RESEARCH ARTICLE

Teachers' Mindsets in Foreign Language Classrooms

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Abstract
This research aims to explore English teachers' mindsets and further investigate whether teachers' mindsets have anything to do with nine factors, namely, age, gender, the highest level of education completed, department graduated in, being abroad for education, receiving in-service training programs, teaching experience, level taught, and institution. In this descriptive study, data were collected from 162 English teachers working at geographically diverse institutions in Turkey through an online survey. The survey included a background questionnaire and a mindset instrument. Findings showed that more than half of the English teachers had a fixed mindset, and the remaining had either a mixed or a growth mindset, of which the latter constituted the smallest group in number. Results also revealed that teachers' mindsets were irrespective of nine previously determined variables.

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Introduction

Intelligence has long been under the spotlight of many, including teachers, teacher trainers, educators, parents, and students. From which perspectives and by which means it is investigated have always differed, yet the complexity of the human mind remained unchanged. Considering that intelligence and teaching are two inseparable concepts, and intelligence is a factor contributing to learning, the starting point of this study is the everlasting complexity of the human mind and irreducible interest in the interdependence of human intelligence and learning. Nonetheless, the relationship between intelligence and learning cannot be downgraded into the former being one of the predictors of the latter, as can be traditionally thought. Far beyond that, this relationship is so complex that learners' beliefs and perceptions of the nature of human intelligence may affect the meaning of effort and challenge to them, their conceptions of failure, and the goals they set for success (Dweck et al., 2014).

As scientists for years have developed many scientific theories about intelligence, people also develop implicit theories of intelligence or mindsets that involve their underlying beliefs about the nature of intelligence (Hong et al., 1995). People who believe in the malleability of intelligence are said to have a *growth mindset*, while others who think that intelligence is a fixed trait have a *fixed mindset* (Dweck, 2006). However, it is unlikely that all people fall into two discrete categories according to their mindsets; instead, they lie on a continuum, two extreme sides of which are the growth and fixed mindsets. Put differently, people may change how much they believe in the malleability of intelligence or reject it. More importantly, individuals' mindsets may differ in various areas such as sports, science, or language learning. When the uniqueness and distinctiveness of language learning are considered, the concept of mindset concerning foreign language learning becomes prominence.

In addition to the mindsets about their teaching skills, teachers also have mindsets about their students' intelligence and abilities, which brings forward the issue of nature versus nurture (Dweck, 2012). That is, do teachers believe that their students have specific capacities to learn and succeed in life by nature, or would nurture and teachers' efforts make their students any better? Teacher mindset is all-important particularly due to two reasons. First, teachers' mindsets may influence classroom teaching practices and affect student learning and the whole learning environment (DeLuca et al., 2019). Second, teachers' expectations for their students' intellectual abilities and performances may affect students' performances serving as self-fulfilling prophecies (Rosenthal & Jacobson, 1968). Teachers' mindsets are considered domain-specific, and teachers' implicit theories of intelligence may vary based on interpersonal factors (Patterson et al., 2016). That is why it seems worthwhile to study teachers with various backgrounds in a prespecified domain and further investigate whether factors such as age, experience, educational background, and teaching experience have anything to do with teachers' mindsets. While this study may set forth a different perspective on language teachers' belief systems and provide implications for them, it may also set the ground for mindset intervention studies. Below, a review of the literature is presented regarding the bases of the study. However, before giving the research synthesis, a theoretical framework is drawn.

Theoretical framework

Mindset is a broad term that is likely to appear in various contexts in language. Throughout this study, the use of mindset is limited to individuals' mindsets about personal attributes such as intelligence, abilities, and competence, as identified in the Mindset Theory by Dweck (2000). The Mindset Theory is based on a model in which individuals develop self-theories that reflect their belief systems and self-concepts (Dweck, 2000; Dweck & Leggett, 1988). These self-theories or mindsets are set of beliefs that are powerful enough to affect people's thoughts, views, and behaviors (Dweck & Leggett, 1988). According to the theory, there are two types of mindsets: the growth mindset (incremental theory) and the fixed mindset (entity theory). Individuals do not necessarily have a sharp single mindset; contrarily, they may have different mindsets for different areas of intellectual abilities, and the degree of fixed or growth mindset they hold may change.

People may differ in what type of goals they set for success, how they perceive effort and failure, how willing they are to put effort, and how much they accept failures according to their mindsets. The growth mindset refers to the belief that people can improve their intellectual abilities regardless of where they start and how skillful they are. First, the growth mindset lets people love their work despite difficulties. Though they may feel anxious when they confront challenges, they are apt to take risks, face the difficulty and work on them with determination. If abilities can be improved and there is potential for progress and growth through effort, there are still many ways to succeed (Dweck, 2006). As it is well said by Dweck (2006, p.30), "Maybe they haven't found the cure for cancer, but the search was deeply meaningful." Second, instead of performance goals that aim to show the best of what one already has, people with a growth mindset have learning goals (or mastery goals) that turn setbacks into learning (Dweck et al., 2014). Third, when individuals with a growth mindset experience a setback, they know it does not define them; failure is an experience to be learned from. The growth mindset lets people believe that their qualities may develop and their abilities may improve. (Dweck, 2006).

The fixed mindset refers to the belief that one's intelligence and abilities are fixed and cannot easily change. People with this mindset consider that they may learn

new things, but their underlying intellectual abilities remain unchanged (Dweck et al., 1995). First, although ability and effort are seen as factors contributing to success in both mindsets, their weight may vary according to the person's mindset (Hong et al., 1999). In the fixed mindset, the outcome is more important than the process. If people are not successful enough or cannot reach the desired outcome, they may feel all their effort is wasted and give up (Dweck, 2006; Dweck et al., 2014).

