Growth Mindset in the Lens of Social-Cognitive Approaches: The Critical Role of Cultural Values, Parental Involvement, and Teacher Engagement

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ABSTRACT: This study investigates the factors influencing the growth mindset of high school students in Surakarta through a social-cognitive perspective. Employing a mixed-method approach with an explanatory sequential design, the research examined the linear relationship between parental involvement, teacher engagement, and cultural values with students' growth mindsets, while also exploring educators' perspectives and integrating quantitative and qualitative findings. Participants included 395 students and 24 educators (guidance and counseling teachers and principals). The instruments consisted of self-assessment scales measuring growth mindset, cultural values, perceptions of parental involvement and teacher engagement, along with narrative inquiry interviews. Quantitative analysis revealed a significant linear relationship between the three independent variables and students' growth mindset. Classical assumptions were met, including normality ($p = 0.058 > 0.05$), absence of multicollinearity (VIF < 10), homoscedasticity, and no autocorrelation (Durbin-Watson = 2.056). Multiple regression analysis confirmed the model's feasibility ($F = 68.045$, $p < 0.001$), with the three predictors jointly explaining 34.3% of variance ($R^2 = 0.343$). Individually, cultural values showed the strongest effect ($\beta = 0.400$, $t = 9.120$, $p < 0.001$), followed by parental involvement ($\beta = 0.203$, $t = 4.218$, $p < 0.001$) and teacher engagement ($\beta = 0.154$, $t = 3.236$, $p = 0.001$). Qualitative analysis identified five themes: intrinsic motivation, life goals, cultural and family influences, the role of teachers and schools, and social support. The integrated findings suggest that growth mindset is ecosystemic, shaped by interactions of personal, behavioral, and environmental factors. This study extends understanding of growth mindset within the Indonesian, particularly Javanese, cultural context and provides practical implications for educational interventions.

INTRODUCTION

The growth mindset, a concept developed by Carol Dweck, refers to the fundamental belief that individual capacity can be enhanced through hard work, dedication, and continuous learning

(C. S. Dweck, 2016). This contrasts with a fixed mindset that views ability as fixed (Kapasi & Pei, 2022). It is important to look at Bandura's cognitive social theory framework to understand how this *growth mindset* is formed and interacts with the environment. Bandura emphasizes the existence of dynamic reciprocal interactions between three main factors that influence human behavior (Triadic Reciprocal Determinism) (Bandura, 1977), namely personal (cognitive) factors, which include thoughts, beliefs, hopes, goals, and self-abilities (such as self-efficacy); behavioral factors include actions or responses that individuals perform; as well as environmental factors that include the social and physical context in which the behavior occurs, including influences from others and social norms (Bandura, 2004, 2005). These three factors affect each other sustainably (Bandura, 1999).

Growth mindset as a personal cognitive construct in a cognitive social framework interacts with factors such as cultural values (Sun et al., 2021), Parental involvement (Justice et al., 2020; Kantova, 2024; Lee & Mendoza, 2025) and Teacher engagement (Bardach et al., 2024; Mesler et al., 2021) to form an individual mindset. Research shows that, as explained by Bandura, specific cultural dimensions have a predictive impact on a growth mindset (Jiang, 2025). Meanwhile, differences in perspectives on cross-cultural intelligence emphasize the importance of studying mindsets from the perspective of local values (Sun et al., 2021; Zhang et al., 2019).

The focus of growth mindset research on high school students is crucial, considering that this phase is a period of academic identity formation and preparation for higher education (Park et al., 2020). Although the growth mindset has been extensively researched globally, the factors that shape it in the Indonesian context are still limited in understanding. Indonesia's results-oriented high school education system and cultural values that tend to avoid failure can hinder the development of a growth mindset, while the specific role of parents and teachers in the local context is not fully understood. This gap is significant considering the need to adapt Western concepts to Indonesian cultural values, especially Javanese.

