

Socio-Demographic Variations in English Language Anxiety and Divergent Thinking Ability among Secondary Students in West Bengal

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Abstract: English language anxiety has been recognized to be an underlying affective factor that shapes the learning outcomes of learners especially in multilingual settings where English is introduced as a second language. At the same time, learners' cognitive and academic advancement is greatly strengthened by divergent thinking, a fundamental aspect of creativity. With particular attention to socio-demographic factors including gender and caste, the present study explores the effect of English Language Anxiety (ELA) on Divergent Thinking Ability (DTA) among secondary school students in West Bengal. Based on the rising focus on creativity as an essential twenty-first-century skill, the study looks into how affective factors such as anxiety interact with cognitive processes such as divergent thinking in English as Second Language (ESL) learning contexts. Data were gathered from a sample of 400 secondary students randomly selected through a multistage sampling procedure across four districts of West Bengal following a quantitative descriptive survey method. The variables were measured using standardized tools such as a self-developed English Language Anxiety Scale and the adopted version of Divergent Thinking Ability test. The findings revealed that though caste-based differences were more noticeable and students from OBC categories showed higher anxiety levels, ELA did not follow a consistent pattern across genders. On the other hand, across the majority of caste categories, female students consistently showed higher levels of divergent thinking abilities. Inferential analysis of the study pointed out significant caste-based differences in speaking, writing, and test anxiety dimensions as well as in overall DTA scores. Gender based analysis also showed no significant impact on ELA but had a significant influence on DTA. These results draw attention to the necessity of inclusive teaching approaches that support students' psychological health and creative potential and the crucial role of addressing emotional aspects of language learning. The study has relevance to curriculum design, policy development, and classroom practices and has added to recommend supportive and anxiety-reducing learning environments that promote holistic student development.

Key words: English Language, Anxiety, Divergent Thinking, Secondary, Second Language.

1. INTRODUCTION:

When learning a foreign language, L2 learners frequently feel anxious, nervous, and uneasy which can have a detrimental impact on their usage of the target language. In order to overcome this anxiety and improve individual level of competence, creativity may play its vital role. UNESCO's International Bureau of Education has acknowledged it as a crucial "future competence" (Marope, Griffin, & Gallagher, 2017), and current global education frameworks continue to highlight it as a fundamental twenty-first-century skill (OECD, 2025). According to modern definitions (Finke, Ward, & Smith, 1992; Mumford, Medeiros, & Partlow, 2012; Sternberg & Lubart, 1996; OECD, 2025), creativity is the capacity to produce original ideas that are also practical or relevant. According to recent studies, creativity is a complex cognitive process that involves both divergent (idea generation) and convergent (idea assessment) thinking (OECD, 2025). A fundamental component of creativity is divergent thinking which is the capacity to produce a variety of unique ideas or solutions (Sun et al., 2024; Haase, Hanel, & Pokutta, 2025). Divergent thinking is still an essential indicator of

creative ability in a variety of language and cultural situations, according to new empirical research (OECD, 2025; Sun et al., 2024).

Rapid technological advancement and growth are the characteristics of contemporary society. If learning is to prepare students for the employment market, they must be able to think creatively and with diversity. The accelerated pace of advancement, especially the recent technological revolution that has dominated over education, will make creative people an extremely valuable resource. However, factual knowledge acquisition has been heavily emphasized in the current educational system; students' ability to comprehend or retain information that they already know determines whether they pass or fail an exam. Therefore, creativity is ultimately a human attribute. It is a human approach that helps people discover their own value and life's purpose. Divergent thinking offers a similarly intricate, even disordered, example. Decision-making, inventiveness, and cognitive flexibility are frequently associated with DT (Metwaly et al., 2022; Jana et al., 2024). Linguistic and emotional factors, such as exposure to several languages and fear, may mediate creative thinking (Haans et al., 2024; Kharkhurin, 2008, 2023). Interestingly, Kharkhurin (2023) noted that multilingual learners often show improved DT in supportive contexts, despite anxiety being a significant barrier. Additionally, Metwaly et al. (2022) discovered only a small correlation between DT and real creative achievement, indicating that emotional and cognitive environments have a big influence on creativity.

