Exploring Thai Undergraduate Students' Language Mindsets: A Survey Analysis

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Received April 16, 2024; revised; June 9, 2024; accepted June 10, 2024

Abstract

This study investigates the language mindsets of undergraduate students in Thailand. The research involved a sample of 400 undergraduates in the northern region of Thailand. Data collection utilized a survey based on Lou and Noel's language mindset meaning system. The survey was developed by the researchers and comprised 30 items rated on a 6-point Likert scale and organized into 6 dimensions. Analysis employed descriptive statistics, focusing on means and standard deviations. The study revealed that among the 400 participants, the evolving growth language mindset was the most prevalent category, with 46.25% of individuals demonstrating a greater openness to adaptability in language learning. Significant differences in language mindset levels were found across years of study and university affiliations. In the dimensions of "belief in failure or mistakes" and "belief in strategies for learning English", most participants exhibited an expanding growth mindset. Contrastingly, in the dimensions of "motivational belief" and "perception of ability and potential", most participants aligned with the restricted fixed mindset category. These results underscore the multidimensional nature of language mindsets and the importance of tailoring interventions to address specific dimensions, years of study, and university contexts. By fostering a growth mindset across all dimensions through targeted interventions and supportive classroom environments, educators can enhance Thai undergraduate students' language learning experiences and equip them to thrive in their language acquisition journey.

Keywords: language learning attitudes, growth language mindset, language mindset survey, English learning behaviors, adaptability in language acquisition

Language learning encompasses a complex interplay of various factors, with individuals' beliefs and attitudes toward language acquisition standing out as pivotal influencers (Horwitz, 1988; Mercer & Ryan, 2010). Among these factors, language mindset emerges as a fundamental determinant that shapes learners' experiences and outcomes in language learning endeavors (Lou & Noels, 2023; Shirvan et al., 2023). Indeed, understanding individuals' language mindsets can give us key insights into learners' levels of motivation, use of learning strategies, and achievement (or not) of language learning outcomes, as evidenced by various research studies (Herawati & Fithriani, 2023; Huang, 2023; Krataytong & Saleemad, 2023; Rissanen & Kuusisto, 2023) Shirvan et al. (2023). Moreover, language mindsets influence learners' beliefs about the malleability of language skills, impacting their perseverance through challenges and their receptiveness to feedback. Thus, by recognizing the impact of language mindsets, educators can tailor instructional strategies to promote growth mindsets, policymakers can shape curriculum and assessment practices to support mindset development, and researchers can explore interventions to cultivate growth mindsets, collectively enhancing language learning environments and fostering learners' linguistic development.

Previous studies on language learning mindsets have utilized scales such as those developed by Lou and Noels (2017) (e.g. Chuanon et al. (2021)) or adapted from Dweck's (2006) mindset scales, (e.g. Wilang (2021)) which have demonstrated their effectiveness in capturing language mindsets and their impact on language learning outcomes in various contexts (Claro et al., 2016; Lou & Noels, 2019b, 2020a; Yeager et al., 2019). However, it is our belief that existing studies have not fully captured the nuances of language mindsets as conceptualized in Lou and Noel's (2017) language mindset meaning system, which encompasses six interrelated dimensions that contribute to language learning: (1) attribution, (2) self-regulatory tendency in the face of adversity, (3) failure/mistake mindsets, (4) effort beliefs, (5) achievement goals, and (6) competence-based emotional tendency in the face of

adversity. Each dimension is further divided into fixed-oriented and growth-oriented subsystems, reflecting the complex and multifaceted nature of language mindsets. To date, no research has developed an instrument to measure language mindsets based on these six dimensions.

Moreover, despite a growing body of empirical studies on students' language mindsets in the realm of English as a Foreign Language (EFL), there remains a need for more comprehensive investigations in the Thai educational context. Specifically, to the best of our knowledge, there is only one study to date (Chuanon et al., 2021) that has explored the multidimensional nature of language mindsets and their implications for EFL education in Thailand. Chuanon et al. (2021) investigated the language mindsets of Thai EFL university students using the LMI and found that participants held mixed language mindsets, combining fixed and growth elements, across GLB, L2B, and ASB categories, with no significant differences based on age or year of study. While these findings provide a general understanding of Thai EFL university students' beliefs about the role of talent and effort in language learning, they do not offer specific insights that can be directly translated into strategies for fostering growth mindsets. To effectively support a growth mindset, further research is necessary to identify specific factors, teaching methods, and learning environments that stimulate growth-oriented beliefs and behaviors, considering the context of language learning in Thailand.

Recognizing these issues, the present study designed a comprehensive language mindset survey instrument based on Lou and Noel's (2017) language mindset meaning system and administered it to Thai university students. We sought to explore their perspectives through two distinct lenses: a holistic view and an analytical view. The holistic approach aimed to gain a comprehensive understanding of the students' overall language mindsets, encompassing their beliefs, attitudes, and perceptions towards language learning as an integrated concept. Complementing the holistic view, the analytical approach delved into the nuanced components and dimensions of their language mindsets, as conceptualized by Lou and Noel's (2017) language mindset meaning system. By exploring language mindsets in this way, this research seeks to uncover valuable insights into how Thai learners attribute success and failure, regulate their learning, view effort and

challenges, set goals, and respond emotionally to setbacks in their language learning journey. The findings of this study have the potential to contribute to a more nuanced understanding of language mindsets in the Thai educational context and provide actionable recommendations for fostering growth mindsets and enhancing language learning outcomes. Drawing upon this theoretical framework, the researchers formulated the following hypotheses:

1. Thai undergraduate students will exhibit varying degrees of fixed and growth mindsets across the six dimensions of the language mindset meaning system.