Internalizing local wisdom is a formula that must be developed because it forms a mindset (Surata et al., 2025). The growth mindset in the framework of Javanese culture can be harmonized with the concept *of "roso pangroso"* (taste and feeling), which combines intellect and spirituality. This gap is significant considering the importance of adapting Western concepts, such as *a growth mindset*, to Indonesian cultural values, especially Javanese (Muhiddin et al., 2025). The mindset in Javanese culture that tends to prioritize "*harmony*" and "*nrimo ing pandum*" (accepting one's share) may need to be reviewed so that it is not interpreted as effortless surrender (Surata et al., 2025). On the other hand, *the growth mindset* can be integrated as an encouragement to *"sinau terus" (continue learning)* and "nyiptakake kebecikan" (creating goodness). This manifestation of effort and self-improvement aligns with the *growth mindset* through sustainable self-development in the educational environment.

This study integrates three main factors parental involvement, teacher involvement, and cultural values in one comprehensive model to provide an in-depth understanding of the phenomenon of *growth mindset* in Indonesian culture. By focusing on Surakarta, this research offers unique insights into the interaction between Javanese values and a *growth mindset*. Using a *mixed-method* approach and a cognitive-social perspective, this study aims to: (1) analyse the linear relationship between parental involvement, teacher involvement, and cultural values with *students' growth mindset*; (2) explore educators' perspectives on these factors; and (3) integrate quantitative and qualitative findings for a comprehensive understanding.

This research offers significant novelty by presenting an integrated model that has not been widely researched in the Indonesian context. The results of this study can provide theoretical and practical significance. Theoretically, this research contributes to the *growth mindset* literature by

providing a model that integrates cultural values (Javanese) into the framework of social cognitive theory. This research demonstrates that Western concepts of *a growth mindset* can resonate with local wisdom. Thus, this study expands the *growth mindset* model by situating it in a specific cultural context, demonstrating how personal, behavioral, and environmental factors interact uniquely in Indonesia especially in Javanese culture. Practically, the research findings can serve as a basis for developing more effective educational interventions to enhance students' growth mindsets, provide guidance for educators and parents in supporting growth mindsets, and inform education policies that are more responsive to the needs of student character development.

METHODS

Research Design

The design used in this study is the Mixed *Method*. Mixed methods are the collection or analysis of quantitative and qualitative data in a single study where data are collected simultaneously or sequentially, given priority, and involve data integration at one or more stages in the research process (Hanson et al., 2005). Mixed methods research is a methodology in the social, behavioral, and health sciences that collects quantitative (closed) and qualitative (open) data, integrates the two, and draws conclusions (meta-inference) that provide insights beyond single data. The basic assumption is that the combination of statistical (quantitative) trends with personal (qualitative) stories and experiences provides a better understanding of research problems (Cresswell, 2022).

The type used is *the explanatory sequential design*. Explanatory *sequential mixed methods* design (also called a two-phase model; consists of collecting quantitative data first and then collecting qualitative data to help explain or decipher quantitative results. This approach is because quantitative data and qualitative results will provide an overview of the research problem (Creswell, 2012). At the heart of this design is connecting two data databases, where quantitative results are the focus to be followed up with qualitative data collection(Cresswell, 2022). Sequential explanatory refers to the Cresswell design presented in Figure 1.

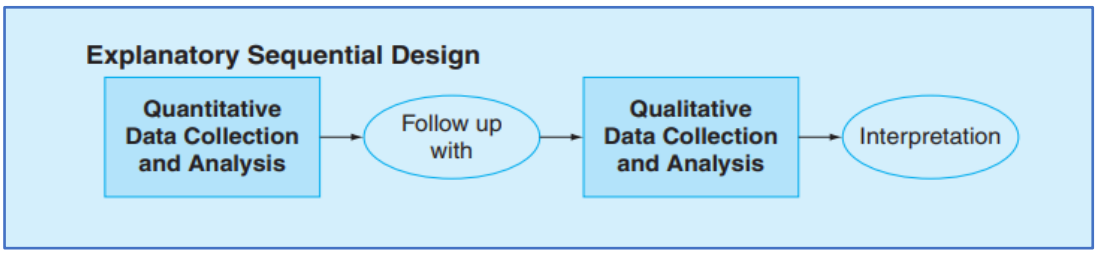

Figure 1. Explanatory Sequential Design by Cresswell

The design of this research will begin with quantitative research (first phase), followed by qualitative research (second phase), followed by the integration process (third phase). Researchers chose *sequential explanatory* designs because quantitative data provides a broader overview or pattern by examining factors that affect growth mindset. In contrast, qualitative data will provide a deeper understanding of the context and meaning behind these numbers to study participants.