2. RATIONAL OF THE STUDY:

A thorough review of the relevant literature revealed that there are a few studies on students' divergent thinking in the Indian setting. Although divergent thinking has been extensively studied in worldwide investigation, less emphasis has been paid to understanding its development among Indian schoolchildren, particularly at the secondary level (Kharkhurin, A. V., 2023; OECD, 2025). Currently there have not been a wide range of studies on Indian schoolchildren's potential for diverse thinking. When considering West Bengal, a state with diverse populations and significant socioeconomic differences, these problems become even more important. Students in secondary school frequently experience significant linguistic, emotional, and cognitive challenges, particularly when learning English as a second language.

According to numerous studies, learners' cognitive flexibility and creative expression may be adversely affected by English language anxiety, which may limit their capacity for divergent thought (MacIntyre, P. D., 2017; Dewaele, J.-M., 2021). At the same time, recent research indicates that divergent thinking is influenced not only by cognitive aspects, but also by emotional and contextual factors such as multilingual exposure and classroom setting (Metwaly, M. K. et al., 2022; Haans, A. et al., 2024). Considering the variety of these contexts, relatively little study has been attempted to investigate how ELA interacts to affect students' divergent thinking ability at this critical developmental stage. As a result, the current study aims to overcome this gap by investigating the intricate connection between divergent thinking and language anxiety. It thus reacts to the rising demand in contemporary literature for more contextually grounded, comprehensive investigations into creativity and language learning (OECD, 2025; Sternberg, R. J., 2020).

3. OBJECTIVES: The following objectives were developed based on existing research and literature:

- 1) To estimate English Language Anxiety of the secondary students in West Bengal with regard to gender and caste.
- 2) To assess Divergent Thinking Ability of the secondary students in West Bengal with regard to gender and caste
- 3) To compare the mean scores and variability of English Language Anxiety (ELA) among secondary students with respect to socio demographic factors across different dimensions (listening, speaking, reading, writing, and test anxiety).
- 4) To determine significant differences in dimension-wise English Language Anxiety (ELA) and Divergent Thinking Ability (DTA) among students with respect to caste categories.
- 5) To determine significant differences in dimension-wise English Language Anxiety (ELA) and Divergent Thinking Ability (DTA) among students with respect to gender.

4. HYPOTHESES: The following null hypotheses have been formulated for the present study based on the previous objectives:

- **H_{0.1.}**: There is no mean difference in English Language Anxiety among secondary students in West Bengal with respect to gender and caste.
- **H_{0.2.}**: There is no mean difference in Divergent Thinking Ability among secondary students in West Bengal with respect to gender and caste.

- **H_{0.3.}**: There is no difference in the mean scores and variability of dimension-wise English Language Anxiety (listening, speaking, reading, writing, and test anxiety) among secondary students with respect to socio-demographic factors.
- **H_{0.4.}**: There is no significant difference in dimension-wise English Language Anxiety and Divergent Thinking Ability among students with respect to caste categories.
- **H_{0.5.}**: There is no significant difference in English Language Anxiety and Divergent Thinking Ability among students with respect to gender.

5. METHODOLOGY: This study employed a quantitative research design and collected and analyzed data using a descriptive method. The survey method was undertaken as the key data collection strategy in order to obtain quantitative information from an adequate sample. This approach allowed for a clear and unbiased description of the current condition or features of the phenomena being studied. By compiling and evaluating the data gathered, the study follows descriptive and inferential techniques to find underlying patterns, trends, as well as insights within the population under investigation.

Variables for the Study: The study deals with the two major variables:

- English Language Anxiety (ELA)
- Divergent Thinking Ability (DTA).

The demographics of the study are as follows: i) Gender ii) Caste.