2. Students with a predominantly growth mindset will demonstrate more adaptive attribution patterns, self-regulatory tendencies, failure/mistake mindsets, effort beliefs, achievement goals, and competence-based emotional tendencies compared to those with a predominantly fixed mindset.

3. The analytical approach, examining the six dimensions of language mindsets, will reveal nuanced patterns and relationships that may not be apparent through a holistic view alone.

4. The findings will provide valuable insights into the language mindsets of Thai undergraduate students, informing the development of targeted interventions and educational practices to foster growth mindsets and enhance language learning outcomes.

Literature Review

Language Mindset

The concept of language mindset has its roots in the work of Carol Dweck, who introduced the idea of fixed and growth mindsets in the context of general learning abilities (Dweck, 2006). Dweck's research has shown how individuals with a growth mindset believe that their abilities can be developed through effort and learning, and that they tend to embrace challenges, persist in the face of setbacks, and ultimately achieve more than those with a fixed mindset, who believe that their abilities are static and unchangeable (Dweck, 2006, 2012). This distinction between fixed and growth mindsets has important implications for learners' motivation, resilience, and overall approach to learning.

In the context of language learning, several researchers have applied and extended Dweck's mindset theory. Mercer and Ryan (2010) were among the first to explore the role of mindsets in language learning, proposing a framework that distinguishes between fixed and growth language learning mindsets. Mercer and Ryan (2010) delineate two categories of language mindsets: fixed language mindsets and growth language mindsets. Learners with a fixed language mindset believe that their language learning ability is a static, innate trait that cannot be significantly altered through effort or practice. They tend to attribute their successes and failures to inherent talent or lack thereof, and may be more easily discouraged by setbacks or challenges in the language learning process (Mercer & Ryan, 2010). In contrast, learners with a growth language mindset view their language learning ability as a malleable skill that can be developed and improved through dedication, effort, and the application of effective learning strategies. They are more likely to embrace challenges as opportunities for growth, persist in the face of difficulties, and seek out feedback to enhance their learning (Mercer & Ryan, 2010).

Building upon this foundation, (Lou & Noels, 2019b) developed a language mindset meaning system that encompasses six interrelated dimensions: (1) attribution, (2) self-regulatory tendency in the face of adversity, (3) failure/mistake mindsets, (4) effort beliefs, (5) achievement goals, and (6) competence-based emotional tendency in the face of adversity. While these dimensions are grounded in Dweck's (2006) general mindset theory, they are specifically adapted to the context of language learning. The first five dimensions of the language mindset meaning system closely align with key components of Dweck's general mindset theory, such as beliefs about the causes of success and failure, responses to challenges and setbacks, the role of effort in skill development, and learning goals. However, the sixth dimension, "competence-based emotional tendency in the face of adversity," represents a notable departure from Dweck's framework. While Dweck's theory emphasizes the role of others' successes as a source of inspiration or threat, depending on one's mindset, Lou and Noels' sixth dimension focuses specifically on language learners' emotional responses, such as confidence and anxiety, when facing challenges in language learning.

This adaptation highlights the unique emotional experiences that learners may encounter in the context of language acquisition.

The review of empirical research on language mindsets reveals several key dimensions and findings. Methodologically, studies have employed various approaches, such as reading articles to influence mindsets, quantitative surveys, and Q methodology, to gain deeper insights into learners' complex mindsets (Nguyen, 2023; Noels & Lou, 2015; Santa et al., 2021; Viña et al., 2022). In terms of the relationships between language mindsets and learning variables, research has consistently found positive associations between growth mindsets and desirable outcomes, such as self-regulated learning, academic engagement, learning goals, and academic achievement (Bai et al., 2020; Eren & Rakıcıoğlu-Söylemez, 2020; Sadeghi et al., 2021). Learners with growth language mindsets demonstrate adaptive learning behaviors, including setting mastery goals, exerting higher levels of effort and persistence, and responding more constructively to challenges, compared to those with fixed mindsets (Lou et al., 2021a; Lou & Noels, 2019b; Rattan et al., 2015; Yao et al., 2021).

Moreover, language mindsets have been shown to predict learners' emotional and behavioral responses, with growth mindsets linked to lower anxiety, more positive emotions, and greater willingness to communicate in the target language (Ozdemir & Papi, 2021; Wang et al., 2021). Beyond the classroom, studies have explored the role of language mindsets in cross-cultural adaptation, suggesting that growth mindsets foster flexibility and resilience in navigating new sociocultural contexts (Lou & Noels, 2019c, 2020b). Recognizing the significance of these findings, researchers have emphasized the importance of promoting growth language mindsets in foreign and second language education, as they organize various motivational factors and guide learners' responses across different situations (Lou & Noels, 2019a). However, despite the growing body of research, there remains a need for more studies examining actual behaviors, particularly in interactional contexts, to better understand how mindsets shape classroom dynamics and social interactions among language learners (Sato, 2022).

In the Thai context, language mindset research has been conducted from various perspectives. Studies have focused on developing growth mindset-based instructional models for primary education to

promote self-development in Thai language learning (Krataytong & Saleemad, 2023) and investigating the cultivation of a growth mindset to promote English language learning behaviors and speaking communication success among university students (Janudom, 2023). Additionally, researchers have explored the English language mindsets of engineering students, examining the relationship between perceived English proficiency and growth mindset (Wilang, 2022). Other areas of interest include enhancing teachers' awareness of students' mindsets in EFL learning (Janudom, 2021), investigating the mindsets of high school students in learning English (Wilang, 2021), and exploring Thai university students' language learning mindsets in English as a Foreign Language using the Language Learning Mindset Survey (Chuanon et al., 2021). Furthermore, the effects of growth mindset training on first-year Thai engineering students have been studied (Vasuratna, 2017). These diverse perspectives contribute to a comprehensive understanding of language mindset in the Thai educational context.