Furthermore, making an effort is terrifying for people with a fixed mindset for two reasons. To begin with, if people are intelligent enough, they do not need to put in any effort to succeed; if they make effort, it casts doubt on their intellectual abilities. Moreover, it precludes excuses for failure; once people put effort into something, they cannot claim that they would be successful if they put effort into it (Dweck, 2006). Second, individuals with a fixed mindset are generally prone to worry about "proving" their abilities rather than "improving" them (Dweck & Leggett, 1988, p.259). Put differently, they have performance goals that involve the need to prove that the fixed amount of intelligence they have is at a sufficient level (Dweck, 2006). More explicitly, these people either have a "performance approach goal" and endeavor to show that they are performing well or have a "performance-avoidance goal" and try to avoid poor performance (Dweck et al., 2014, p.8). People who focus too much on performance goals, expecting to be potentially judged by others, also become more vulnerable to feeling helpless after a failure (Dweck, 2000). Third, failure is threatening for people with a fixed mindset who put other people in the judge's position instead of having them as allies. When people have positive impressions of a person, failure may turn those positive impressions into negative and since there is no true way to success in the fixed mindset and trying harder cannot let individuals go beyond their limits, the possibility of ending up with a negative label after a failure terrifies people (Dweck, 2006).

Literature review

A growing body of literature investigates how teachers' mindsets relate to the factors such as teachers' age, teaching experience, and subject area. Jonsson et al. (2012) conducted a study with 226 Swedish high school teachers from different disciplines. Findings revealed a significantly higher tendency to hold a growth mindset rather than a fixed mindset among teachers whose subject areas were language, social science,

and, practical disciplines. In contrast, contrastingly, there was no significant difference in science and mathematics teachers' preferences. Furthermore, it was pointed out that younger and less experienced teachers as well as older and more experienced teachers, showed the highest preference for a growth mindset. However, younger and more experienced teachers, as well as older and less experienced teachers, showed a lower preference for a growth mindset. The attention was drawn to the importance of teacher education and training.

The teacher-related variation in the outcomes of the mindset interventions is an issue that was investigated. One influential study of this kind was conducted by Schmidt et al. (2015) with two middle school science teachers and 160 students with various racial and ethnic backgrounds. The intervention was comprised of a web-based tutorial called Brainology, through which students were taught that the brain was like a muscle and that individuals may enhance their learning, abilities, and intelligence through effort and strategies. Analyses of classroom observations that took place before, during, and after intervention revealed that teachers were important factors that influenced the longevity of the intervention outcomes in students. Though both teachers implemented similar activities, their way of communicating with students and the mindset messages they sent differed. The teacher who was more experienced and educated teacher promoted a growth mindset, mastery orientation, strategy use, and achievement more effectively than the other teacher. Interactions in the classroom were reported to be influential in sustaining the positive effects of mindset intervention including students' beliefs about the malleability of intelligence, their preference for setting mastery-oriented learning goals, and the improvement in their achievements.

Further review of the literature shows that mindset has recently become a widespread research interest in the Turkish EFL context. Yılmaz (2020) conducted a correlational research study to determine the relationship between teachers' mindsets and their perceived self-efficacy and how these two variables were separately related to teachers' demographic characteristics with 151 English instructors working at universities in Turkiye. The analyses showed that there was a significant difference in the mindsets scores of teachers in terms of gender. Female instructors tended to

endorse a growth mindset, while male instructors tended to hold a fixed mindset. Moreover, instructors who attended teacher training programs reported higher scores on a growth mindset. However, instructors' mindsets did not differ according to their workplace, teaching experience, the program they graduated in, or the highest education level. In a similar study, Ergen (2019) found a positive correlation between mindset and technology self-efficacy beliefs with the data collected from 146 secondary school EFL teachers in Turkey. That is, teachers who endorse a growth mindset tended to have higher levels of self-efficacy in technology use, but it was further explored that the former construct did not predict the latter. Delibalta (2020) carried out a study with 330 preparatory class students. The statistical analyses showed that students with a growth mindset with some fixed ideas outnumbered others with a strong fixed mindset, a strong growth mindset, and a fixed mindset with some growth ideas. It was further suggested that female participants were more likely to hold a growth mindset than men. Altunel (2020) conducted a correlational research study with 203 English preparatory class students studying at universities in Turkey and found that students with a growth mindset outnumbered those with a fixed mindset in this sample. Furthermore, it was reported that female students were more likely to hold a growth mindset, while male students tended to maintain a fixed mindset.

Overview of the study

Intelligence has long been investigated as one of the factors that may contribute to learning. However, research shows that it is much more complicated than that. People's perceptions of human intelligence affect what they make of effort and challenge, how they interpret failure, and their life goals (Dweck, 2006; Dweck et al., 2014; Dweck & Leggett, 1988). As people have mindsets that include their views on human intelligence, teachers also have mindsets about their students' intelligence. Differently and significantly, the mindsets teachers have may greatly affect the learning environment in the classroom and influence students' underlying beliefs about human intelligence (DeLuca et al., 2019; Seaton, 2018).