Sample of the Study: A multistage sampling procedure was carried out across the state of West Bengal in the study. Four districts were chosen arbitrarily from two administrative zones (Howrah, South 24 Parganas, Bankura, and Purba Bardhaman). A total of 400 secondary students (200 male and 200 female, equally divided between rural and urban regions and representing different caste categories) learning English as a second language were selected from these schools.

Table No.1: Sample Consideration: Gender Distribution of Social Caste Categories

<i>Caste Category</i>	<i>Gender</i>		Total 400
	Male 200	Female 200	
<i>General (GEN)</i>	94	94	188
<i>Scheduled Castes and Scheduled Tribes (SC/ST)</i>	56	55	111
<i>Other Backward Class-A (OBC-A)</i>	23	23	46
<i>Other Backward Class-B (OBC-B)</i>	27	28	55

Tools Used in the Study: English Language Anxiety and Divergent Thinking Ability of secondary level students were estimated through employing standardized tools.

- English Language Anxiety Scale:** it was developed through a pilot study conducted on 100 students in Howrah district and it comprised of 30 items (27 positive, 3 negative) in a five point Likert scale broadly encompassing its multi-dimensions like speaking, listening, reading, writing, and test anxiety. The scale was developed through demonstrating high reliability (Cronbach's $\alpha = 0.904$) and strong validity through item-total correlations and expert review. It was administered to 400 students and analyzed the scores dimension wise or on overall score as required for the study.
- Divergent Thinking Ability:** An adopted version of the standardized questionnaire constructed by K.N. Sharma was administered for measuring Divergent Thinking Ability, a key component of this study. The questionnaire typically focuses on both **verbal and non-verbal items which are** designed to take multiple responses from participants. It revolves round specific key dimensions of creativity or divergent thought such as **fluency** (number of ideas), **flexibility** (variety of ideas), and **originality** (uniqueness of responses). Some versions may also assess **elaboration**.

Data Collection Procedure: Data were collected from 400 secondary students across different educational institutions in West Bengal affiliated with WBBSE where English is taught as second language using the standardized tools for Divergent Thinking Ability Test and English Language Anxiety Test. Ethical approval

and necessary prior permission was taken beforehand to assure smooth going of the study. Participants were clearly informed about the purpose and scoring procedure. The anxiety scale contained a 5-point type questionnaire whereas reverse scoring procedure for negative items was followed. Higher scores in the test advocated greater anxiety. The Divergent Thinking test was administered immediately after the completion of the first test and was measured to estimate their fluency, flexibility, originality and elaboration abilities. Thus the overall score was calculated by adding marks from each section as per the scoring manual of the scale.

6. ANALYSIS AND INTERPRETATION OF DATA:

Analysis Pertaining to H_{0.1} & H_{0.2}

Table No.2: Analysis of Mean Variations in Divergent Thinking and English Language Anxiety of Overall Scores

Mean Variation		ELA Total Score			DTA Total Score		
Caste	Gender	Mean	Standard Deviation	Total N	Mean	Standard Deviation	Total N
GEN	Male	77.99	17.97	94	47.56	16.12	94
	Female	75.96	22.01	94	57.18	16.43	94
SC/ST	Male	81.80	23.43	56	47.63	18.45	56
	Female	83.35	26.80	55	45.45	20.35	55
OBC A	Male	88.39	20.06	23	40.83	15.30	23
	Female	87.09	19.60	23	49.96	17.25	23
OBC B	Male	84.22	20.69	27	44.30	18.51	27
	Female	83.68	19.86	28	54.39	14.16	28

The following descriptive statistics helps in analyzing noticeable mean differences and observable trends in relation to the formulated null hypotheses: H_{0.1} and H_{0.2} with measures such as mean and standard deviation. This analysis provides a preliminary understanding of the distribution and patterns of scores across different socio-demographic groups before applying inferential statistical techniques. In the above table of **descriptive group comparison with mean differences**, ELA Mean scores did not follow a uniform pattern across gender. In some groups (GEN, OBC A & B), male secondary students expressed slightly higher anxiety on the other hand in case of (SC/ST) caste category female students experienced higher anxiety. The highest mean ELA scores were observed among OBC A students (both male and female) and notably indicated comparatively greater language anxiety in this group. Female students consistently scored higher than male students in DTA across most caste categories (GEN, OBC A, and OBC B) which conclusively indicated stronger divergent thinking skills among females. OBC A male students showed the lowest DTA scores among all categories pointing out lower divergent thinking ability among them. In several cases (especially GEN and OBC B), higher DTA Mean scores among females corresponds with relatively lower or moderate ELA, emphasizing a possible inverse relationship between anxiety and creativity.