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Most studies in the Thai context have primarily utilized Dweck's (2006) general mindset framework, unidimensional scale, or Lou and Noels' Language Mindset Index (LMI), which covers beliefs about general language intelligence, second language aptitude, and age sensitivity, to investigate language mindsets. While these frameworks have provided valuable insights, there is an opportunity to explore language mindsets through alternative theoretical lenses, such as Lou and Noels' language mindset meaning system. This framework delves into the intricate connections between language mindsets, motivation, and meaning-making in language learning contexts, playing a crucial role in understanding how individuals' beliefs about the flexibility of language abilities impact their motivation and behaviors in language learning. This approach may offer a fresh perspective on the unique dimensions of language mindsets in the Thai context.

Moreover, research findings indicate that Thai students often lack confidence in using English (e.g. Ling & Poopatwiboon (2023); Nuemaihom et al. (2018), with factors such as speaking anxiety, fear of making errors, limited vocabulary knowledge, and phonological difficulties in pronouncing English consonant sounds contributing to this lack of confidence. Ozdemir and Papi (2021) examined language mindsets as sources of language anxiety and L2 self-confidence, reporting that fixed mindsets positively predict language anxiety, while growth mindsets predict L2 self-confidence.

Overall, the current study contributes to the existing knowledge on the relationship between language mindsets and psychological aspects of language learning. Zarrinabadi et al. (2021) hypothesize that growth mindsets are important for learners' anxiety, enjoyment, and self-beliefs because they support learners' adaptability. Their results demonstrate that growth mindsets positively predict enjoyment and beliefs about self, while fixed mindsets negatively predict emotions, self-concept, and self-efficacy. They argue that cultivating growth mindsets could potentially improve learners' self-perceptions and emotions. Given these challenges faced by Thai EFL learners, it would be valuable to explore their language mindsets using the language mindset meaning system framework, which may provide insights into the unique dimensions of language mindsets in the Thai context.

Ultimately, exploring language mindsets across all six dimensions proposed by Lou and Noels (2019a) among Thai university students is crucial, as it may provide a more comprehensive understanding of the specific dimensions influencing language learning. The findings from this study will provide valuable information for teachers and curriculum developers, guiding them in designing learning activities and curricula that promote growth mindsets and beneficial language learning beliefs.

Research Methodology

Participants

A sample of 400 undergraduate students from 1st to 5th year, studying in the Scientific and Social Science clusters across 5 universities in Northern Thailand, was determined utilizing the Taro Yamane table. Convenience sampling facilitated recruitment of a sufficient sample across varied academic years and disciplines.

Participant Overview

As shown in Table 1, most study participants were female students, accounting for 76.0%, while male students represented a significantly smaller proportion. In terms of academic progression, first-year students constituted the largest group at 61.8%, followed by second-year students at 24.5%. The representation of students in later years of study was comparatively lower, with 10.8% in the third year, 2.5% in the fourth year, and a mere 0.5% in the fifth year. The distribution of participants across academic disciplines was also skewed, with 81.5% belonging to the cluster of social science faculties and 18.5% from the cluster of scientific faculties.

Regarding university affiliation, University A had the highest representation at 41.3%, followed by University D (20.8%), University E (19.3%), University C (16.3%), and University B (2.5%). (The university names have been replaced with placeholders by the researchers.)

Table 1
Demographic Data (n = 400)

Demographic Data		*n*	Percent
Gender	Male	96	24.0
	Female	304	76.0
Year	1	247	61.8
	2	98	24.5
	3	43	10.8
	4	10	2.5
	5	2	0.5
Faculty	Cluster of Scientific Faculties	74	18.5
	Cluster of Social Science Faculties	326	81.5
University	A	165	41.3
	B	10	2.5
	C	65	16.3
	D	83	20.8
	E	77	19.3

Instrument

The Dweck Mindset Instrument, a 16-item scale, assesses whether a student holds a fixed or growth mindset using a 6-point Likert scale. However, it does not differentiate between specific dimensions of mindset. In contrast, the Language Mindset Inventory (LMI) developed by Lou and Noels (2017), based on Dweck's implicit theory of intelligence scale, is divided into three categories: general language intelligence beliefs (GLB), second language aptitude beliefs (L2B), and age sensitivity beliefs (ASB). While the LMI provides insights into specific mindset types, most studies using this inventory focus on exploring relationships with demographic data, which may not be specific enough to inform the development of teaching and learning practices that effectively promote growth mindsets.

The dimensions of Lou and Noels' (2019) language mindset meaning system were selected as the basis for designing language mindset scale because they offer a comprehensive and multidimensional framework for understanding language mindsets. This framework

encompasses six interrelated dimensions that contribute to language learning: attribution, self-regulatory tendency, failure/mistake mindsets, effort beliefs, achievement goals, and competence-based emotional tendency. Using Lou and Noels' (2019) framework offers several methodological advantages, including a more in-depth examination of language mindsets compared to unidimensional scales, the identification of specific areas where fixed or growth mindsets may be more prevalent, and the ability to compare and integrate findings with existing research on language mindsets.

The survey has 30 items across 6 dimensions, reflecting the different facets of language mindsets as proposed in Lou and Noel's framework. The rating scale is a 6-point scale ranging from 1 to 6, with 1 indicating the lowest level of agreement and 6 indicating the highest level of agreement with each statement. The survey was translated into the Thai to to enhance comprehension. The scores results were summarized based on criteria adapted from the scoring method of Dweck's Mindset Scale (Mindsetworks, 2016), which provides a well-established and detailed scoring rubric that categorizes scores into multiple distinct mindset levels.