A through review of the literature shows that mindset has recently become a more popular concept among educational researchers. A growing area of research suggests people's mindsets in various domains, such as language, science,

mathematics, sports, creative writing, and music may differ (Gouëdard, 2021). Some research focusing on language learning suggests that students may have a combination of both growth and fixed mindset with different weights (Jonsson et al., 2012; Rissanen et al., 2019; Stipek et al., 2001). In the related literature, it was further stated that students' mindsets concerning each sub-domain of language learning, such as writing, vocabulary, grammar, and reading, might also differ (Bahník & Vranka, 2017; Li & Bates, 2020). Moreover, while some recent research reports a positive relationship between the growth language mindset and English achievement, others investigate how English teachers' mindsets correlate with their self-efficacy beliefs and with other variables such as age, gender, highest education level attained, and workplace (Zilka et al., 2019). The concept has been studied in many ways for many different purposes, but still, many gaps are waiting to be closed by scientific research. When the research on mindset and education, specifically mindset and language teaching, is reviweved, it is possible to spot those gaps in the literature. While reviewing the literature, it was determined that several studies investigate language teachers' mindsets and how they correlate with factors such as age, gender, highest education level completed, and workplace. However, no study investigates language teachers' mindsets in the Turkish EFL context in relation to a number of predetermined variables collecting data from participants teaching different grades from primary to university level and working at diverse institutions across the country. Thus, this research is important because it will contribute to the field by addressing one of those gaps in the literature. This study, which set off to provide insights into the mindset issue and inspire further research in this relatively immature field, aims to answer the following research questions:

1. What types and levels of mindsets do EFL teachers have about intellectual abilities?
2. Do EFL teachers' mindsets differ according to demographic variables?

Method

Research design

This research first identifies English teachers' mindsets and then explores the relationship between English teachers' mindsets and several predetermined factors. These factors are namely demographic variables such as age and gender; educational backgrounds, including the department participants graduated in and the highest level of education they attained; being abroad for education or not; and their teaching experience including years of teaching, the levels they teach, type of institutions they work at, and attending any in-service training or not. In other words, this study identifies several factors that may relate to a predetermined construct, mindset, and investigates the construct and its relationship with the identified factors. As Dulock (1993) states, descriptive research portrays the characteristics of a group of people, explores the associations between already existing variables, and documents the phenomenon methodically as it naturally occurs in its setting. In line with this, this descriptive research has no manipulation but investigates the variables as they exist (Seliger & Shohamy, 1989). For conducting such descriptive research, an online survey method was employed. The questionnaire that collected background information about participants and the scale that measured teachers' mindsets were both combined and integrated into an online survey. According to Wright (2005), the online survey method for collecting data is advantageous due to several reasons. While collecting data, online surveys let the researcher recruit a great number of participants in a short time and save time for the researcher. Moreover, it gives a chance to involve participants who are otherwise hard to reach because of distance. Considering the abovementioned advantages, the online survey method was determined as the most appropriate method for the design and purpose of this study.

Participants

One hundred and sixty-two English teachers/instructors from diverse schools and universities in Turkey participated in the study. Of these participants, 85.2% were females (n=138), and 14.8% were males (n=24). The mean age for all participants is 32.1, with the youngest participant being 23 and the oldest being 65 years old. Slightly more than half of the participants had a bachelor's degree (%53.7, n=87), while 38.3% of them had a master's (n=62), and 8% of them had a doctoral degree

(*n*=13). Most teachers, with a percentage of 83.3, graduated from English Language Teaching (ELT) Department (*n*=135), while 16.7% of the teachers graduated from departments such as Language and Literature, Translation, Linguistics, and Educational Sciences (*n*=27). Moreover, 54.9% of the teachers stated that they had not been abroad for educational purposes (*n*=89), while 45.1% stated that they had been abroad for education at any time (*n*=73). On average, participants had 8.8 years of teaching experience, with the least experienced teacher having one and the most experienced teacher having 40 years of teaching experience. Participants taught various groups of learners at preschools (*n*=3), primary schools (*n*=18), secondary schools (*n*=37), high schools (*n*=23), and universities (*n*=81). Most participants, with a percentage of 64.2 worked at public/state institutions (*n*=104), and 35.8% worked at private institutions (*n*=58). Moreover, 36.4% of the participants stated that they attended at least one in-service teacher training program in their lives (*n*=59), while 63.6% of them expressed attending no in-service teacher training programs (*n*=103).

Tools

With the aim of collecting Tdata, an online survey consisting of a questionnaire and the Dweck Mindset Instrument was used. The questionnaire included nine questions aiming to collect background information about participants. The second part of the online survey comprised the Dweck Mindset Instrument, one of the commonly used versions of mindset scales that originate from the Implicit Theories of Intelligence Scale provided by Dweck (2000). The scale includes sixteen items that investigate people's core assumptions and beliefs about intelligence and talent. For each item, participants need to make a numerical expression that reflects their beliefs about the given statement using a six-point Likert type scale (6 = "Strongly agree," 5 = "Agree," 4 = "Mostly Agree," 3 = "Mostly Disagree," 2 = "Disagree," 1= "Strongly Disagree"). As Dweck et al. (Dweck et al., 1995) define mindset as a "construct with a simple unitary theme" and thus state that mindset scale items can be used alone to form shorter versions of the scale (Dweck, 2000), the reliability coefficients of the scale with the different number of items were calculated in several other studies and are given below in Table 1.

Table 1. Reliability values of the scale in previous studies

	Studies	Reliability Coefficients (α)
16-item	DeLuca et al., 2019	.93
	Ergen, 2019	.72
	Sashar, 2017 Growth mindset Fixed mindset	 .81 .78
6-item	Blackwell et al., 2007 (2-week test-retest, *r* = .77)	.78
3-item	Yan et al., 2014	.95
	Dweck et al., 1995 (six studies) (2-week test-retest, *r* = .80)	0.94 - .98

Procedure

After receiving the approval of the ethics committee at a state university, the online survey that consisted of a demographic questionnaire and Dweck Mindset Instrument was shared with English teachers and instructors working at diverse institutions in Turkey through e-mails and social media posts. Since it was empirically found that sending personalized invitations and reminder messages increase the participation rate in web-based surveys, participants were sent personalized invitation letters when possible and reminded several times about the survey (Muñoz-Leiva et al., 2010). The online survey included a brief text informing prospective participants of the aim, methodology, and procedure of the study. Participants were also ensured that the data obtained through the survey would be kept confidential and used only for the purposes of this scientific research. After being informed about the study, participants needed to approve the consent form to be eligible to see the items and fill out the survey. All items of the demographic questionnaire and Dweck Mindset Instrument were presented together to maintain the integrity of the survey. Participation was voluntary, and participants had the right to leave the survey without submitting their answers. Participants also had the ease and flexibility of filling out the survey at any time and place. When the data collection phase terminated, the online survey was deactivated, and collected data were analyzed through statistical software.