Analysis Pertaining to H_{0.3}

Table No. 3: Comparing the Mean Scores and Variability of ELA with regard to Gender:

Descriptive Statistics: Mean Differences			Listening Anxiety	Speaking Anxiety	Reading Anxiety	Writing Anxiety	Test Anxiety
Gender	Male	Mean	16.95	18.10	14.93	16.44	14.66
		Standard Deviation	4.71	4.79	4.73	4.75	5.18
		Maximum	26.00	30.00	29.00	27.00	27.00
		Minimum	7.00	6.00	6.00	6.00	6.00
		Total N	200	200	200	200	200

	Female	Mean	16.76	18.10	14.80	16.29	14.40
		Standard Deviation	4.89	5.20	5.11	5.13	5.81
		Maximum	29.00	29.00	29.00	28.00	28.00
		Minimum	6.00	6.00	6.00	6.00	6.00
		Total N	200	200	200	200	200

Table No. 4: Comparing the Mean Scores and Variability of ELA with regard to Caste:

Descriptive Statistics: Mean Differences			Listening Anxiety	Speaking Anxiety	Reading Anxiety	Writing Anxiety	Test Anxiety
Caste	GEN	Mean	16.28	17.32	14.24	15.59	13.54
		Standard Deviation	4.56	4.73	4.55	4.64	5.23
		Maximum	26.00	30.00	25.00	27.00	28.00
		Minimum	6.00	6.00	6.00	7.00	6.00
		Total N	188	188	188	188	188
	SC/ST	Mean	17.13	18.51	15.14	16.74	15.05
		Standard Deviation	5.39	5.49	5.43	5.71	5.99
		Maximum	27.00	29.00	29.00	28.00	28.00
		Minimum	7.00	6.00	6.00	6.00	6.00
		Total N	111	111	111	111	111
	OBC A	Mean	17.87	19.54	16.28	17.70	16.35
		Standard Deviation	4.61	4.75	4.96	4.11	5.07
		Maximum	29.00	26.00	25.00	24.00	25.00
		Minimum	8.00	6.00	7.00	8.00	8.00
		Total N	46	46	46	46	46
	OBC B	Mean	17.42	18.73	15.27	17.16	15.36
		Standard Deviation	4.31	4.65	4.80	4.52	5.19
		Maximum	27.00	27.00	25.00	24.00	25.00
		Minimum	9.00	9.00	6.00	7.00	6.00
		Total N	55	55	55	55	55

In order to test the hypothesis $H_{0.3}$ which advocates that there is no difference in the mean scores and variability of dimension-wise English Language Anxiety (ELA) among secondary students with respect to socio-demographic factors in West Bengal, this table of descriptive statistics calculated measures such as mean, standard deviation, maximum, and minimum scores across different dimensions of ELA(listening, speaking, reading, writing, and test anxiety). The data have been organized and calculated separately in relation to gender and caste to understand the pattern of variations across these socio-demographic groups to have look into valuable insights, trends and group characteristics. There were negligible gender variations in English Language Anxiety (ELA) on nearly every measure, as shown in Table No.3 and there were minor differences in listening, reading, writing, and test-related anxiety. It is to note that the mean scores for speaking anxiety were the same for male and female students (18.10). However, the variations were still somewhat minor to denote that both genders had similar levels of ELA. Caste-wise analysis, on the other hand, showed more pronounced differences. Students in the General category expressed the lowest amount of anxiety, while those in the OBC A and OBC B categories showed comparatively higher mean anxiety scores across all dimensions, followed by SC/ST students. Additionally, there was more variability in the SC/ST groups, suggesting a range of anxiety feelings. Overall, caste appeared to have a stronger impact than gender on secondary students' ELA levels.