After creating the research instruments rooted in the growth language mindset dimensions outlined by Lou and Noels (2019b), these instruments underwent validation by five field experts. The validation process aimed to ensure both the content and construct validity using an index of item-objective congruence (IOC). Experts rated the instrument's appropriateness, with all items receiving a score above 0.6.

The confirmatory factor analysis results provide strong evidence for the validity and reliability of the assessment instrument. The model demonstrates a good fit with the empirical data, as indicated by the Chi-Square value (326.25, $df = 290$, $p > .05$), Relative Chi-Square ($1.13 < 2$), and other fit indices ($GFI, NFI, TLI, CFI > 0.90$; $RMSEA < 0.05$; $RMR < 0.08$). All 30 assessment items have factor loadings greater than .50. The instrument's reliability is high, with a value of 0.95 and corrected item-total correlations ranging from 0.949 to 0.953. These findings support the suitability of the assessment instrument for use in the given context, demonstrating its strong psychometric properties.

Data Collection and Data Analysis

Demographic data such as gender, current year of study, faculty, and university affiliation were collected to provide a comprehensive overview of the sample's composition, presented as percentages. Subsequently, mean and standard deviation measures were employed to analyze the data gathered from the language mindset scale.

To address this research aim, a comprehensive and thorough inquiry was conducted to delve into the language mindsets held by Thai undergraduate students. Acknowledging the potential advantages of nurturing a growth language mindset, their viewpoints and perspectives were meticulously examined through two distinct approaches: a holistic, overarching lens and an analytical, granular lens. The researchers can elucidate these approaches as follows.

Following the completion of the questionnaire, the researchers evaluated each participant's score against predefined scoring criteria, with a maximum score of 180 points. Participants were categorized based on the criteria they met, which ranged from F1 to F5 representing fixed language mindsets and G1 to G5 representing growth language mindsets. These criteria were further grouped into five levels: immutable (F5 to F4), restricted (F3 to F2), evolving (F2 to G2), expanding (G2 to G3), and dynamic (G4 to G5). Subsequently, the researchers calculated the median score for each of these five groups to determine the mean value within each group.

Results

Growth Language Mindset

The results obtained from the survey indicate that a slight majority of participants exhibited a growth language mindset, while the remainder held a fixed language mindset, as shown in Table 2.

Table 2
Distribution of Language Mindset Categories (n = 400)

Category	*n*	*M*	*SD*
Fixed Language Mindset	41.25%	88.76	13.88
Growth Language Mindset	58.75%	128.97	16.20

However, the large standard deviations observed for both the fixed (*SD* = 13.88) and growth (*SD* = 16.20) mindset groups. The researchers therefore conducted further analysis on the student groups exhibiting fixed and growth language mindsets, based on demographic data.

Table 3
Language Mindset Category Distribution by Gender (n = 400)

Category	Gender	n	*M*	*SD*	*t*	*p*
Fixed	Male	21.2%	91.46	12.31	1.30	.20
	Female	78.8	88.03	14.23		
Growth	Male	26%	128.98	14.11	.01	.94
	Female	74%	128.97	16.90		

As shown in Table 3, the analysis of data using independent samples t-test to compare the mean total scores between male and female students within the fixed language mindset ($t(163) = 1.30$, $p = .20$) and growth language mindset groups ($t(233) = .01$, $p = .94$) revealed no statistically significant differences in mean scores between genders in each mindset group.

Table 4
Language Mindset Category Distribution by Faculty (n = 400)

Category	Faculty	n	*M*	*SD*	*t*	*p*
Fixed	Cluster of Scientific Faculties	18.18%	91.43	10.97	1.17	.24
	Cluster of Social Science Faculties	81.82%	88.16	14.42		
Growth	Cluster of Scientific Faculties	18.72%	124.73	15.97	1.94	.054
	Cluster of Social Science Faculties	81.28%	129.95	16.13		

As shown in Table 4, a comparative study of the mean scores of language mindset between the clusters of scientific and social science faculties using t-test showed no statistically significant differences in the mean scores of fixed language mindset ($t(163) = 1.17$, $p = .24$) and growth language mindset ($t(233) = 1.94$, $p = .054$) between the two faculty clusters, even though the p-value for growth language mindset was close to the significance level of .05. Thus, it can be inferred that students in both scientific and social science faculties have similar levels of fixed and growth language mindset, with no statistically significant differences.

For the analysis of students' year of study illustrated in Table 5, the researcher combined the 4th and 5th year students together because when separating the groups, there were less than 2 students in the 5th year, making it impossible to analyze them as a separate group. Since the 4th and 5th years are proximate, they were combined for the purpose of analysis. The analysis indicates a statistically significant difference in the growth mindset category across the different years of study ($F(3, 231) = 3.46$, $p = .02$). This suggests that there is variation in the growth mindset scores among the different year groups.

Table 5

Language Mindset Category Distribution by Study Year (n = 400)

Category	Year of Study	n	*M*	*SD*	*F*	*p*
Fixed	1	57.6%	90.61	12.85	1.55	.20
	2	29.1%	85.79	15.79		
	3	9.7%	86.00	13.34		
	4 & 5	3.6%	90.50	12.71		
	Total	100%	88.76	13.88		
Growth	1	64.7%	131.26	16.58	3.46	.02
	2	21.3%	123.04	14.53		
	3	11.5%	127.52	15.42		
	4 & 5	2.6%	126.83	11.67		
	Total	100%	128.97	16.20		

From the post-hoc pairwise comparison analysis, only the significant difference in the growth mindset group is presented: First-year students had a significantly higher mean growth mindset score compared to second-year students ($MD = 8.22$, $SD = 2.60$, $p < 0.05$).

