highlighted the limitations of using empathy scales developed in Western contexts when applied in non-Western societies. Cultural differences in emotional expression, communication styles, and social expectations may significantly affect the accuracy and relevance of such tools. For example, Detsomboonrat et al. (2023) emphasized the importance of cultural adaptation in their validation of the Jefferson Scale of Empathy among Thai dental students, noting that differences in educational systems and cultural norms can impact empathy scores and their interpretation. Similarly, Pitanupong et al. (2023) found that empathy among Thai medical students is influenced by cultural context, and warned that imported tools may not accurately capture culturally specific manifestations of empathy. These findings highlight the necessity of developing culturally appropriate and developmentally tailored measures. In light of the evolving social and emotional landscape among adolescents, this study addresses the pressing need for modernized assessment tools. Traditional empathy scales often fail to reflect the rapidly changing contexts of adolescent experiences, especially in non-Western settings. The EAES was developed to bridge this gap by providing a tool that is socially relevant and culturally grounded in the present Thai context. Therefore, the present researcher aims to develop an empathy scale that is both age-appropriate and culturally relevant for Thai early adolescents. Such a tool is intended to benefit all stakeholders, particularly the children themselves, by promoting a better understanding of their empathic development and supporting their emotional and social growth. Del Barrio et al. (2004) caution that using culturally mismatched scales may compromise the reliability and validity of assessment results, reinforcing the need for culturally appropriate and developmentally tailored measures.

To provide an appropriate scale for Thai adolescents,the Early Adolescent Empathy Scale (EAES) was developed as a norm-referenced instrument designed specifically for Thai

early adolescents. Grounded in psychological theory, the EAES captures the multidimensional nature of empathy, consisting of Cognitive Empathy (understanding others' thoughts and perspectives), Emotional Empathy (sharing others' feelings), and Compassionate Empathy (acting in response to others' emotions) (Davis, 1994; Decety and Jackson, 2004). I developed the EAES to ensure that the instrument reflects the cultural context and developmental stage of Thai adolescents, allowing for accurate and meaningful assessment of empathy in this population. This tripartite model is further supported by Jolliffe and Farrington (2006), who identified distinct but interrelated empathy dimensions that influence social behavior. The EAES employs illustrated social scenarios based on real-life experiences of Thai adolescents to reflect cultural norms and age-relevant challenges. The development process involved reviewing existing literature, generating culturally relevant items, expert validation by six professionals, and pilot testing with students to ensure content clarity and appropriateness.

The development of the Early Adolescence Empathy Scale (EAES) was grounded in an integration of key theoretical models. Davis's (1994) multidimensional model formed the core, highlighting cognitive, emotional, and compassionate empathy. Decety and Jackson's (2004) neuropsychological model added brain-based insights, while Hoffman (2000) developmental theory ensured age-appropriate design. Additionally, Baron-Cohen (2011) theory addressed individual empathic differences, and Batson (2011) altruism theory framed compassion as prosocial behavior. These integrated perspectives establish the EAES's robust and multidimensional foundation.

The scale's psychometric properties were established through Exploratory Factor Analysis (EFA), which revealed three distinct factors with strong item loadings (0.58 to 0.87), and Confirmatory Factor Analysis (CFA), which showed excellent model fit (χ^2/df = 1.109, CFI = 1.00, GFI = 0.96, RMSEA = 0.016, SRMR = 0.042). After validation, the second phase focused on generating normative data using a sample of 394 Thai students aged 10–14 years, all under the age of 15. Percentile ranks and T-scores, widely used in psychological assessments to classify individuals' performance relative to a normative sample. Scores between the 25th and 75th percentiles are typically considered average, while scores below the 25th percentile are viewed as below average, and those above the 75th percentile as above average (Flanagan and Caltabiano, 2004; Naglieri, LeBuffe and Shapiro, 2014). These classifications assist educators, psychologists, and researchers in identifying students who may require targeted support or who exhibit strong social awareness and leadership potential. For instance, students scoring below

the 25th percentile might benefit from interventions aimed at enhancing their social-emotional competencies, whereas those above the 75th percentile may demonstrate advanced interpersonal skills indicative of leadership capabilities (Naglieri, LeBuffe and Shapiro, 2014)

The availability of culturally grounded norms greatly enhances the practical utility of the EAES. In school settings, it informs social-emotional learning (SEL) programs and helps identify students in need of support. In clinical practice, the tool enables the monitoring emotional development. For researchers, it offers a reliable and context-sensitive and reliable instrument for studying empathy in Thai adolescents. Unlike many Western-adapted tools, the EAES was designed developed from the ground up to align with Thai language, values, and social experiences. This culturally responsive approach answers global calls for more context-specific assessments (van de Vijver and Leung, 2011), ensuring that empathy is measured as it is genuinely experienced within Thai culture that enhances the scale's accuracy, relevance, and real-world impact.