Population, Sample, and Research Participants

The target population of this study is all high school students (both public and private) in the city of Surakarta, Central Java, Indonesia. This population is assumed to have homogeneous characteristics, especially in the context of characteristics of high school students in general. Sampling was done using a multi-stage cluster sampling technique, resulting in a final sample of 395

high school students. This sample came from 18 high schools that were randomly selected from the population in Surakarta City. The students in the sample are those in classes X and XI, and students in class XII are omitted.

The demographic profile of the sample (N=395) is as follows: Most of the sample is female, with 241 students (61%), compared to 153 male students (39%). Most sample students were 16 (177 students, 45%) and 17 (162 students, 41%). Students aged 15 (46 students, 12%) and 18-19 years old (10 students combined, 3%) comprise a smaller proportion. The sample was dominated by class XI students, who amounted to 229 students (58%), while class X students amounted to 166 students (42%). This follows the data collection restrictions that are only allowed for classes X and XI. The Javanese tribe is most of the sample, covering 367 students (93%). The Sundanese, Chinese, and others are each a small minority group.

The participants involved in the qualitative data research were educators from 18 high schools (nine public high schools and nine private high schools) in Surakarta, Central Java. This group of participants consisted of 18 Guidance and Counseling Teachers, representing 75% of the total participants, 4 Principals (17%) and 2 Deputy Principals (8%). The selection of these participants is based on their key role in interacting directly with students and their in-depth understanding of the dynamics of the school environment.

Research Instruments

The quantitative data collection instrument used four psychological scale instruments. Meanwhile, qualitative data collection uses a narrative interview guideline instrument growth *Mindset Instrument (Instrument 1). A growth mindset* is an individual's fundamental belief that their capacity to thrive can be enhanced through hard work, dedication, and a continuous learning process(C. Dweck, 2017). This belief is manifested in what individuals believe (*thinking*), how they feel (*feeling*), and the actions they take (*actions)* (C. S. Dweck, 2006, 2015).

Cultural Values Instrument *(Instrument 2).* Cultural values represent the core principles that guide the behavior and beliefs of individuals in a culture, which are also the foundation for understanding differences between groups(Cooper et al., 2020; G. J. Hofstede et al., 2002). Cultural values in this study specifically focus on the context of formal education (school) (G. Hofstede, 1986). This measuring tool was developed based on six dimensions of cultural value (G. Hofstede, 2011): Identity*, Hierarchy*, Gender, Truth*,* Virtue*, and* Societal*.*

Student*'s Perception of Parental Involvement Instrument (Instrument 3). Parental involvement* measures students' subjective perceptions of the extent to which they feel parental support encourages *a growth mindset* in learning rather than actual support from parents. This parental involvement is evaluated through three main aspects: *behavioral involvement*, *cognitive-intellectual involvement*, and dan *personal involvement* (Boerchi & Tagliabue, 2018; Hill & Tyson, 2009).

Student*'s Perception of Teacher Engagement* Instrument (Instrument 4). Students' perceptions of Teacher engagement in this context refer to students' subjective views of the teacher's level of engagement, which in turn influences students' responses and interactions in the learning environment(Lam & Zhou, 2020; Schaufeli et al., 2006; Schaufeli & Bakker, 2004). The instrument was developed with four main aspects: *Cognitive engagement*, *Emotional engagement*, *Social engagement: students*, and *Social engagement: colleagues* (Klassen et al., 2013). The validity and reliability were tested by product-moment correlation. The results of the validity and reliability of each instrument are presented in Table 1.

Table 1. Instrument Validity and Reliability Test.

No	Instrument	Number of valid items for reliability calculation	Reliability Coefficient (Alpha Cronbach)
1	Student's Growth Mindset Scale	29	0.934
2	Cultural Values	23	0.723
3	Student's Perception of Parental Involvement Instrument	34	0.947
4	Student's Perception of Teacher Engagement	34	0.932

Table 1 presents the results of the validity and reliability test of the research instrument. The results showed that all instruments had a high alpha coefficient, namely Cultural Values (0.723), and very high categories in the Student's Growth Mindset Scale (0.934), Student's Perception of Parental Involvement (0.947), and Student's Perception of Teacher Engagement (0.932) instruments, indicating that each of these instruments had a good level of internal consistency and was very reliable for use in the study.