Table 6

Language Mindset Category Distribution by University (n = 400)

Category	University	n	*M*	*SD*	*F*	*p*
Fixed	A	38.8%	14.32	1.79	3.36	.01
	B	2.4%	2.52	1.26		
	C	15.2%	10.32	2.07		
	D	29.7%	14.15	2.02		
	E	13.9%	13.37	2.79		
	Total	100%	13.88	1.08		
Growth	A	43.0%	15.00	1.49	6.06	<.001
	B	2.6%	14.14	5.77		
	C	17.0%	12.84	2.03		
	D	14.5%	16.93	2.90		
	E	23.0%	17.45	2.38		
	Total	100%	16.20	1.06		

As shown in Table 6, the analysis of data comparing the mean total scores among different universities within the fixed ($F(4, 160) = 3.36$, $p = .01$) and growth ($F(4, 230) = 6.06$, $p < .001$) language mindset groups revealed statistically significant differences in language mindset groups across universities. In the fixed mindset group, University E had a significantly higher mean score compared to other universities, while University B had a significantly lower mean score than University A. In the growth mindset group, University C had a significantly higher mean score than other universities, while University B and University A had lower mean scores than University B and University E, respectively.

The post hoc test results indicated significant differences in mean language mindset scores between certain universities. In the fixed mindset group, University C had a significantly higher mean score than University D ($MD = 11.38$, $p = .02$). In the growth mindset

group, University E had significantly higher mean scores than both University A (*MD* = 12.37, $p < .001$) and University D (*MD* = 11.03, $p = .04$).

Figure 1 illustrates the distribution of undergraduate students' language mindset scores, categorized into two main groups: fixed and growth mindsets, each further divided into five levels (F1-F5 for fixed mindsets and G1-G5 for growth mindsets).

Figure 1

Percentage of Undergraduates' Language Mindset Scores (n = 400)

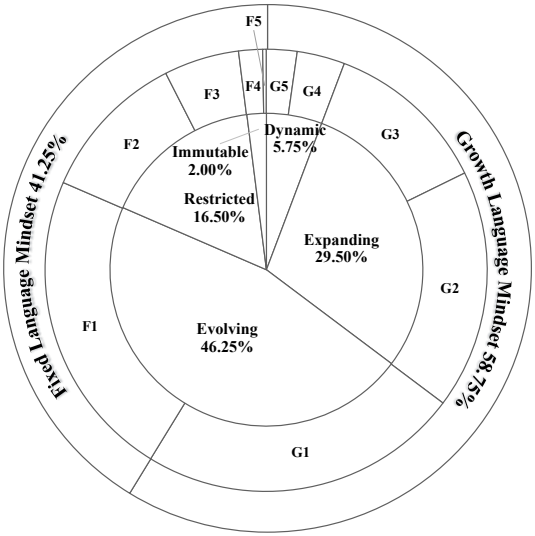

Figure 1 shows that the the majority of students fall into the F1 and G1 levels, classified as the "evolving" level, which represents a mindset open to growth and development in language learning. Students at this level recognize the potential for improvement, actively seek opportunities to enhance their language skills, and believe in the power of effort, persistence, and effective strategies to foster language proficiency over time.

To further examine the distribution of language mindset levels among undergraduate students, Table 7 presents a detailed breakdown of the five categories: immutable, restricted, evolving, expanding, and dynamic. The table includes the percentage of students in each category, along with the mean and standard deviation of their language mindset scores. This categorization provides a more granular view of the students' mindsets, complementing the broader fixed and growth mindset classification shown in the pie chart. Notably, the table reveals that the largest proportion of students (46.25%) fall into the evolving category, which aligns with the predominant F1 and G1 levels in the pie chart, representing a mindset open to growth and development in language learning. Conversely, the immutable category, representing a fixed language mindset, comprised a small but notable portion of the sample (2%).

Table 7

Percentage of Participants who Hold the Score in Each Category (n = 400)

Language Mindset Categorization	n	*M*	*SD*
Immutable	2%	53.63	7.03
Restricted	16.5%	79.42	8.76
Evolving	46.25%	106.65	9.06
Expanding	29.5%	134.03	8.84
Dynamic	5.75%	162.39	9.36

Language Mindset Trends Across Dimensions

To gain a deeper understanding of the differences between fixed and growth mindsets across various dimensions of language learning, a study was conducted to compare the mean scores of individuals with fixed and growth mindsets in six key areas: positive effort belief, motivational belief, participation in language activities, belief in failure or mistakes, belief in strategies for learning English, and perception of ability and potential.

Table 8
Distribution of Language Mindset Dimensions (n = 400)

Language Mindset Dimension	Mindset Group	n	*M*	*SD*	*t*	*p*
1. Positive Effort Belief	Fixed	195	15.88	2.74	-26.78	<.001
	Growth	205	20.80	2.41		
2. Motivational Belief	Fixed	245	13.83	3.44	-28.11	<.001
	Growth	146	23.16	2.73		
3. Participation in Language Activities	Fixed	265	14.60	3.40	-26.24	<.001
	Growth	135	23.23	2.96		
4. Belief in Failure or Mistakes	Fixed	139	15.39	3.08	-27.64	<.001
	Growth	261	24.26	3.01		
5. Belief in Strategies for Learning English	Fixed	168	15.78	2.87	-27.20	<.001
	Growth	232	23.66	2.85		
6. Perception of Ability and Potential	Fixed	274	13.81	3.40	-26.23	<.001
	Growth	126	22.96	2.86		

As shown in Table 8, the results of the t-test analysis revealed significant differences between the fixed and growth mindset groups across all six dimensions of language mindset. The growth mindset group consistently demonstrated higher mean scores compared to the fixed mindset group.