Data analysis

Statistical Package of Social Sciences (SPSS) 26.0 was used as statistical software. First, the mean age and the mean of teachers' years of experience were calculated. Then, the minimum and maximum values for the age and experience range were

found. Right after, intervals for both age and years of experience were specified, and the frequencies and percentages for each interval were computed. For gender, frequencies and percentages were computed, as well. Regarding the highest education level attained, B.A., M.A., and Ph. D. were identified as three nominal categories. As for the department they graduated in, teachers were separated into two groups: English Language Teaching Department graduates and graduates of other departments. Other nominal variables were yes-no questions, namely, being abroad for education or not and attending in-service training. The level participants teach and the institutions they work at were also identified as nominal variables. Analyses were performed for all nominal variables to find the frequencies and percentages. Then, reliability and construct validity tests were conducted for the 16-item scale. The reliability coefficient of the scale was calculated in Cronbach's alpha and found as α = .91, which indicates good internal reliability (Feldt & Charter, 2006). As for the construct validity of the scale, the varimax rotation was run, and % of variance was calculated as 70.15.

Since the scale items 1, 2, 4, 6, 9, 10, 12, and 14 measure the fixed mindset, while items 3, 5, 7, 8, 11, 13, 15, and 16 measure the growth mindset, which stem from phrasing statements either positively or negatively, fixed mindset items were reverse coded before calculating mean mindsets scores. By averaging their scores on sixteen scale items, participants' mindset scores were calculated out of 6. The highest end (6.0) indicates a strong endorsement of a growth mindset, and the lowest end (1.0) indicates a strong endorsement of a fixed mindset. Participants were assigned to three categories according to their mindset scores: participants with a mindset score of 4.00-6.00 fell into the growth mindset category, participants with a mindset score of 1.0-3.0 fell into the fixed mindset category, and participants with a mindset score of 3.01-3.99 were identified as having a mixed mindset. Next, the frequency and percentage of participants besides mean and standard deviation values were calculated for each item separately. Finally, the relationships between the scale score and the other variables were investigated through parametric tests (One-way ANOVA and independent sample t-test) where data were normally distributed and through non-parametric tests (Mann-Whitney U Test and Kruskal-Wallis-H Test) where data were

skewed. Intervals including a value less than 30 were considered skewed and subjected to non-parametric tests.

Results

The types and levels of mindsets of EFL teachers

As Table 2 illustrates, out of 162 participants, 10.49% (*n*=17) had a growth mindset, 58.02% (*n*=94) had a fixed mindset, and 31.48% (*n*=51) had a mixed mindset. Although there were participants who strongly agreed to fixed mindset ideas in each item so that they scored the minimum score of 1.00, indicating a very strong endorsement of a fixed mindset, no participants strongly agreed to growth mindset ideas throughout the entire scale and received the highest score that would imply a very strong endorsement of a growth mindset. The mean score of the mixed mindset category ($\bar{x}$=3.42) also showed that many participants in the mixed mindset category were closer to fixed mindset beliefs rather than growth mindset beliefs. With exploratory analyses, skewness and the Kurtosis values for the mindset scores were found to be .31 and -.26, respectively, which demonstrate the normal distribution of the data (George & Mallery, 2010).

Table 2. Classification of participants' mindsets (n=162)

	N	%	M	MIN	MAX	SD
Growth mindset (Mindset score ≥4)	17	10.49	4.41	4.00	5.13	.35
Fixed mindset (Mindset score ≤3)	94	58.02	2.27	1.00	3.00	.47
Mixed mindset	51	31.48	3.42	3.06	3.94	.25

After participants' mean mindset scores were calculated, answers given to each questionnaire item by the whole group were identified. Numerical data showing frequency and percentage values for responses to each item are given in Table 3. As some of the items were positively phrased, and some were negatively phrased, a higher mean score in an item (e.g., $\bar{x}$=4.35) might correspond to a higher endorsement of a fixed mindset. However, in another item (e.g., $\bar{x}$=2.65), a lower mean score might correspond to a higher endorsement of a fixed mindset.

Table 3. Dweck Mindset Instrument (n=162)