Research Objectives

1. To develop normative percentile scores for the Early Adolescents Empathy Scale (EAES) based on a Thai early adolescent population.

2. To generate T-score conversions for each component of empathy: cognitive, emotional, and compassionate.

3. To evaluate the scale's utility in identifying students who demonstrate low or high levels of empathy, guiding interventions that support both emotional and social development.

Research Methodology

This study employed a descriptive quantitative design to establish normative data for the Early Adolescent Empathy Scale (EAES). It followed a prior phase in which the EAES was developed and validated through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). These analyses confirmed a stable three-factor structure: Cognitive Empathy (CE), Emotional Empathy (EE), and Compassionate Empathy (CPE), representing the key components of empathy in early adolescence.

Building on this foundation, the current phase focused on generating norm-referenced scoring systems, including percentile ranks and standardized T-scores. These conversions allow for meaningful interpretation of individual and group scores, enabling the scale's application in educational, psychological, and clinical contexts. By standardizing raw scores, the EAES becomes a comprehensive and practical tool for assessing empathy in diverse adolescent populations.

Population Samples

This study targeted early adolescents aged 10 to 14 years, all under the age of 15 which enrolled in Grades 5 to 9 in public schools across Bangkok, Thailand. This age range represents a key developmental period for emotional and social growth. According to 2024 educational records, a total of 112,148 students were enrolled at these grade levels: 49,993 students under the Bangkok Metropolitan Administration and 62,155 students under the Secondary Educational Service Area Office Bangkok 1.To ensure representativeness, stratified random sampling was employed based on grade level and gender. Schools were categorized by size, and samples were proportionally drawn—one extra-large primary school (from 437) and 17 extra-large secondary schools (from 67). This sampling strategy helped reduce bias and ensured balanced representation across the target population.

A total of 394 students were selected, representing all five grade levels (Grades 5–9). This sample size is considered statistically appropriate, as it exceeds the minimum recommended sample of 384 for populations over 100,000, ensuring a 95% confidence level with a 5% margin of error (Israel, 1992; Krejcie and Morgan, 1970). Notably, this same group had previously participated in the Confirmatory Factor Analysis (CFA) phase of the EAES validation, ensuring consistency across research phases.

Ethical approval was obtained from the Institutional Review Board of Srinakharinwirot University. The use of the same sample for both CFA and norm-setting enhanced internal consistency, reinforcing the validity and applicability of the EAES as a culturally and developmentally appropriate tool for Thai early adolescents.

Research Instrument

The primary tool used in this study was the Early Adolescent Empathy Scale (EAES), a culturally tailored instrument developed to measure empathy among Thai adolescents aged 10–14 years, all under the age of 15. The EAES includes 33 items and 11 illustrated scenarios, designed to enhance engagement and reflect real-life emotional and social situations relevant to Thai students.

Each of the 11 images supports specific item types:

Section 1 : 8 situational images depict common peer interactions such as inclusion, exclusion, or emotional challenges encouraging cognitive and compassionate responses.

Section 2: 3 facial expression images focus on recognizing emotional cues, targeting emotional empathy.

The EAES is divided into three subscales, each with 11 items:

1.Cognitive Empathy (CE): Understanding others' perspectives

2.Emotional Empathy (EE): Sharing and resonating with others' feelings

3.Compassionate Empathy (CPE): Motivation to help others in need

Items are rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), allowing nuanced responses. Higher scores indicate greater empathy.

The tool's development followed a rigorous process. Items were based on a literature review of empathy and adolescent development, then reviewed by an expert panel in psychology, education, and child development. This ensured content validity, cultural relevance, and developmental appropriateness.

To confirm the scale's structure, both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were conducted. EFA identified the three-factor structure as theorized. CFA confirmed this structure with strong factor loadings (0.58–0.87) and excellent model fit (CFI = 1.00, GFI = 0.96, RMSEA = 0.016). Content validity was assessed by six experts in psychology, education, and child development using the Item-Objective Congruence (IOC) method, with scores ranging from 0.80 to 1.00. Internal consistency reliability was confirmed with Cronbach's alpha coefficient of 0.89 for the overall scale.