When examining the distribution of participants across different levels within each dimension, as determined by their mean scores, a more nuanced picture emerges. As shown in the appendix, the dimensions of "belief in failure or mistakes" and "belief in strategies for learning English" were categorized as expanding levels, indicating a higher degree of growth mindset compared to other dimensions. However, the dimension of "perception of ability and potential" exhibited a lower overall mean score (M = 16.69) compared to other dimensions.

Within each dimension, most students fall into the evolving category, except for the dimensions of “Belief in Failure or Mistakes” and “Belief in Strategies for Learning English”, where most students are distributed in the expanding category.

The analysis of the data also reveals several noteworthy findings regarding language learning mindsets. Firstly, the dimension of “Belief in Failure or Mistakes” exhibits the lowest number of respondents (12) in the Immutable level, indicating that a relatively small proportion of learners hold a fixed mindset about learning from failures. In contrast, the dimension of "Perception of Ability and Potential" has the highest number of respondents (52) in the Immutable level, suggesting that a considerable number of learners have a fixed mindset regarding their own language learning abilities and potential. Secondly, the dimensions of “Belief in Failure or Mistakes” and “Belief in Strategies for Learning English” have the highest number of respondents (150 and 142, respectively) in the Expanding level, indicating that a significant proportion of learners possess a growth mindset in these areas. Lastly and contrastingly, in the dimensions of “motivational belief” and “perception of ability and potential”, many participants aligned with the restricted fixed mindset category (132 and 121, respectively).

Discussion

In this section, the researchers present a discussion of the findings in relation to the four hypotheses that were initially proposed.

1. Distribution of Language Mindsets Among Thai Students

The study’s findings revealed a relatively balanced distribution between growth and fixed language mindsets among Thai university students, with 58.75% of students holding a growth mindset and 41.25% holding a fixed mindset. The analysis also highlights the influence of demographic factors on language mindsets, with year of study and university affiliation showing significant differences in mindset levels. Notably, first-year students demonstrated a significantly higher mean growth mindset score compared to second-year students (MD = 8.22, p =.02), suggesting that the year of study plays a role in shaping students’ language mindsets. This difference may be attributed to factors such as exposure to new learning experiences, changes in academic demands,

or shifts in personal goals and motivations as students progress through their university years.

Moreover, the study found significant differences in language mindset levels across different universities. Students from University C exhibited significantly higher mean scores for a fixed mindset compared to University D (MD = 11.38, p = .02). Meanwhile, students from University E displayed significantly higher mean scores for a growth mindset than both University A (MD = 12.37, p < .001) and University D (MD = 11.03, p = .04). These results may reflect the influence of university-specific factors, such as learning environments, educational policies, and organizational culture, on the development of students' fixed and growth language mindsets. For example, universities with curricula that emphasize practical language use, collaborative learning, and formative feedback may foster a growth mindset among their students.

Interestingly, the majority of students in the study (46.25%) fell into the evolving category, representing a mindset open to growth and development in language learning. This category was defined as students who exhibited a mix of fixed and growth mindset beliefs, with a tendency towards a growth orientation. Given the findings indicating that growth language mindset varies according to students' year of study and university affiliation, instructors may need to consider adapting their teaching methods to foster a growth language mindset in a manner appropriate to the learners' academic level and institutional context.

2. Growth Mindset and Adaptive Learning Behaviors

The growth mindset group also exhibited stronger self-regulatory tendencies, as evidenced by their higher scores in the motivational belief dimension (M = 23.16, SD = 2.73) compared to the fixed mindset group (M = 13.83, SD = 3.44). This indicates that students with a growth mindset are more proactive in setting goals, monitoring their progress, and maintaining motivation throughout the language learning process.

Regarding failure and mistake mindsets, the growth mindset group demonstrated a more adaptive perspective, with higher scores in the belief in failure or mistakes dimension (M = 24.26, SD = 3.01) compared to the fixed mindset group (M = 15.39, SD = 3.08). This suggests that students with a growth mindset view failures and mistakes

as opportunities for learning and improvement rather than as indicators of low ability.

The growth mindset group also showcased stronger effort beliefs, as reflected by their higher scores in the belief in strategies for learning English dimension (M = 23.66, SD = 2.85) compared to the fixed mindset group (M = 15.78, SD = 2.87). This finding indicates that students with a growth mindset are more likely to believe in the effectiveness of effort and strategic learning approaches in enhancing their language skills.

In terms of achievement goals, the higher scores of the growth mindset group in the participation in language activities dimension (M = 23.23, SD = 2.96) compared to the fixed mindset group (M = 14.60, SD = 3.40) suggest that students with a growth mindset are more oriented towards mastery goals and actively engage in language learning activities to improve their competence.

Finally, the growth mindset group exhibited more adaptive competence-based emotional tendencies, as evidenced by their higher scores in the perception of ability and potential dimension (M = 22.96, SD = 2.86) compared to the fixed mindset group (M = 13.81, SD = 3.40). This finding indicates that students with a growth mindset maintain a more positive self-concept and experience less anxiety or self-doubt when faced with language learning challenges.

Overall, the results provide compelling evidence that students with a predominantly growth mindset demonstrate more adaptive patterns across attribution, self-regulation, failure/mistake mindsets, effort beliefs, achievement goals, and competence-based emotional tendencies compared to those with a predominantly fixed mindset.

3. Multidimensional Nature of Language Learning Mindsets

The analysis of specific language mindset dimensions revealed nuanced patterns and relationships that may not have been apparent through a holistic view alone. The findings showed that the dimensions of "belief in failure or mistakes" and "belief in strategies for learning English" were categorized as expanding levels, indicating a greater presence of growth mindset beliefs in these domains. This suggests that Thai university students generally hold adaptive beliefs about the role of failures and mistakes in the learning process and recognize the

importance of employing effective strategies to enhance their language skills.