Items		Strongly Disagree	Disagree	Mostly disagree	Mostly Agree	Agree	Strongly Agree	Mean	SD
1) You have a certain amount of intelligence, and you can't really do much to change it.	%	1.9	14.2	22.2	16	32.1	13.6	4.03	1.35
	N	3	23	36	26	52	22		
2) Your intelligence is something about you that you can't change very much.	%	1.9	11.7	18.5	20.4	36.4	11.1	4.11	1.28
	N	3	19	30	33	59	18		
3) No matter who you are, you can significantly change your intelligence level.	%	17.3	32.1	21.6	14.2	13.6	1.2	2.78	1.33
	N	28	52	35	23	22	2		
4) To be honest, you can't really change how intelligent you are.	%	4.9	13	13	23.5	35.8	9.9	4.02	1.36
	N	8	21	21	38	58	16		
5) You can always substantially change how intelligent you are.	%	9.3	36.4	20.4	19.8	12.3	1.9	2.95	1.26
	N	15	59	33	32	20	3		
6) You can learn new things, but you can't really change your basic intelligence.	%	6.2	21.6	18.5	19.8	27.2	6.8	3.60	1.42
	N	10	35	30	32	44	11		
7) No matter how much intelligence you have, you can always change it quite a bit.	%	9.9	37	26.5	10.5	13.6	2.5	2.88	1.28
	N	16	60	43	17	22	4		
8) You can change even your basic intelligence level considerably.	%	11.1	32.1	19.8	20.4	14.8	1.9	3.01	1.32
	N	18	52	32	33	24	3		
9) You have a certain amount of talent, and you can't really do much to change it.	%	3.1	9.3	13	20.4	36.4	17.9	4.31	1.33
	N	5	15	21	33	59	29		
10) Your talent in an area is something about you that you can't change very much.	%	2.5	8.6	13	24.7	36.4	14.8	4.28	1.26
	N	4	14	21	40	59	24		
11) No matter who you are, you can significantly change your level of talent.	%	14.8	38.9	24.1	13	6.8	2.5	2.65	1.22
	N	24	63	39	21	11	4		
12) To be honest, you can't really change how much talent you have.	%	1.9	7.4	13	23.5	40.1	14.2	4.35	1.20
	N	3	12	21	38	65	23		
13) You can always substantially change how much talent you have.	%	11.7	38.3	24.7	17.3	6.2	1.9	2.73	1.17
	N	19	62	40	28	10	3		
14) You can learn new things, but you can't really change your basic level of talent.	%	3.7	10.5	16	22.8	37	9.9	4.09	1.30
	N	6	17	26	37	60	16		
15) No matter how much talent you have, you can always change it quite a bit.	%	10.5	38.3	27.2	13	10.5	0.6	2.77	1.17
	N	17	62	44	21	17	1		
16) You can change even your basic level of talent considerably.	%	12.3	39.5	25.3	13.6	8.6	0.6	2.69	1.16
	N	20	64	41	22	14	1		

EFL teachers' mindsets according to predetermined variables

Age

A Kruskal-Wallis H test was performed to explore whether English teachers' mindsets differed according to their age. As Table 4 shows, there was no statistically significant difference ($H(2)=2.63$, $p=0.27$) in the mindsets of teachers aged between 20 and 30, 31 and 40, or 41 and older.

Table 4. Relationship between mindset and age (Kruskal-Wallis H test)

	Age Groups	N	Mean Rank	H (chi-square)	Sig. (p-value)
Mean Mindset Score	20-30	79	80.44	2.63	0.27
	31-40	67	86.52		
	41+	16	65.69		

However, a detailed item-based analysis revealed that teachers' responses to some of the items differed significantly among prespecified age groups (See Table 5). Significance values were found as .02, .04, .02, .01 for items 6, 9, 10, and 14, respectively, which indicates a statistically significant ($p<0.05$) difference among groups regarding these four items. To further understand which group differed from the others significantly, a post hoc analysis was conducted. As Table 6 illustrates, Tamhane's T2 test showed that in items 6 and 14, teachers who were 41 years of age or older tended to endorse the fixed mindset ideas more than teachers between 20-30 did. However, teachers aged between 20-30 did not differ significantly from the other groups in their responses to these items. As for items 9 and 10, the post hoc analysis did not reveal a significance level in the prespecified range (p=.10-.48).

Table 5. Relationship between scale items and age (Kruskal-Wallis H test)

Items	Age Interval	N	Mean Rank	*H* (chi-square)	Sig. (*p*-value)
6) You can learn new things, but you can't really change your basic intelligence.	20-30	79	85.09	7.47	.02
	31-40	67	71.80		
	41+	16	104.38		
9) You have a certain amount of talent, and you can't really do much to change it.	31-40	67	79.97	6.65	.04
	41+	16	83.91		
	20-30	79	84.58		
10) Your talent in an area is something about you that you can't change very much.	31-40	67	72.64	7.73	.02
	41+	16	103.38		
	20-30	79	84.18		
14) You can learn new things, but you can't really change your basic level of talent.	31-40	67	72.44	9.39	.01
	41+	16	106.19		
	41+	16	105.56		

Table 6. Tamhane's T2 post hoc analysis for scale items

Dependent Variable	(I) Age Interval	(J) Age Interval	Mean Difference (I-J)	Sig. (p-value)
6) You can learn new things, but you can't really change your basic intelligence.	20-30	31-40	.42	.20
		41+	-.59	.31
	31-40	20-30	-.42	.20
		41+	-1.01*	.03
	41+	20-30	.59	.31
		31-40	1.01*	.03
9) You have a certain amount of talent, and you can't really do much to change it.	20-30	31-40	.30	.43
		41+	-.48	.48
	31-40	20-30	-.30	.43
		41+	-.79	.12
	41+	20-30	.48	.48
		31-40	.79	.12
10) Your talent in an area is something about you that you can't change very much.	20-30	31-40	.29	.39
		41+	-.52	.40
	31-40	20-30	-.29	.39
		41+	-.82	.10
	41+	20-30	.52	.40
		31-40	.82	.10
14) You can learn new things, but you can't really change your basic level of talent.	20-30	31-40	.44	.12
		41+	-.53	.28
	31-40	20-30	-.44	.12
		41+	-.97*	.02
	41+	20-30	.53	.28
		31-40	.97*	.02

Gender

A Mann-Whitney U test was performed to determine whether English teachers' mean mindset scores differed regarding their gender, as Table 7 shows. The results indicated that the difference between males and females in terms of their mindsets was non-significant (U=1642, p=0.95). However, an item-based Mann-Whitney U test analysis revealed that there was a significant difference (p=.03) in teachers' responses to item 3, showing a greater endorsement of a growth mindset idea *"No matter who you are, you can significantly change your intelligence level."* for the female teachers' part (See Table 8).