Analysis Pertaining to H_{0.4}

Table No. 5: Inferential Statistics Showing Significant Difference in ELA- dimensions and DTA

One way ANOVA for Equality of Mean						
Dimension wise ELA in Relation with Caste Category						
		Sum of Squares	df	Mean Square	F	Sig.
<i>Listening Anxiety</i>	Between Groups	134.698	3	44.899	1.967	.118
	Within Groups	9040.892	396	22.831		
	Total	9175.590	399			
<i>Speaking Anxiety</i>	Between Groups	251.097	3	83.699	3.422	.017
	Within Groups	9684.903	396	24.457		
	Total	9936.000	399			
<i>Reading Anxiety</i>	Between Groups	182.025	3	60.675	2.538	.056
	Within Groups	9467.953	396	23.909		
	Total	9649.978	399			
<i>Writing Anxiety</i>	Between Groups	244.825	3	81.608	3.406	.018
	Within Groups	9488.153	396	23.960		
	Total	9732.977	399			
<i>Test Anxiety</i>	Between Groups	406.000	3	135.333	4.596	.004
	Within Groups	11661.577	396	29.448		
	Total	12067.578	399			
DTA in Relation with Caste Category						
<i>Divergent Thinking Ability</i>	Between Groups	3293.103	3	1097.701	3.528	.015
	Within Groups	123223.897	396	311.171		
	Total	126517.000	399			

For testing null hypothesis H_{0.4} which proclaimed “There is no significant difference in dimension-wise English Language Anxiety and Divergent Thinking Ability of secondary students with respect to caste category,” inferential statistics of One way ANOVA was calculated to determine the significant differences among caste groups. There are conflicting results from the One-Way ANOVA that considered ELA dimension-wise in connection to caste categories. Listening Anxiety (F = 1.967, p = .118) and Reading Anxiety (F = 2.538, p = .056) do not differ statistically significantly between caste groups, showing that these dimensions are rather consistent. However, there are significant variations in Speaking Anxiety (F = 3.422, p = .017), Writing Anxiety (F = 3.406, p = .018), and Test Anxiety (F = 4.596, p = .004) showcasing that caste has a major impact on these components of language anxiety. Additionally, there is a significant difference in Divergent Thinking Ability (DTA) between caste groups (F = 3.528, p = .015). This illustrates that the student's creative thinking abilities vary quite significantly according to their socio-economic class background. As a whole, the results point out that while certain aspects of anxiety are unaffected, others including divergent thinking are profoundly affected by socio-cultural elements like caste. Therefore, the null hypothesis is rejected for significant differences were observed in Speaking Anxiety, Writing Anxiety, and Test Anxiety(dimensions of ELA) as well as in Divergent Thinking Ability (DTA).On the other way, , the null hypothesis is partly accepted for no significant caste-based differences were found in other dimensions of ELA(Listening Anxiety and Reading Anxiety)

Analysis Pertaining to $H_{0.5}$

Table No. 6: Inferential Statistics (t-test) Showing Significant Difference in ELA & DTA in relation to gender

Inferential Statistics: Independent Sample t-Test between Male and Female group		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
DTA Total Score	Equal variances assumed	.054	.817	-3.631	398	.000	-6.370
ELA Total Score	Equal variances not assumed	5.293	.022	.342	391.72	.733	.745

The findings of the independent samples t-test showed a partial acceptance of the null hypothesis which states that "there is no significant difference in English Language Anxiety (ELA) and Divergent Thinking Ability (DTA) between male and female students." There is a statistically significant difference between male and female students in Divergent Thinking Ability (DTA) as indicated by the derived p-value ($p = .000$), which is less than the threshold of 0.05 of significance. As a result, the DTA null hypothesis is rejected indicating that gender has a substantial impact on the capability for divergent thought. On the other hand, there is no significant difference between male and female group when it comes to English Language Anxiety (ELA) as the p-value ($p = .733$) is larger than 0.05. For ELA, the null hypothesis is thus accepted.