Data collection in qualitative research utilizes narrative interview guideline instruments. The interview guidelines are designed to explore an in-depth narrative of the student's growth mindset, which will then be analysed thematically. The focus of the interview included four key areas: participants' understanding of the growth mindset of students, the characteristics of students who show a growth mindset, factors that influence the development of the growth mindset, and the school's efforts to facilitate the growth mindset in schools. The interview questions were structured narratively, asking participants to tell an initial picture or experience that emerged when thinking about the concept of a growth mindset and its impact on the school or to tell a specific event that made them identify students with a growth mindset.

Research Procedure

This study uses a sequential *mixed method* approach that combines quantitative and qualitative to understand the factors that affect students' *growth mindset*. The Explanatory Sequential design procedure will be carried out in seven stages (Creswell, 2012), which is visually presented in Figure 2.

1) Phase 1 was carried out with a quantitative survey (Phase 1), which collected numerical data using surveys to identify the dominant factors in the *growth mindset of* high school students.
2) Multiple Regression Analysis (Stage 2) Analyzes quantitative data to test the relationship and prediction between one dependent and three independent variables. The results will be confirmed qualitatively.
3) Phase 2 was carried out with qualitative interviews (Phase 3), *and focus group discussions* (FGD) were conducted with *narrative inquiry* to collect stories and in-depth experiences of participants (4-5 participants per group with one moderator).
4) Thematic Analysis (Stage 4): Analysing qualitative data thematically to answer research questions 2 and 3 requiring in-depth understanding.
5) Phase 3 is carried out by Findings Integration (Phase 5), combining quantitative and qualitative analysis results to gain a more comprehensive understanding.
6) Narrative Integration (Stage 6), Interpreting quantitative results with qualitative narratives, explains why specific patterns emerge (based on Morgan, 2017).
7) Meta-Inference (Stage 7): Drawing comprehensive conclusions from quantitative and qualitative findings for deeper insights and stronger validity.

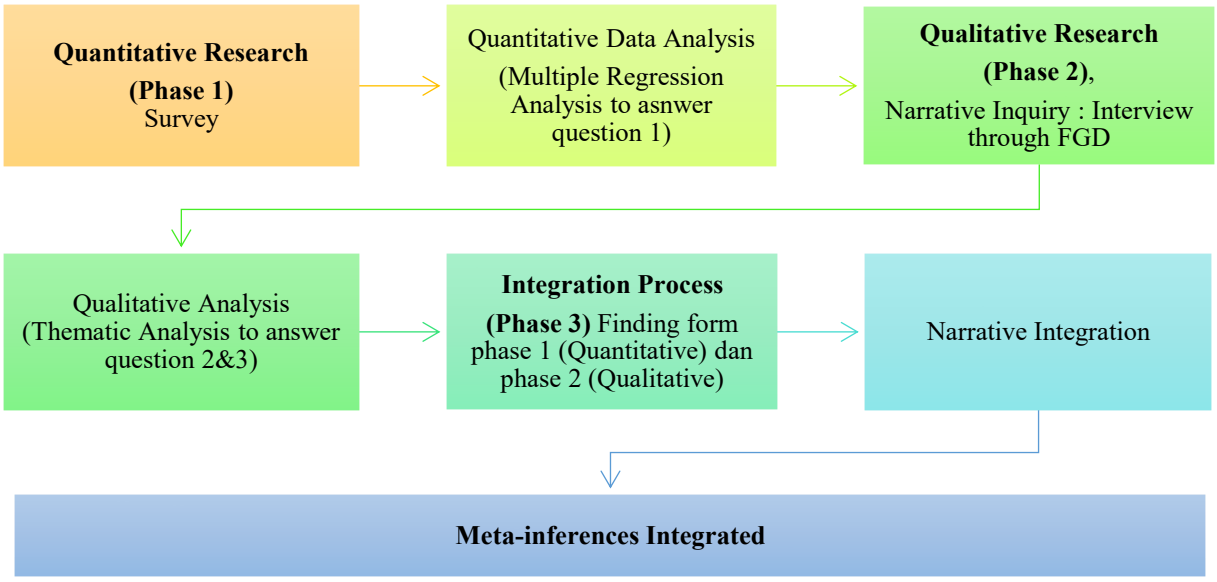

Figure 2. Explanatory Sequential Design Procedures.