Table 7. Relationship between mindset and gender (Mann-Whitney U test)

	Gender	N	Mean Rank	U	Sig. (p-value)
Mean Mindset Score	Female	138	81.40	1642	0.95
	Male	24	82.08		

Table 8. Mann-Whitney U test results for the scale item

Items	Gender	N	Mean Rank	*U*	Sig. (*p*-
3) No matter who you are, you can significantly change your intelligence level.	Female	138	84.83	1197	.03
	Male	24	62.38		
	Male	24	83.83		

Highest level of education completed

A Kruskal-Wallis H test was conducted to determine whether there was a significant difference in English teachers' mindsets according to the highest level of education they attained. As Table 9 demonstrates, teachers' mindsets did not differ significantly ($H(2)=1.28$, $p=.53$) according to attaining a bachelor's, master's, or doctoral degree. A further item-based analysis was also performed to determine any possible statistically significant difference in teachers' responses to the scale items. Nevertheless, teachers' responses to the scale items did not differ significantly according to the highest level of education they completed.

Table 9. Relationship between mindset and the highest level of education completed (Kruskal-Wallis H test)

	Highest Level of Education Completed	N	Mean Rank	H (chi-square)	Sig. (p-value)
Mean Mindset Score	Bachelor's degree	87	82.82	1.28	0.53
	Master's degree	62	77.33		
	Doctoral degree	13	92.54		

Department

A Mann-Whitney U test was conducted to see if there was a statistically significant difference in the mean mindset scores between English Language Teaching and other department graduates. As Table 10 illustrates, although teachers who graduated in other departments tended to have a higher mean score of mindset than teachers who graduated in the English Language Teaching Department, this difference was not

statistically significant (*U*=1713.5, *p*=0.62). An item-based Mann-Whitney U test was also conducted to see if there was a difference in teachers' responses to scale items. Analysis showed no significant difference in teachers' responses to the scale items when their departments were considered.

Table 10. Relationship between mindset and department (Mann-Whitney U test)

	Department	N	Mean Rank	U	Sig. (p-value)
Mean Mindset Score	English Language Teaching	135	80.69	1713.5	.62
	Other	27	85.54		

Being abroad for education

To determine if there was a significant difference in the mindsets of teachers who had been abroad for educational purposes and those who had not, an independent sample t-test was performed. As Table 11 demonstrates, analyses revealed that the mindsets of teachers who had been abroad for educational purposes (*M*=2.76, *SD*=.94) did not differ significantly from those of teachers who had not (*M*=2.93, *SD*=.76), providing the *p*-value as .22. Moreover, further analyses showed no statistically significant difference in teachers' responses to scale items regarding their overseas experiences.

Table 11. Relationship between mindset and being abroad for education (Independent sample t-test)

	Being Abroad for Education	N	Mean	SD	T	Sig. (p-value)
Mean Mindset Score	Yes	73	2.76	.94	-1.25	.22
	No	89	2.93	.76		

Teaching experience

A one-way ANOVA test was conducted to ascertain whether there was a significant difference in English teachers' mindsets according to their teaching experiences. As Table 12 illustrates, despite the differences in the mean values of English teachers' mindsets varying according to their teaching experiences (*M*=2.86, 2.77, 2.97; *SD*=.90, .75, .90), the computed significance value (*p*=.49) shows that the difference is insignificant. An item-based one-way ANOVA test was also conducted to explore further if participants' responses to the scale items differed significantly (see Table

13). The analysis yielded a significant difference in the responses given to the item "*No matter how much intelligence you have, you can always change it quite a bit.*" (*p*=0.03).

Table 12. Relationship between mindset and teaching experience (One-Way ANOVA)

	Teaching Experience	N	Mean	SD	F	Sig. (p-value)
Mean Mindset Score	0-5	55	2.86	.90	.72	.49
	6-10	64	2.77	.75		
	11+	43	2.97	.90		

Table 13. One-Way ANOVA test results for the scale item

Items	Teaching Experience	N	Mean	SD	*F*	Sig. (*p*-value)
7) No matter how much intelligence you have, you can always change it quite a bit.	0-5	55	2.87	1.26	3.48	.03
	6-10	64	2.63	1.18		
	11+	43	3.28	1.37		
	11+	43	3.30	1.41		

As for finding out which group differed from the others in their responses to item 7, a post hoc analysis was conducted. The Scheffe test revealed that, as shown in Table 14, participants with teaching experience of 11 years or more agreed with the growth mindset idea more than participants with teaching experience of 6-10 years did, and this difference was statistically significant (*p*=.03). However, relatively less experienced teachers' (0-5 years) responses to the item did not differ significantly from those of teachers in other groups.

Table 14. Scheffe post hoc analysis for the scale item

Dependent Variable	(I) Experience Interval	(J) Experience Interval	Mean Difference (I-J)	Sig. (p-value)
7) No matter how much intelligence you have, you can always change it quite a bit.	0-5	6-10	.25	.57
		11+	-.41	.29
	6-10	0-5	-.25	.57
		11+	-.65*	.03
	11+	0-5	.41	.29
		6-10	.65*	.03

Level taught

As the number of participants teaching at different levels was not normally distributed and there were more than two categories, a Kruskal-Wallis H test was conducted to

determine whether teachers' mindsets differed significantly across groups. As Table 15 shows, teachers' mindsets about intellectual abilities differed insignificantly according to the levels they teach $H(4)=4.01$, $p=.40$). To capture the significant differences in the responses given to individual scale items, if there were any, a further Kruskal-Wallis H test was performed. However, the difference in teachers' responses to the scale items was insignificant.

Table 15. Relationship between mindset and level taught (Kruskal-Wallis H test)

	Level Taught	N	Mean Rank	H (chi-square)	Sig. (p-value)
Mean Mindset Score	Preschool	3	106.67	4.01	.40
	Primary School	18	65.67		
	Secondary School	37	76.77		
	High School	23	87.50		
	University	81	84.54		

Institution

To see if teachers differed significantly in their mindsets according to the institutions they work at, an independent sample t-test was conducted. Table 16 shows that teachers' mindsets who worked at state institutions ($M=2.85$, $SD=.87$) did not differ significantly from those who worked at private institutions ($M=2.85$, $SD=.87$), with the calculated p-value being 1. To capture the significant differences in the responses given to individual scale items, if there were any, a further independent sample t-test was performed. However, again, there were non-significant differences in the responses given to the individual scale items by teachers working at state or private institutions.