Overall, the EAES is a valid and reliable instrument. Its blend of visuals and culturally grounded content makes it especially suitable for early adolescents. It can be confidently used in educational and clinical contexts to assess empathy and inform intervention strategies.

Data Collection

Data collection began after receiving approval from relevant educational authorities and an ethics review board. Ethical clearance was secured to ensure the protection of adolescent participants, with the research protocol reviewed for compliance with ethical standards.

Formal permission was obtained from participating schools, and cooperation was established with administrators and teachers. Both students and their guardians were informed about the study's purpose, procedures, and benefits. Written consent was obtained from school representatives, and verbal or written assent was provided by the students, in line with ethical guidelines for research involving minors.

The Early Adolescent Empathy Scale (EAES) was administered during regular school hours in classroom settings. Trained research assistants supervised the process, ensuring clear instructions and standardization. Participation was voluntary, responses were kept confidential,

and no identifying information was collected. Students could withdraw at any time without penalty.

A total of 394 students aged 10–14 years, all under the age of 15 participated, selected through stratified sampling to ensure diversity in grade level and gender. All participants were enrolled in [Insert school name(s)], Bangkok, Thailand. This same sample had previously been used in the CFA phase, ensuring consistency between scale validation and norm development.

After data collection, responses were screened and entered into a secure database. Raw scores were analyzed to calculate means, standard deviations, and percentile ranks, and then converted into T-scores using regression equations. These norms support the EAES's practical use in educational and psychological settings.

Data Analysis

Data analysis in this study was conducted using both descriptive and inferential statistical methods. The primary aim was to establish normative data for the Early Adolescent Empathy Scale (EAES) and to explore differences in empathy levels among early adolescents across age groups.

Descriptive Statistics

Descriptive statistics were used to summarize the overall characteristics of empathy among the 394 early adolescent participants. These statistics included means, standard deviations, minimum and maximum scores, and percentile ranks for each of the three subscales which is Cognitive Empathy (CE), Emotional Empathy (EE), and Compassionate Empathy (CPE) as well as for the total empathy score. The results revealed that the overall mean score for empathy was 4.02 (S.D. = 0.36), indicating a generally high level of empathy in the sample.

Table 1 Descriptive statistics of empathy components (n = 394)

Subscale	Means	S.D.
Cognitive Empathy (CE)	4.13	0.27
Emotional Empathy (EE)	3.94	0.58
Compassionate Empathy (CPE)	3.98	0.52
Total Empathy	**4.02**	**0.36**

Table 1 in each of the three subscales showed relatively high mean scores, suggesting that early adolescents in this sample generally demonstrate a strong ability to understand, feel with, and act compassionately toward others.

Norm-Referenced Scoring and T-Score Calculation

To establish normative data, raw scores were converted into percentile ranks and standardized T-scores. Norms were calculated for the total empathy score as well as for each subscale. The 25th, 50th, and 75th percentiles were established to serve as benchmarks for low, average, and high empathy levels. For instance, the 50th percentile scores were in Table 2

Table 2 Normative percentile scores (n = 394)

Factor	Max score	Percentile 25	Percentile 50	Percentile 75
Cognitive Empathy (CE)	55	44	46	48
Emotional Empathy (EE)	55	40	45	48
Compassionate Empathy (CPE)	55	41	45	48
Total Empathy	**165**	**128**	**136**	**141**

To address incomplete raw score ranges in the standard T-score distribution, predictive regression equations were used to calculate normalized T-scores across the entire scoring spectrum. The equations used were in Table 3:

Table 3 Regression equations for T-Score conversion of EAES subscales (n = 394)

Empathy Dimension	Regression Equation (T-score)
Total Empathy	Tc = -0.737 + 0.019X
Cognitive Empathy (CE)	Tc = 0.536 + 0.026X
Emotional Empathy (EE)	Tc = -0.033 + 0.041X
Compassionate Empathy (CPE)	Tc = 0.753 + 0.022X

This approach allowed for the transformation of raw scores into a T-score range from approximately T = 14 to T = 78, enabling comparison across individuals and supporting the scale's use in psychological assessment settings.