Data Analysis

The data analysis process in this study adopts a *sequential mixed method* approach, where quantitative data is analysed first, followed by qualitative data analysis. The integration of findings from these two data types is carried out in the final phase to achieve a comprehensive understanding.

Quantitative Data Analysis (Phase 1)

Quantitative data is processed using SPSS statistical software. The multiple linear test analysis aims to test the extent to which the three identified independent variables affect or predict the dependent variable, namely students' *growth mindset*. The results of multiple regression analysis will provide a statistical overview of the dominant factors that correlate with a growth *mindset*. The analysis is used to answer research question 1.

Qualitative Data Analysis (Phase 2)

Apply thematic analysis to interview transcripts and field notes. The process includes encoding data, grouping code into themes, reviewing themes, and crafting narratives to understand participants' experiences and views. The analysis is focused on answering qualitative research questions 2 and 3 to provide an in-depth understanding of the participants' experiences and views.

Analysis of the Process of Integration of Findings (Phase 3) & Meta-Inference

Integrating quantitative (regression results) and qualitative (theme) findings using the Narrative Integration Method (Morgan, 2017), qualitative data is used to provide in-depth meaning and interpretation of quantitative results. The culmination of the analysis is the withdrawal *of Meta-Inference* (Teddlie & Tashakori, 2009), a high-level integrative conclusion resulting from the synthesis of quantitative and qualitative findings. It aims to gain a holistic understanding and deeper insight into the factors that influence the *growth mindset of* high school students.

Limitations of Research Methods

Although this study uses a comprehensive *mixed-method* approach, there are some methodological limitations. The *limited multi-stage cluster sampling* of high school students in

grades X and XI in Surakarta may limit the generalization of findings to the overall high school student population, especially given the non-inclusion of grade XII students and the specific geographic focus. Student perception data regarding parent and teacher involvement may not be accurate without direct confirmation. Other limitations include the potential for biased interpretation of the researcher during narrative integration and the scope of qualitative participants dominated by guidance and counselling teachers and principals, which may not fully reflect the perspectives of all *education stakeholders*, such as subject teachers or students' parents.

RESULTS AND DISCUSSION

This study investigated the factors of *growth mindset* in high school students through a social-cognitive approach. Using *a sequential explanatory mixed method design*, this study presents the results in three parts: analysis of the linear relationship between factors (quantitative), description and meaning of educator experiences (qualitative), and integration of in-depth understanding of the two findings.

Linear Relationship between Parental Involvement Factors, Teacher Engagement, and Cultural Values with High School Students' Growth Mindset

A quantitative analysis of 395 high school students in Surakarta showed a significant linear relationship between the three factors studied and students' growth mindset. Before performing multiple regression analysis, all classical assumptions were met, including normality ($p = 0.058 > 0.05$), absence of multicollinearity (VIF < 10 for all variables), homoscedasticity, and undetectable autocorrelation (Durbin-Watson = 2.056).

The results of multiple regression analysis confirmed that the research model was feasible to use with an F-count value of 68,045 and a significance of $0.000 < 0.05$. The three independent variables simultaneously explained 34.3% of the variation in students' growth mindset ($R^2 = 0.343$), while other factors outside the model influenced the remaining 65.7%. Individually, all three factors showed a significant positive influence. Cultural values had the most decisive influence with a beta coefficient of 0.400 ($t = 9.120$, $p < 0.001$), followed by parental involvement with beta 0.203 ($t = 4.218$, $p < 0.001$), and Teacher engagement with beta 0.154 ($t = 3.236$, $p = 0.001$). The regression equations formed in Figure 3:

$$Y = 14.165 + 0.780\ X_1 + 0.140\ X_2 + 0.135\ X_3$$

Figure 3. Multiple Linear Regression Equations.
Y = Growth Mindset, X_1 = Culture Value, X_2 = Parent, X_3 = Teacher

The results of this study show that the better the students' perception of cultural values, the higher their *growth mindset* scores. In fact, for every one point of increase in the perception of cultural values, students' *growth mindset* scores can increase by 0.780 points. This makes cultural values the most influential factor in predicting a student's *growth mindset*. In addition, support from parents also plays an important role. Everyone's point of improvement in parental support can increase the *growth mindset* score by 0.140 points. Similarly, students' attachment to their teachers also contributed positively, with a 0.135-point increase in *growth mindset* scores for every one point of increased teacher engagement.