Table 16. Relationship between mindset and institution (Independent sample t-test)

	Institution	N	Mean	SD	t	Sig. (p-value)
Mean Mindset Score	State	104	2.85	.87	-.01	.99
	Private	58	2.85	.81		

Receiving in-service training programs

To find out if there was a significant difference in the mindsets of teachers who had received in-service training and those who had not, an independent sample t-test was

performed. As Table 17 illustrates, analyses showed that the mindsets of teachers who had received in-service training (*M*=2.80, *SD*=.80) did not differ significantly from those of teachers who had not (*M*=2.89, *SD*=.87), providing the *p*-value as .54. Further analyses were also performed to identify any significant difference in teachers' responses to the individual scale items (see Table 18). The independent sample t-test performed for scale items revealed that, except for an item, no statistically significant difference was observed in teachers' responses to the scale items (*p*=.12-.98). However, as for item 13, *"You can always substantially change how much talent you have."*, there was a significant difference in the mean value calculated for the teachers' having received in-service teacher training (*M*=2.47, *SD*=1.04) or not (*M*=2.88, *SD*=1.22). Interestingly, teachers who have not attended any in-service teacher training programs differed in endorsing the abovementioned growth mindset idea more than the other group of teachers at the significance level of .03.

Table 17. Relationship between mindset and receiving in-service training (Independent sample t-test)

	In-service Training	N	Mean	SD	t	Sig. (p-value)
Mean Mindset Score	Yes	59	2.80	.80	.62	.54
	No	103	2.89	.87		

Table 18. Independent sample t-test results for the scale item

Items	In-service Training	N	Mean	SD	*t*	Sig. (*p*-value)
13) You can always substantially change how much talent you have.	Yes	59	2.47	1.04	2.16	.03
	No	103	2.88	1.22		

Conclusions and Discussion

The main purpose of this study was to investigate English Language teachers' mindsets about intellectual abilities. For doing so, teachers' mindsets were initially identified, and then the association between teachers' mindsets and several variables was studied. Concerning the two research questions, this study has two main conclusions. First, teachers with a fixed mindset greatly outnumbered those with a mixed or a growth mindset. In other words, more than half of the English teachers in the Turkish EFL context had a fixed mindset, and the remaining had a mixed or a growth mindset, which the latter constituted the smallest group.

Second, this research concludes that teachers' mindsets were irrespective of nine previously determined variables. That is, teachers' mindsets did not differ significantly according to their age, gender, the highest level of education completed, the department they graduated in, being abroad for education or not, years of experience in teaching English, the level they teach, type of institution they work at, and attending any in-service training program or not. However, it is noteworthy that item-based analyses showed a significant difference in teachers' beliefs regarding the ideas given in some of the items. This is especially important once the scale used in this research is considered reducible to fewer items before its use (Dweck, 2000).

Pedagogical implications

Considering the importance of teacher mindset for teachers themselves, their students, and the whole educational setting, the importance of findings regarding teacher mindset becomes more evident. For instance, according to Leroy et al. (2007), the teacher mindset is crucial because teachers' beliefs on abilities guide their behaviors in educational settings. Besides, the teacher mindset is vital because their teachers' beliefs affect how students perceive their abilities (Seaton, 2018). In line with these, an OECD report suggests that teaching a growth mindset in schools might enhance the school atmosphere and improve students' learning, and teachers should be the first to be taught a growth mindset (Gouëdard, 2021). As many studies address, teacher mindset, directly and indirectly, impacts student achievement. Teacher mindset directly influences students' academic success because teachers with a growth mindset feel more responsible for student's academic attainment; give effort-based feedback and focus more on students' learning; foster individual learning processes; and prioritize assessment *as a* learning approach (DeLuca et al., 2019; Patterson et al., 2016; Rissanen et al., 2019). Teacher mindset may also indirectly impact students' academic success because teachers with a growth mindset treat students in a more unbiased and appropriate way; support autonomy in the classroom; help students alter their responses to challenges; and, most importantly, help students develop a malleable view of intellectual abilities (Lee, 1996; Leroy et al., 2007; Rau, 2016; Yeager et al., 2022).

This research study concludes that the majority of the participants in the sample have either a fixed or a mixed mindset, and only a small proportion has a growth mindset, which is in line with the findings of Beyaztaş and Hymer (2018), despite diverging from those of Delibalta (2020) and Altunel (2020). The second major conclusion this study drew is that teachers' mindsets do not vary according to demographic variables such as their age and gender, their educational backgrounds, and their teaching experience. These findings are in line with the findings of Macnamara and Rupani (2017), who reported an insignificant relationship between mindsets and age, gender, and education, and partially congruent with those of Yılmaz (2020), who found that teachers' mindsets did not differ significantly according to their workplace, teaching experience, the program they graduated in, and the highest education level attained. However, the findings differ from those of Spinath et al. (2003), who reported that mindset had a weak but consistent relationship with gender and age, and partially differ from those of Yılmaz (2020), who reported that mindset was significantly related to gender and receiving teacher training.