Inferential Statistics: ANOVA and Scheffé Post Hoc Tests

To examine age differences in empathy (ages 10–15), a one-way ANOVA and Scheffé post hoc tests were conducted. Results showed significant differences in total empathy ($F = 20.494$, $p < 0.001$), with younger students (10–11) scoring lower than older groups. Emotional ($F = 29.466$, $p < 0.001$) and Compassionate Empathy ($F = 6.508$, $p = 0.002$) also varied by age, while Cognitive Empathy showed no significant difference ($F = 2.240$, $p = 0.108$), suggesting it remains relatively stable. See Table 4 for details.

Table 4 ANOVA results for empathy scores by age group (n = 394)

Subscale	F-Value	p-Value	Significant
Cognitive Empathy (CE)	2.240	0.108*	No**
Emotional Empathy (EE)	29.466	< 0.001	Yes
Compassionate Empathy (CPE)	6.508	0.002	Yes
Total Empathy Score	**20.494**	**< 0.001**	**Yes**

Note: *The lack of significant age differences in Cognitive Empathy (CE) suggests this ability remains stable or develops gradually between ages 10–15. This aligns with theories that cognitive empathy emerges in early childhood and stabilizes earlier than emotional or compassionate empathy (Decety and Michalska, 2010; Eisenberg, Spinrad Morris, 2006). **"Yes" in the Significant column indicates $p < 0.05$; "No" indicates $p \geq 0.05$.

Scheffé tests further confirmed that emotional and compassionate empathy levels increased significantly with age, particularly among the age groups of 10–11, 12- 13, and 14–15 years, all of whom were under the age of 15.

Findings

Normative values for the Early Adolescent Empathy Scale (EAES) were successfully established based on data collected from 394 students aged 10 to 14 years, all under the age of 15. The analysis was conducted across the total scale and its three subcomponents: Cognitive Empathy (CE), Emotional Empathy (EE), and Compassionate Empathy (CPE). These results provide essential benchmarks to support the use of the EAES in both educational and clinical settings, particularly for identifying typical and atypical levels of empathy during early adolescence.

The median raw scores for the EAES subscales were 46 for Cognitive Empathy, 45 for Emotional Empathy, and 45 for Compassionate Empathy, out of a maximum of 55 points per subscale. When converted to 5-point Likert scale equivalents (by dividing each raw score by the 11 items per subscale), these medians correspond to average ratings of 4.14, 4.05, and 4.07,

respectively. These consistent scores across all domains support the multidimensional structure of empathy and suggest that early adolescents in the sample tend to report relatively high levels of cognitive, emotional, and compassionate empathy.

These results confirm the multidimensional nature of empathy in early adolescents, with cognitive, emotional, and compassionate components showing similar levels. To aid interpretation, raw scores were converted into percentile ranks and T-scores using regression formulas, addressing non-normal distributions. T-scores ranged from 12 to 82 for subscales and 14 to 78 for the total score, with a mean of 50 and SD of 10. Percentile benchmarks (P25, P50, P75) help classify empathy levels as below average, average, or above average. Educators and psychologists can use these scores to screen students, monitor social-emotional growth, or evaluate intervention outcomes. Students below the 25th percentile may need support, while those at or above the 75th may show strong interpersonal skills linked to leadership. A summary of descriptive statistics, percentiles, and T-score ranges is provided in Table 5.

Table 5 Normative descriptive statistics for EAES subscales and total score (n = 394)

Factor	Max score	Mean	SD	P 25	P50	P75	T-Score Range
Cognitive Empathy	55	45.4	3.0	44	46	48	22-82
Emotional Empathy	55	43.4	6.4	40	45	48	15-68
Compassionate Empathy	55	43.8	5.7	41	45	48	12-70
Total Empathy Score	**165**	**132.5**	**11.8**	**128**	**136**	**141**	**14-78**

Note: Each subscale contains 11 items rated on a 5-point Likert scale, with a maximum subscale score of 55. The total empathy score has a maximum of 165. Percentiles (P25, P50, P75) are norm-referenced benchmarks, and T-scores were derived from regression-based transformations of raw scores.

Table 5 This section presents descriptive stats, percentiles, and T-scores for EAES subscales and total score. Cognitive Empathy had the highest mean (45.4) and lowest SD (3.0), while Emotional and Compassionate Empathy had similar means (43.4 and 43.8) with more variability. Percentiles clustered in the mid-40s, and the total mean score was 132.5/165. T-score ranges, especially for Cognitive Empathy (22–82), show notable individual differences.