The findings of this study clearly show that students' cultural values are the primary foundation in shaping *a growth mindset*. One example is the principle of *"Manut lan Miturut"* in Javanese culture, which means obedience and obedience. This concept emphasizes the importance of obedience, compliance, and respect for older or authoritative figures, especially teachers.

Obedience and compliance are seen in the attitude of students who avoid direct eye contact and bow their gaze when talking to the teacher (Abbott, 2017). However, the extreme interpretation of *obedience and compliance* can be challenging. Lowering your head and avoiding excessive eye contact can hinder students' confidence development and ability to convey ideas firmly and later in life. This contradicts the principle of a *growth mindset* that encourages students to develop confidence in their learning abilities, overcome challenges, and voice their thoughts (Teng et al., 2024). In addition to cultural values, family (parent) support (Đurišić & Bunijevac, 2017; Fan & Chen, 2001) and the active role of teachers in schools also have a substantial impact on developing *students*' growth mindsets(Rowe & Leech, 2019; Vestad & Bru, 2023) The combination of supportive cultural values, family guidance, and the proactive role of teachers is essential to fostering a growth mindset in students (Liu et al., 2024).

Description and Meaning of Educators Related to Factors Affecting the Growth Mindset of High School Students

Qualitative analysis through narrative interviews with 24 educators (18 Guidance and counselling Teachers, 4 Principals, and 2 Vice Principals) from 18 high schools in Surakarta revealed five main themes that illustrate a deep understanding of the factors that affect students' growth mindsets. The first theme is intrinsic motivation, the main driver, where educators identify passion and deep interest as the primary key. Mrs. SI (Teacher) explained *that "when children find their passion, for example, in biology, they not only study but also have ambitious goals such as participating in the Olympics or studying abroad, all of it comes from curiosity and a willingness to know more."* This is reinforced by Mrs. IN who concluded that *"the key words are love to learn and curiosity about knowledge."*

Intrinsic motivation is the primary driver in the context of a growth mindset(S. Chen et al., 2023). Individuals with *a growth mindset* see challenges as opportunities to learn and grow, not as threatening obstacles (Dong et al., 2023) Curiosity and *passion* are inherently aligned with the desire to master new things and develop competencies (Sigmundsson et al., 2020) When students have a strong internal drive, they tend to be more persistent in the face of adversity and perceive effort as a path to mastery, not just evidence of deficiency (Frontini et al., 2021). This is in line with connectedness as a basic psychological need that underpins intrinsic motivation and, in turn, supports the development of *a growth mindset*.

The second theme relates to the importance of clear life goals as a student's guide. Mrs. FI said*, "Students with clear goals, such as entering medicine through invitation, show high consistency, even if they choose competitions that can support report card scores."* Mr. WA (Vice Principal) reinforced this view by stating, *"students with a clear purpose in life will continue to develop under any conditions, who have no purpose, are difficult to be influenced even if they are given advice."* This clarity of vision of the future provides direction and ongoing motivation for students to develop their abilities.

A clear goal provides students with ongoing direction and motivation as a fundamental aspect of *the growth mindset*. Students have a strong vision of the future; they tend to see challenges and failures as stepping stones toward achieving those goals rather than as the end of things (Lambert et al., 2014). This is a key characteristic of individuals with *a growth mindset* who see effort as an integral part of the learning and achievement process (Campbell et al., 2020). Students with goals tend to be more proactive in finding learning strategies and receiving feedback to improve themselves.