7. MAJOR FINDINGS:

- The mean scores of English Language Anxiety (ELA) did not follow a consistent pattern across gender within caste groups. Male students experienced comparatively higher anxiety in some categories (GEN, OBC A, OBC B) on the other hand; female students had higher anxiety in the SC/ST category. Notably, OBC A category students expressed the highest mean of ELA. Female students consistently had higher DTA mean scores across most caste groups.
- Differences between male and female students were minimal across all five dimensions of ELA i.e., Listening, Speaking, Reading, Writing and Test anxiety.
- Students belonging to the General category experienced the lowest levels of mean ELA scores across the dimensions whereas students from OBC A and OBC B exhibited higher anxiety across all dimensions. Overall, socio-demographic variable like caste emerged as a more influential factor than gender in determining ELA levels.
- Significant caste-based differences in ELA were observed in speaking, writing, and test anxiety dimensions but no significant differences were found in listening and reading anxiety dimensions. Divergent Thinking Ability (DTA) also varied significantly across caste groups.
- Gender did not have a significant effect on English Language Anxiety. Significant difference was observed in case of Divergent Thinking Ability where female students comparatively outperformed male students.

8. DISCUSSIONS:

The present study tried to paint a vivid picture of how affective and cognitive factors like ELA and DTA along with socio demographic dynamics interact in ESL classroom and influence language learning outcome. Though ELA mean variations did not follow any consistent pattern, a recurrent pattern was observed in assessing DTA where female students outperformed males across most caste categories. This implies that anxiety and creativity may be inversely related, meaning that students who feel less worry may be more creative. This result is consistent with the findings of Horwitz, E. K. et al. (1986), who stressed the detrimental effects of anxiety on language ability, as well as more recent research (Li & Li, 2024) that connect foreign language acquisition with more creative thinking. Again, the marginal differences in every dimensions of ELA manifested that gender does not significantly influence language anxiety. This result supports recent meta-analytic findings (Li et al., 2024) and prior studies by MacIntyre, P. D. and Gardner, R. C. (1994), which reveals that gender disparities in language-related anxiety are frequently negligible and context-dependent. Caste-based disparities illustrate how learners' subjective responses to learning a foreign language can be affected by their educational and sociocultural backgrounds. This is consistent with recent research that emphasizes the contribution of socioeconomic background on educational experiences (Sandsør & Brevik, 2024). Significant

differences were seen in test anxiety, speaking anxiety and writing anxiety. These results imply that in comparison with receptive language skills, productive and performance-oriented language skills are more exposed to socio-demographic factors. Divergent Thinking Ability, on the other hand, revealed a significant difference in terms of gender when female students possessing greater amounts of divergent thinking abilities. This result is in accordance with more recent studies (Zhang, 2024) that emphasize gender-based disparities in cognitive and creative ability.

9. LIMITATIONS OF THE STUDY:

- Only government-sponsored or government-aided schools in West Bengal where English is taught as second language were included in the study.
- Only selected socio-demographic factors were taken into account in this study. Further research may be done on other demographic factors like location, religion etc.
- Only students in class X who were appearing for their secondary level (Madhyamik) examination were included as the study's sample.
- No third gender was identified while conducting the study.

10. CONCLUSION:

Overall, the findings of the study have provided evidence that, though gender has a limited influence on English Language Anxiety, socio-demographic variables like gender and caste have a considerable impact on both anxiety and divergent thinking abilities. The necessity for instructional techniques that can lower anxiety and promote creativity in language learning environments is made even more apparent by the observed interplay between ELA and DTA. These findings also have considerable potential implications and suggestions for redesigning and strengthening of inclusive education policy, instructional strategies, and curriculum design that aim to improve students' emotional health and creative potential.

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