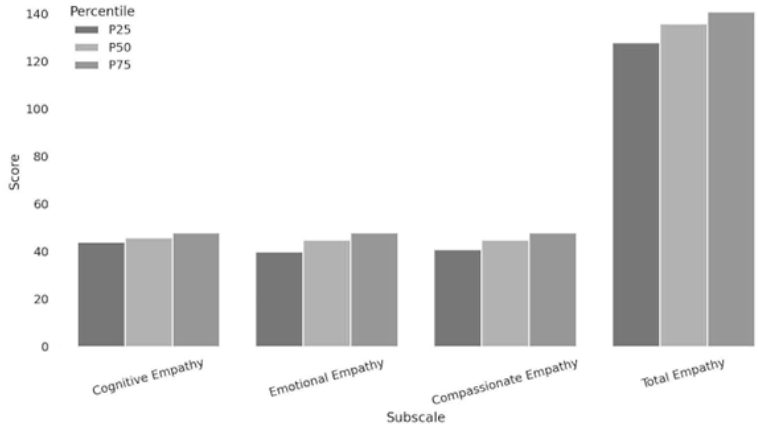


Figure 1 Percentile scores (P25, P50, P75) for EAES subscales

This figure shows the 25th, 50th, and 75th percentile scores for Cognitive (CE), Emotional (EE), and Compassionate Empathy (CPE), providing benchmarks to classify empathy as low (≤P25), average (P26–P74), or high (≥P75).

These findings establish the EAES as a psychometrically valid and practically useful scale, with strong application potential in both Thai educational settings and cross-cultural research efforts.

In summary, the EAES demonstrated strong normative structure and interpretability across subscales. The use of percentile ranks and T-scores provides a practical framework for identifying empathy levels in early adolescents. These findings lay the groundwork for meaningful application of the scale in future screening, intervention, and research initiatives.

Discussion

The present study aimed to develop and validate norm-referenced scores for the Early Adolescent Empathy Scale (EAES), with the hypothesis that early adolescents in Thailand would demonstrate moderate to high levels of empathy, and that empathy components would show age-related differences consistent with developmental theory. The findings generally supported these expectations and aligned well with both prior research and theoretical frameworks.

The EAES demonstrated strong psychometric properties and a clear three-factor structure—Cognitive, Emotional, and Compassionate Empathy. This result reinforces the theoretical framework of empathy as a multidimensional construct, as proposed by Davis (1994) and Decety and Jackson (2004). In the present study, normative data showed that Thai adolescents generally scored in the moderate-to-high range. Specifically, Emotional and Compassionate Empathy scores were slightly higher than Cognitive Empathy. Importantly, this

pattern is consistent with existing research on collectivist cultures, where empathy is often expressed through relational sensitivity and prosocial concern (Ho, 2019; Norasakkunkit and Uchida, 2011; Triandis, 2001).

As hypothesized, significant age differences were found in Emotional and Compassionate Empathy, with older adolescents (12–15) scoring higher than younger ones (10–11), reflecting typical growth in emotional and social development (Blakemore and Choudhury, 2006; Eisenberg et al., 2015). In contrast, Cognitive Empathy showed no significant age difference, suggesting it may stabilize earlier, as supported by studies on prefrontal maturation (Decety and Michalska, 2010). This highlights that while emotional and motivational empathy develop through adolescence, cognitive empathy may reach maturity sooner.

The establishment of percentile ranks and T-score equations adds practical utility to the EAES by enabling professionals to classify empathy levels into low, average, and high groups. This norm-based structure enhances the EAES's usefulness for screening, evaluation, and progress monitoring in both clinical and school-based contexts. Educators and counselors can apply these benchmarks to identify students with low empathy for targeted interventions, or track improvements following Social-Emotional Learning (SEL) programs (Eisenberg et al, 2015). In Thailand, where empathy is increasingly emphasized in national educational policy (Office of the Education Council, 2019), tools like the EAES offer evidence-based support for guiding psychosocial development.

Moreover, the EAES provides a flexible foundation for future research. Its culturally contextualized structure makes it suitable for repetition and comparison across different regional and international settings. Cross-cultural researchers may adapt the scale to examine how empathy develops across distinct societal values, gender roles, or educational environments (Cheung, van de Vijver and Leong, 2011) Additionally, longitudinal studies can further investigate how empathy trajectories shift over time, and how they relate to academic, behavioral, or mental health outcomes.