The third theme reveals the ambivalent influence of cultural and family values on students' growth mindsets. Educators report that there is still a cultural stigma that hinders, as conveyed by

Mrs. SA (Teacher)*: "There are still stigmas such as 'do not go to high school' or 'high school graduates immediately work or get married', this creates a clash between growth mindset and conservative values."* The conflict between students' passions and parents' expectations is also a significant issue, where Mrs. SI shared her experience that *"there is often a conflict between students' passions and parents' expectations, students are forced to take majors that do not suit their interests."* However, effective communication can change this situation; Mrs. SI explained, *"communication with parents, supported by student achievement data, can help parents support children's choice of interests."*

This theme highlights the interaction between cultures, the social environment, and the psychology of individuals. Although a growth mindset encourages the exploration and development of maximum potential, conservative cultural values or rigid family expectations can limit students' ambitions and create a fixed mindset related to their roles or limits (Munawaroh et al., 2021). If students feel that their abilities or life paths are already "determined" by social norms or family expectations, the drive to grow and overcome challenges will be reduced (Surata et al., 2025). However, these findings also offer a solution: effective communication with parents, supported by student achievement data, can help change parents' perspectives and encourage support for students' choice of interests (Gniewosz & Noack, 2012). This shows that cultural values and family expectations are not absolute barriers but areas that require dialogue and understanding to achieve alignment that supports the growth mindset (Suryandai et al., 2022).

The fourth theme highlights the strategic role of teachers and schools in shaping a growth mindset. Mr. WA applies a narrative-based motivation strategy by *"inserting inspirational stories about alumni to awaken students' awareness of their life goals, the effect is extraordinary to motivate."* Mrs. RI (Principal) added that *"engaged teachers can see the potential of students that even the students themselves do not know, we help them find their strengths."*

Teachers and schools are key socialization agents in shaping students' mindsets. A learning environment that supports a growth mindset is characterized by an emphasis on effort, learning processes, and constructive feedback (Carroll et al., 2023). Strategies such as telling alums success stories can provide inspiring role models and show that success comes from perseverance and adaptation (Du et al., 2021). In addition, teachers who are engaged and able to identify students' hidden potentials and then help them develop them directly foster confidence in the ability to grow the core of the growth mindset (Zeng et al., 2019). This aligns with the principle that teachers must be facilitators, not just conveyors of information, to encourage students' exploration and confidence (Morgan et al., 2024).

The fifth theme identifies the influence of the social environment and peer support, where Mrs. DI (Teacher) observed that *"children who hang out with friends who have a growth mindset tend to be motivated; on the other hand, those who get along with those who are lazy also decrease."*. The social environment plays a massive role in the formation of mindsets. Social learning theory explains that individuals learn through observation and imitation of the behavior of others (Bandura, 2011). When students interact with peers who exhibit growth mindset characteristics (e.g., perseverance, enthusiasm for learning, acceptance of challenges), they tend to imitate those behaviors and internalize the same mindset (Yeager & Dweck, 2012). On the other hand, an environment with peers with a fixed mindset or lack of motivation can transmit this attitude. Therefore, creating a positive school environment and promoting student interaction that supports a growth mindset is an important strategy.

Integration of Pattern Elaboration Understanding and Significant Relationships Between Factors

Integrating quantitative and qualitative findings results in a comprehensive understanding of the complex mechanisms that shape the growth mindset of high school students. The dominance of cultural values as the strongest predictor (β = 0.400) was confirmed and elaborated in depth from qualitative data that revealed the dynamics of conflict between traditional and modern values. The educators explain that the statistical power of cultural values reflects students' internal struggles between limiting cultural heritage *("do not go to high school")* and modern aspirations that drive high achievement. The transformation of cultural values requires systematic intervention involving all education stakeholders.

The influence of parental involvement (β = 0.203) was explained through dynamic and contextual support mechanisms. Qualitative data reveal that parental involvement is not always positive, depending on the quality of communication and the compatibility between expectations and students' interests. The process of transforming parents' perspectives through effective communication with teachers and the presentation of student achievement data is key in optimizing family support. The conflict between students' passions and parents' expectations can be overcome through a collaborative approach that involves teachers as mediators.

The contribution of Teacher engagement (β = 0.154), although statistically the smallest, has a strategic role revealed through qualitative data. Teachers act as catalysts that activate and maintain a growth mindset through diverse pedagogical strategies, including inspirational narratives, identifying students' hidden potential, and creating a supportive learning environment. The role of teachers as role models and facilitators of communication with parents is a crucial element in the growth mindset development ecosystem.

Based on comprehensive integration, this research produces an ecosystem model of growth mindset consisting of five interrelated components: the foundation of cultural values as the strongest base, constructive family support, school facilitation through the role of teachers, internal motivation in the form of passion and life goals, and social support from peers and school culture. According to the social cognitive theoretical framework, the growth mindset is an ecosystem. It cannot be explained by a single factor but rather by a complex interaction between personal, behavioral, and environmental factors. Cultural values are the most effective leverage point for intervention, while alignment between factors creates optimal conditions for developing a growth mindset. These findings contribute to the theoretical understanding of the growth mindset in Indonesia's collective culture and provide practical implications for the development of holistic education programs involving all stakeholders.