However, the study also found that in the dimensions of "motivational belief" and "perception of ability and potential", most participants aligned with the restricted fixed mindset category. This pattern implies that many Thai university students may hold limiting beliefs about their motivation, self-perception of abilities, and capacity for growth in language learning.

Notably, the finding that participants exhibited fixed mindset tendencies in both the "motivational belief" and "perception of ability and potential" dimensions is concerning. These two areas are closely intertwined, as individuals' beliefs about their inherent abilities and potential for growth can significantly impact their motivation and persistence in pursuing challenging goals like language acquisition.

This observation aligns with previous research in the Thai context, which has highlighted issues related to students' lack of confidence in using English (Ling & Poopatwiboon, 2023; Nuemaihom et al., 2018) and may have less favorable perceptions of their own language abilities and potential for growth (Ozdemir & Papi, 2021; Wilang, 2021; Zarrinabadi et al., 2021). Factors such as traditional teaching methods, limited authentic communication opportunities, and sociocultural influences could contribute to the development of these fixed mindset beliefs.

To address this issue, a multifaceted approach involving targeted interventions and pedagogical strategies is necessary. Educators could focus on promoting autonomy, providing opportunities for goal setting and progress monitoring, and explicitly teaching students about the concept of growth mindset and its relevance to motivation, self-perception, and language learning success.

By cultivating a growth mindset across these critical dimensions, educators can empower Thai university students to develop a resilient mindset that fuels their intrinsic motivation, self-belief, and persistence throughout their language learning journey, ultimately enhancing their potential for growth and achievement.

4. Implications for Educators: Fostering Growth Mindsets

The research findings provide valuable insights into the language mindsets of Thai undergraduate students, revealing significant differences across years of study, university affiliations, and specific mindset dimensions. These results have important implications for educators seeking to cultivate a growth mindset and optimize language acquisition outcomes among this population. By tailoring interventions to address the unique needs and challenges identified in the study, educators can effectively support students in developing a more adaptive and resilient approach to language learning.

1) Tailoring interventions based on year of study and university:

Given the significant differences in language mindsets across years of study and university affiliations, educators should tailor their interventions accordingly. For first-year students, who demonstrated a higher growth mindset, interventions could focus on sustaining and reinforcing this perspective through activities such as goal-setting workshops and peer mentoring programs. In contrast, second-year students may require more targeted support to shift towards a growth mindset, such as reflective exercises that encourage them to reframe challenges as opportunities for learning and growth.

Similarly, universities with higher fixed mindset levels, like University C, could prioritize interventions that challenge these beliefs, such as inviting successful alumni to share their language learning journeys and strategies for overcoming obstacles. On the other hand, universities with stronger growth mindsets, like University E, could focus on maintaining and enhancing these positive attitudes through initiatives such as language learning celebrations that showcase students' progress and achievements.

2) Leveraging the expanding levels of failure and strategy beliefs:

With students' average scores in the failure and strategy belief dimensions falling within the expanding range, educators can capitalize on these positive attitudes to foster a growth mindset. For example, they can incorporate "failure debriefs" into their lessons, where students reflect on their mistakes, identify areas for improvement, and develop

action plans to address them. This normalizes failure as a natural part of the learning process and encourages students to view it as an opportunity for growth.

Additionally, educators can explicitly teach language learning strategies and encourage students to experiment with different techniques to find what works best for them. This could involve providing resources such as strategy checklists or organizing peer-led workshops where students share their most effective strategies with one another.

3) Addressing the restricted levels of perceived ability and motivational beliefs:

The findings indicate that most students hold restricted beliefs in the perceived ability and motivational belief dimensions. To address this, educators can implement interventions that target these specific mindset components. For perceived ability, they can provide opportunities for students to experience mastery and build self-efficacy, such as assigning tasks with graduated difficulty levels and offering targeted feedback that highlights progress and improvement.

To boost motivational beliefs, educators can create a classroom environment that promotes autonomy, competence, and relatedness - the three key factors that drive intrinsic motivation. This could involve giving students choices in their learning activities, providing regular feedback on their progress, and fostering a sense of community through collaborative projects and peer support networks.

4) Fostering a growth mindset across all dimensions:

While the research highlights specific dimensions that require attention, it is crucial for educators to adopt a holistic approach in promoting a growth mindset. They can achieve this by integrating growth mindset principles into their everyday teaching practices and creating a classroom culture that values effort, perseverance, and continuous improvement.

For instance, educators can use language that emphasizes the role of effort and strategies in language acquisition, rather than innate ability. They can also showcase examples of famous language learners or successful students who have overcome challenges through dedication

and practice, reinforcing the idea that language proficiency is a skill that can be developed over time.

Theoretical Implications

The findings of this study align with and extend the existing theoretical frameworks of language mindsets, particularly the work of (Lou & Noels, 2019a). The results provide empirical support for the multidimensional nature of language mindsets, as proposed in Lou and Noel's (2019) language mindset meaning system. The six dimensions of growth language mindset beliefs - positive effort belief, motivational belief, participation in language activities, belief in failure or mistakes, belief in strategies for learning English, and perception of ability and potential - offer a comprehensive lens through which to examine learners' beliefs and their impact on language acquisition.

Building on this foundation, the study's findings reveal that Thai undergraduate students exhibit varying levels of growth and fixed mindsets across these dimensions. The higher prevalence of growth mindsets in the dimensions of "belief in failure or mistakes" and "belief in strategies for learning English" suggests that many of our sampled students believe they possess the resilience and adaptability needed for effective language learning. These results align with previous research highlighting the importance of viewing failures as learning opportunities and actively seeking out strategies to improve language skills (Lou & Noels, 2019b); Mercer and Ryan (2010). Zarrinabadi and Lou (2022) discovered that learners with a growth mindset exhibit greater resilience and are more likely to persist in challenging situations, while those with a fixed mindset tend to avoid challenges and negative judgment.