In summary, the findings not only validate the EAES as a reliable tool but also provide insight into the developmental patterns and cultural expressions of empathy among early adolescents in Thailand. The alignment between observed results and theoretical expectations supports both the empirical and conceptual contributions of the scale. The EAES holds significant potential to inform policy, practice, and future inquiry in adolescent psychology and education.

Limitations

Although the sample in this study consisted of 394 Thai early adolescents, all participants were drawn exclusively from public schools. This presents a limitation in the generalizability of the findings, as students in private or alternative educational settings may experience different social, emotional, and cultural influences that affect empathic development. Future research should incorporate more diverse school settings to enhance the validity and applicability of the EAES across a broader range of Thai adolescents.

Recommendations

The results of this study offer practical insights that contribute to both the theoretical framework and real-world application of empathy assessment in early adolescence. Drawing upon the validated three-factor structure and the newly established normative benchmarks of the Early Adolescent Empathy Scale (EAES), this section outlines recommendations that aim to enhance practice, promote early intervention, and guide future scholarly inquiry and the following recommendations are proposed to support its implementation in educational, psychology, and research settings.

Recommendations based on the Research Findings

The EAES has demonstrated robust psychometric properties and is well-positioned for practical use in educational and psychological settings. It is recommended that:

1. Educational institutions integrate the EAES into regular school-based assessments to identify students with varying levels of empathy. This can support individualized Social-Emotional Learning (SEL) plans, especially for students demonstrating below-average scores in emotional or compassionate empathy.

2. School counselors and psychologists use the EAES to screen for students needing support with peers, emotions, or behavior. Percentile and T-score norms help guide targeted interventions.

3. The EAES will support national character education and guidance programs in line with Thailand’s policy on emotional intelligence, civic values, and harmony. Its cultural and linguistic fit makes it useful for school interventions in both urban and rural areas.

4. The results also encourage the use of the EAES in teacher development programs, where educators can use the findings to better understand student needs, promote empathetic classroom environments, and reflect on their own roles in fostering emotional and social growth among adolescents.

Recommendations for Future Research

Further research is needed to extend the use of the EAES. Studies should explore its validity across regions, school types, and social settings in Thailand, track empathy development over time, and examine its cross-cultural relevance. While this study provides a solid foundation, additional research is necessary to further explore and strengthen the applicability of the Early Adolescent Empathy Scale (EAES). It is recommended that :

1. Regional validations were identified Test the EAES across various Thai regions, school types, and socio-economic groups to refine norms and assess contextual effects on empathy.

2. Longitudinal research were identified track students over time to observe how empathy develops during adolescence and identify key

3. Cross-cultural comparisons were identified using adapted versions of the EAES to study empathy in adolescents from different cultures, highlighting universal and culture-specific traits.

4. Intervention studies were identified by the EAES to evaluate the impact of SEL programs, counseling approaches, or classroom strategies designed to enhance empathy or teaching strategies on empathy growth.

5. Further exploration was identified investigating gender differences, peer influences, and mental health links to deepen understanding of empathy in adolescence.

New Insights from the Research

This study provides a reliable empathy norm scale specific to Thai adolescents. The T-score system developed enables future research, diagnosis, and personalized educational planning in a culturally relevant manner which shown in Figure 2.

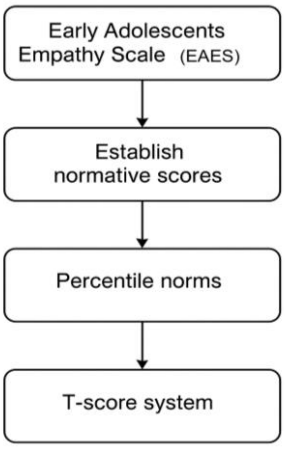


Figure 2 Diagram of EAES standardization model

Figure 2 shows the standardization process of the EAES, from administration to the development of norms, which are converted into percentiles and T-scores for meaningful interpretation and comparison.

The EAES offers new insights into early adolescent psychology and assessment by providing a culturally relevant, norm-referenced empathy scale for Thai youth. It advances both theory and practice in measuring empathy across diverse contexts. Key findings include:

1. Development of Culturally Anchored Norms

The Early Adolescent Empathy Scale (EAES) is the first validated empathy tool for Thai adolescents with normative data. Its percentile ranks and T-score conversions allow meaningful interpretation within the Thai cultural context, addressing the limitations of Western-based tools.