Meta Inference

This mixed-method study revealed the complexity of a growth mindset through the lens of Bandura's cognitive, social theory, where triadic interactions between personal, behavioral, and environmental factors form patterns that are not detected through a single approach. Integrating quantitative and qualitative data resulted in paradoxical findings that shifted the conceptual understanding of the growth mindset from an individualistic perspective to a contextual ecosystem model (Xu & Xu, 2024).

Key findings show that cultural values as the strongest predictor (β = 0.400) reveal students' ability to negotiate conflicts between traditional limiting values and modern aspirations that drive achievement. This shows that the growth mindset in the Indonesian context is not just a belief in the ability to develop but a meta-cognitive ability to transform value conflicts into cognitive resilience (Abbott, 2017). This finding also aligns with previous research (He & Zhang, 2024), which emphasizes that the Western concept of a growth mindset must be adapted to local culture to be

effective. Both studies emphasize the importance of cultural context in understanding *the growth mindset*. The role of parental and teacher involvement serves as a mediator and reinforcer, creating optimal conditions for this transformation process. This is in line with previous research (Fan & Chen, 2001; Kantova, 2024), which shows that active support from parents and teachers has a significant influence on the development of academic achievement and students' mindsets.

The social-cognitive approach allows the identification that the growth mindset is an emergent property of complex adaptive systems rather than a linear result of separate factors (J. A. Chen & Tutwiler, 2017). The role of teachers, which is statistically least statistically but qualitatively strategic, shows that influence in the social cognitive context is multiplicative teachers activate and amplify the potential of other factors by facilitating communication and interpreting cultural values. This investigation resulted in an "individuation in collectivity" model that describes a growth mindset as the ability to thrive while remaining connected to communal values. These findings have theoretical implications in extending Dweck's concept of growth mindset to the context of collective culture and practical implications for developing interventions based on transforming cultural values and strengthening a holistic social support ecosystem.

However, this study has limitations. The focus on a single region (Surakarta) and a specific population of high school students may limit the generalizability of the findings. Furthermore, the quantitative data mainly collected relied on self-reports, which are susceptible to bias. Future research should expand the sample scope to various regions in Indonesia to enhance the generalizability of the findings. To reduce self-report bias, it is recommended to use a combination of diverse data collection methods, such as questionnaires, observations, and in-depth interviews. Additionally, researchers can explore other cultural factors that influence a growth mindset to build a more comprehensive theoretical model, thereby providing a richer understanding of this phenomenon amid Indonesia's cultural diversity

CONCLUSION

This study successfully investigated the *growth mindset factors of* high school students in Surakarta through a comprehensive *mixed-method* approach. Quantitative results show a significant linear relationship between cultural values, parental involvement, and Teacher engagement to *students' growth mindsets*, where cultural values are the strongest predictors. Qualitative results enrich understanding by revealing intrinsic motivations, life goals, ambivalent influences of cultural and family values, the role of teachers and schools, and social environment support as factors influencing *a growth mindset*. The integration of these two approaches results in an understanding that *the growth mindset* is ecosystemic; it arises from the complex interaction between personal, behavioral, and environmental factors. Cultural values play an important role in negotiating value conflicts into cognitive resilience. In contrast, parental involvement, and the strategic role of teachers (although statistically the smallest but multiplied) become mediators and reinforcers. The "individuation in collectivity" model refers to a model or perspective of *a growth mindset* in which individuals can develop themselves personally (individuation). However, this self-development process remains closely connected to the values and norms of the group or society in which the individual is located (collectivity). This concept provides important implications for developing holistic educational interventions in the Indonesian cultural context.

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Conflicts of Interest

"The authors declare no conflict of interest."

Author Contributions Statement

MI and A conceived the idea and designed the methodology. MI conducted the quantitative data collection and analysis. CT performed the qualitative data collection and analysis. NR, A and NB integrated the findings and drafted the original manuscript. All authors reviewed and approved the final version of the manuscript.

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