However, the lower mean score in the dimension of "perception of ability and potential" indicates that our sampled students may have less optimistic views of their own language abilities and potential for improvement. Nevertheless, this finding is consistent with research emphasizing the role of self-efficacy beliefs in language learning (Bandura, 1997).

Nonetheless, when compared to studies conducted in Western context (Lou et al., 2021b), the proportion of individuals with the highest level of growth mindset (dynamic) is relatively low. This may

be due to the influence of Thailand's traditional learning culture, which tends to prioritize grades and examinations over the learning process itself. This culture emphasizes academic excellence and achievement over the development of virtues, ethics, and happiness. Assessments typically measure rote memorization rather than analytical thinking (Boonwanno et al., 2023). Therefore, to foster higher levels of growth mindsets, it is crucial to implement changes in curricula, teaching practices, and assessment methods to align with the principles of mindset and continuous skill development

Moreover, the large standard deviations observed for both the fixed and growth mindset groups suggest the presence of individual differences in the year of study and university affiliates within the sample. This variability in mindset scores aligns with the understanding that language mindsets are influenced by various factors, such as learning experiences, socioeconomic backgrounds, and personal beliefs (Lou & Noels, 2019b).

Conclusion

This study illuminated the multidimensional landscape of language mindsets among participants, revealing both positive trends towards growth-oriented attitudes in certain dimensions, as well as areas where mindset development varies. The findings provide empirical evidence supporting the multidimensional and complex nature of language mindsets in the context of learning English as a foreign language. The results highlight the importance of fostering growth mindsets across all dimensions to optimize language learning outcomes and emphasize the necessity of examining diverse aspects of beliefs about language learning to fully understand their influence.

Interestingly, over 40% of respondents demonstrated a fixed mindset towards language learning, highlighting an urgent need for interventions to foster a growth mindset and instill beliefs about the malleability of language proficiency in our sampled context (Lou & Noels, 2020b; Zarrinabadi & Lou, 2022).

Furthermore, while most participants reported that they possessed a growth language mindset, nurturing this mindset is an ongoing process that must be continually developed (Lou & Noels, 2020b; Zarrinabadi & Lou, 2022). Implementing targeted interventions based on the research

findings, such as tailoring approaches to specific years of study, university contexts, and mindset dimensions, can help Thai undergraduate students develop a more comprehensive growth mindset. By leveraging the expanding levels of failure and strategy beliefs while addressing the restricted levels of perceived ability and motivational beliefs, educators can empower students to embrace challenges and persist through setbacks. Ultimately, fostering a growth mindset across all dimensions through everyday teaching practices and a supportive classroom culture can enhance students' language learning experiences and equip them with the tools needed to thrive in their language acquisition journey.

Future Directions

Future research could explore the factors that contribute to dimensional variations in mindset and investigate targeted interventions to cultivate learners' growth language mindset. Qualitative methods like interviews or focus groups could yield nuanced understandings of learners' mindset beliefs, experiences, and socio-cultural influences, complementing quantitative findings with rich contextual insights.

Cross-cultural studies could elucidate the universality or cultural specificity of language mindsets and their impact. Moreover, while examining mindset dimensions, the study did not investigate their potential interactions or relative contributions to learning outcomes. Advanced statistical techniques like structural equation modeling could explore interrelationships among mindset dimensions and their combined influence on proficiency, motivation, and learning behaviors.

Developing and evaluating mindset-based interventions in language learning contexts is a promising avenue. Experimental studies could assess strategies for promoting growth mindsets, such as attributional feedback (Rattan et al., 2015), growth mindset messages (Yeager et al., 2016), or mindset-oriented curricula activities, providing causal evidence and informing best practices.

Limitations

Firstly, the reliance on self-report data may be susceptible to response biases, such as social desirability bias (Krumpal, 2013). Secondly, the cross-sectional design captures mindsets at a single timepoint, precluding examination of how mindsets develop or

change over learners' journeys. Finally, the sample is limited to Thai undergraduates, restricting generalizability to other populations or cultural contexts.

Appendix

Table 9

The Number of Students' Responses and Language Mindset Scores in Each Language Mindset Dimensions and Categorizations (n = 400)

Dimensions	Overall			Categorizations													
				Immutable			Restricted			Evolving			Expanding			Dynamic		
	M	*SD*	Level	n	*M*	*SD*	n	*M*	*SD*	n	*M*	*SD*	n	*M*	*SD*	n	*M*	*SD*
1. Positive Effort Belief	19.42	4.31	Evolving	13	9.08	1.24	57	13.89	1.16	167	18.14	1.45	139	22.82	1.39	24	27.54	1.44
2. Motivational Belief	17.23	1.50	Evolving	47	8.38	1.54	121	13.40	1.45	114	18.04	1.52	91	22.81	1.44	27	27.59	1.62
3. Participation in Language Activities	17.51	5.22	Evolving	41	8.61	1.53	109	13.66	1.40	147	18.14	1.37	76	22.93	1.51	27	27.89	1.67
4. Belief in Failure or Mistakes	21.18	5.20	Expanding	12	8.42	1.93	52	13.83	1.44	100	18.19	1.43	150	22.9	1.46	86	27.87	1.45
5. Belief in Strategies for Learning English	20.35	4.82	Expanding	14	9.14	1.46	57	14.16	1.35	135	18.34	1.42	142	23.11	1.48	52	27.81	1.51
6. Perception of Ability and Potential	16.69	5.35	Evolving	52	8.35	1.87	137	13.67	1.36	117	18.09	1.49	76	22.91	1.46	18	28.44	1.50

*Total scores = 30 each dimension

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