The independence of mindset from certain variables statistically documented in this study suggests that mindset is a distinct trait, and a type of mindset cannot be attributed to a certain group. That is, expecting a teacher to hold a particular mindset because they belong to a group is undue and invalid. Thus, intuitively thinking that a group of teachers holds a growth or fixed mindset just because they have several characteristics in common would be misleading. These are consistent with Mystkowska's (2014) findings that despite people sharing much in common such as having similar backgrounds, taking the same courses, and having the same age and gender, they may vary in their mindsets. Teachers' mindsets are complex systems shaped by internal and external factors. Internal factors contributing to one's mindset include upbringing, grit, inner motivation, ego, burnout, and success and failure experiences. On the other hand, external factors that shape one's mindset include mentorship, guidance, feedback, school environment, principal support, lack of autonomy, and lack of sufficient appreciation.

To foster a growth mindset among teachers and, in turn, lead their students to achieve higher, implementations and training programs can be utilized. Research shows that such practices are effective when they are systematically implemented and

include active and reflective teaching strategies (Seaton, 2018). Nevertheless, it should be clarified that mindsets are not a panacea, although they seem to be a point of entry to improving education. Besides, labeling mindsets as good or bad can be misleading at some point. There are many pathways in life to improve and achieve, and people may prefer their unique ways of going. In other words, one size does not fit all at every turn (Mercer, 2011).

Practical recommendations

This study has several implications for practice. Before anything else, teachers should be aware of their mindsets and how their mindsets influence their pedagogies and, in turn, their students' mindsets and achievements. As it was empirically found that promoting a growth mindset among teachers is beneficial for both teachers themselves and their students, and this study concluded that English teachers tend to have a fixed mindset, teachers may personally take several steps to enhance their belief systems. Teachers may read scientific articles, receive training programs, and attend seminars or courses that teach the plasticity of the brain and how intellectual abilities can be developed through effort. As Kroeper et al. (2022) indicate, students' being equipped with growth mindset beliefs are insufficient for having the desired level of motivation and academic achievement. Those students also need a supportive learning environment. To provide a supportive learning environment, teachers may adopt growth mindset beliefs by broadening their perspectives, then better communicate growth mindset messages in classrooms and implement classroom activities that promote growth mindset beliefs.

Moreover, as it was used as an effective method in a few intervention studies (Blackwell et al., 2007; Good et al., 2003), teachers may teach the malleability of human abilities to their students through workshops, journal papers, scientific articles, books, or videos, either implicitly or explicitly, as a supplement to the instructional plan. In addition to the roles of teachers' mindsets in creating a supportive learning climate in classrooms, as Rattan et al. (2015) point out, teachers also transfer their mindsets to students. From this viewpoint, it might be asserted that policymakers and educators have an important role in prioritizing and implementing the desired mindset among students. Thus, policymakers, school managers, and teachers should work

collaboratively toward implementing a growth mindset at schools. This collaboration can be achieved by creating a supportive school environment, choosing proper teaching materials, and designing lessons that integrate growth mindset messages. However, it may not be as simple as it seems, so effective strategies should be sought to achieve substantial changes. With the steps taken, teachers may lead their students to set learning goals, value effort, and learn from failures.

Limitations and recommendations for further research

The present study has several limitations. First, this is a cross-sectional study that measured teachers' mindsets at a given point in time. However, as intervention studies show, the mindset itself is a mutable and cultivatable quality. Thus, the identified mindsets of the participating teachers may not remain consistent over time. Second, only quantitative data were collected for this descriptive study; qualitative data obtained through interviews and observations, together with quantitative data, could help better understand the teachers' underlying belief systems (Creswell & Garrett, 2008). Third, data collected for this research are based on self-reports, which might not reflect the actual beliefs of participants. Fourth, the participants of this study are limited to 162 teachers. Moreover, out of 162 teachers, only twenty-four were males, which may be insufficient to represent the group. Fifth, this study did not use random sampling; teachers who responded to the online survey were, at least to some extent, technology literate and reached the survey by technological means. Further research may mitigate any inconvenience arising from this by collecting data from a bigger number of participants that would reflect the characteristics of the target population better or collecting data through both online and paper-based surveys for those who are unavailable to receive the online invitation letters and/or participate in the online survey.

As mentioned earlier, the teacher mindset regarding language teaching and/or learning is still in its youth, and there is a lot to unveil in the area. For instance, research may study mindsets through longitudinal research to understand how teachers' mindsets take shape over time, and these longitudinal studies may or may not include an intervention. In the former, whether personal or environmental factors change teacher mindset over time may be investigated. If yes, to what extent and by which means personal or environmental factors influence teacher mindset can be

examined. In the latter, research may study the effectiveness and possible outcomes of various mindset interventions. Further research may address how teachers' mindsets are reflected in their classroom pedagogies. To achieve this, qualitative or mixed-method research that uses scales, interviews, and extensive classroom observations may be carried out. Such research may be extended to the study of teacher mindset and its reflections on student achievement. Small-scale studies mainly provide extensive and in-depth information on the investigated phenomenon. Nevertheless, rigorous large-scale studies can be carried out to reach more conclusive and overall findings on how the teacher mindset reveals itself in school settings. For this study, data were collected through a mindset scale that measured teachers' beliefs on general abilities; further research may measure teachers' language mindset and investigate how teachers' language mindset relates to certain factors. Besides, research may study whether teacher mindset regarding general intellectual abilities and teacher mindset regarding abilities to learn languages vary, and if yes, how and to what extent.

Meanwhile, other research may address teachers' mindsets about subdomains of a language, such as reading, writing, speaking, and listening as separate units. However, other research may scrutinize the interdependence of teacher and student mindsets, how they are related, and whether there is a cause-and-effect relationship between the two. All in all, many areas concerning teacher mindset are under-researched now and waiting to be disclosed. On the one hand, research might be conducted to bring uninvestigated areas to light. On the other hand, research adopting different methods and perspectives with distinctive research designs might be carried out to develop new insights into the already investigated issues.

Ethics Committee Permission Information

This research study was conducted with the Research Ethics Committee approval of Istanbul Medeniyet University, dated 01.03.2021 and numbered 2021/03-01.

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