2. Identification of Multidimensional Empathy Profiles

Confirming the three-factor structure—Cognitive, Emotional, and Compassionate Empathy—demonstrates that empathy in early adolescence is multidimensional. These distinct but related components reflect global empathy theory while validating the model within the Thai context. This structure enables educators to better identify students' specific empathy strengths or needs and provide targeted support.

3. Age-Related Patterns in Empathy Development

The study shows that emotional and compassionate empathy grow with age, while cognitive empathy stays stable. This suggests emotional and prosocial growth continues in early adolescence, while perspective-taking develops earlier. These findings can guide age-appropriate interventions, as shown in Figure 3.

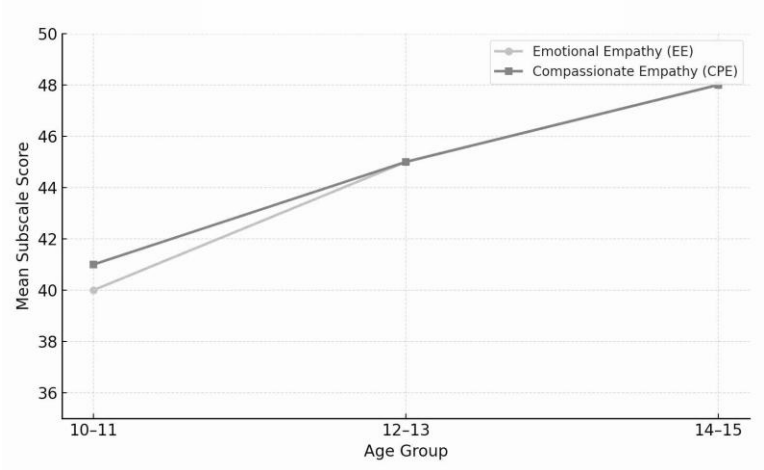


Figure 3 Age-empathy growth curve

Figure 3 shows a line graph of mean Emotional Empathy (EE) and Compassionate Empathy (CPE) scores across ages 10–14 years,all under the age of 15. The upward trend suggests both types of empathy grow with age, supporting theories of socio-emotional development in adolescence.

4. Practical Utility of the EAES in Schools

The EAES's norm-referenced scores support screening, early intervention, and counseling. Schools can group students by empathy levels and offer targeted support. Thai-specific benchmarks improve the accessibility and impact of school-based services, as shown in Figure 4.

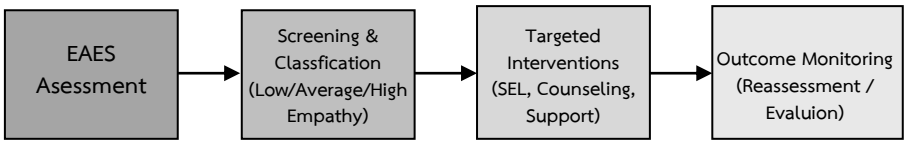


Figure 4 EAES application pathway chart

Figure 4 This flowchart shows how the EAES can be used in schools and clinics, starting with assessment, then screening and classification, followed by targeted support (like SEL or counseling), and ending with progress monitoring.

5. Foundation for Cross-Cultural and Longitudinal Studies

This study lays the groundwork for future research in both cross-cultural and longitudinal settings. The EAES can be used to compare empathy development across different cultures, school types, or regions, supporting a global understanding of adolescent empathy. It also holds potential for tracking changes in empathy over time and examining its links to outcomes like academic success, peer relationships, and emotional well-being.

Summary

This research aimed to standardize the Early Adolescent Empathy Scale (EAES), a tool developed to assess empathy in early adolescents. The study focused on creating percentile norms and T-score conversion equations to allow for meaningful interpretation of empathy scores. This process helps transform raw test scores into standardized values that can be compared across different individuals and groups.

The EAES is designed to measure three core components of empathy: cognitive empathy (the ability to understand others' thoughts and perspectives), emotional empathy (the ability to

share and recognize others' feelings), and compassionate empathy (the motivation to help or respond kindly to others in distress). The findings of this study confirmed the three-factor structure of the scale through both exploratory and confirmatory statistical methods. The results supported the scale's structural validity and internal consistency, confirming that it is a psychometrically sound instrument. A total of 394 early adolescents in Thailand participated in this study. The sample included students from various schools and backgrounds, ensuring that the results reflected a diverse and representative population. The normative data derived from this sample were culturally relevant, making the EAES a suitable tool for use in Thai educational and psychological contexts.

The development of percentile norms and T-score conversions provides a standardized way to interpret test results. These norms help identify where an individual stands in comparison to peers of the same age group. This information is essential for identifying students with lower or higher levels of empathy, allowing teachers, counselors, and psychologists to take early action when needed.

The EAES supports targeted interventions by helping educators understand specific areas of empathy that may need development. For example, a student may show strong cognitive empathy but low emotional empathy, indicating a need for social-emotional learning activities that build emotional awareness. This targeted approach enables more effective support tailored to individual needs.

In addition to its practical applications, the study contributes to the academic field by providing a validated and standardized tool for empathy assessment in early adolescence. It also opens opportunities for further research, including cross-cultural comparisons, longitudinal studies of empathy development, and evaluations of interventions designed to promote empathy.

Overall, this study establishes the EAES as a reliable and culturally appropriate instrument. By offering standardized scoring guidelines and a strong theoretical foundation, it advances both the scientific understanding and practical application of empathy measurement in early adolescence within the Thai context.

References

Allemand, M., Steiger, A. E., and Fend, H. A. (2015). Empathy Development in Adolescence Predicts Social Competencies in Adulthood. *Journal of Personality, 83*(2), 229-241.

Batson, C. D. (2011). *Altruism in Humans*. Oxford University Press.

Blakemore, S. J., and Choudhury, S. (2006). Development of the adolescent brain: Implications for Executive Function and Social Cognition. *Journal of Child Psychology and Psychiatry, 47* (3-4), 296-312.

Cheung, F. M., van de Vijver, F. J. R., and Leong, F. T. L. (2011). Toward a New Approach to the Study of Personality in Culture. *American Psychologist, 66*(7), 593–603.

Davis, M. H. (1994). *Empathy: A social Psychological Approach.* Westview Press.

Decety, J., and Jackson, P. L. (2004). The Functional Architecture of Human Empathy. *Behavioral and Cognitive Neuroscience Reviews, 3*(2), 71–100.

Decety, J., and Michalska, K. J. (2010). Neurodevelopmental Changes in the Circuits Underlying Empathy and Sympathy from Childhood to Adulthood. *Developmental Science, 13*(6), 886–899.

Eisenberg, N., Hofer, C., Sulik, M. J., and Spinrad, T. L. (2015). *Self-Regulation Effortful Control, and Socioemotional Correlates (Part IV. Development Considerations).* (2nd ed.). Guilford Press.

Eisenberg, N., Spinrad, T. L., and Morris, A. S. (2006). *Empathy-Related Responding in Children.* Lawrence Erlbaum Associates.

Flanagan, D. P., and Caltabiano, L. F. (2004). *Test Scores: A Guide to Understanding and using Test Results* (*Helping Children at Home and School II: Handouts for Families and Educators).* National Association of School Psychologists.

Ho, I. T. (2019). Student Misbehavior in Hong Kong: Teachers' Perceptions of the Moral Elements in Classroom Management. *Educational Research for Policy and Practice, 18*(1), 45–61.

Israel, G. D. (1992, December). *Determining Sample Size*. https://www.tarleton.edu/academicassessment/ documents/Samplesize.

Krejcie, R. V., and Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement, 30*(3), 607–610.

Naglieri, J. A., LeBuffe, P. A., and Shapiro, V. B. (2014). *DESSA-Mini Manual – Devereux Student Strengths Assessment (K-8TH Grade): A Universal Screening and Progress Monitoring System for Social-Emotional Competencies*. Devereux Center for Resilient Children. https://measuringsel.casel.org/wp-content/uploads/2018/09/DESSA-Mini-Manual-1.pdf.

Norasakkunkit, V., and Uchida, Y. (2011). Psychological Consequences of Post-Industrial Anomie on Self and Motivation among Japanese Youth. *Journal of Social Issues, 67*(4), 774–786.

Office of the Education Council (OEC). (2019). *Policy Framework for Emotional and Moral Intelligence in Thai Youth*. OEC.

Triandis, H. C. (2001). *Individualism and Collectivism: Past Present and Future.* Oxford University Press.

Van de Vijver, F. J. R., and Leung, K. (2011). *Equivalence and Bias: A Review of Concepts, Models, and Data Analytic Procedures*. Cambridge University Press.