

Anxiety and Writing Achievement of EFL Learners: A Path Analysis

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Abstract

Research has thus far provided inconclusive evidence for the extent to which foreign language writing anxiety is a determinant of writing outcomes. This study aimed to clarify the effects of anxiety by re-examining its role in the writing achievement of language learners. This was accomplished by examining its association with self-efficacy, a variable believed to be closely linked to anxiety and achievement. A total of 191 Algerian students of EFL (English as a Foreign Language) responded to a survey aimed at measuring writing anxiety and self-efficacy. In order to explain the relationship between the variables, the researchers constructed and tested a model using path analysis techniques via the Linear Structural Relationship (Lisrel) program. Results have revealed that second language writing anxiety is directly associated with second language writing achievement. Anxiety was also found to function as a significant mediator between writing self-efficacy and writing achievement. Some pedagogical implications are discussed.

Keywords : Second language writing anxiety ; self-efficacy ; motivation ; effort ; writing.

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INTRODUCTION

Recurrent observations have revealed tertiary-level language learners' successful completion of writing tasks at an acceptable and sometimes even impressive level, only to complete the same tasks afterwards on evaluated assignments in a manner that sometimes fails to meet minimum standards. According to some researchers, anxiety is what functions as an impediment for students when applying, upon evaluation, already-learned and mastered skills and knowledge. It is believed to incite in the learner a sense of fear, leading the learner to avoid or abandon the second or foreign language (L2) task at hand (Scovel, 1991). Sometimes learners become so preoccupied with such feelings of fear and worry that they end up neglecting the task and performing poorly on it (Sarason, 1986). Moreover, some researchers believe that writing is a tedious and anxiety-provoking task for language learners (Buley-Meissner, 1989) because of the rigorous demands placed on the writer during the composition process.

While a significant amount of research has been found on the debilitating effects of anxiety on language learning, the nature of the effect of writing anxiety on writing outcomes remains unclear, and the literature seem to yield conflicting results. This study aimed to re-examine the role of writing anxiety in writing achievement of language learners by taking into account a number of other variables believed to affect the two constructs.

I. ANXIETY

Anxiety can be described as “a state of apprehension, a vague fear that is only indirectly associated with an object” Scovel (1991, p. 18). Fraiberg (1996) defines it as a “physiological and mental preparation for danger” (p. 11). Dating back to ancient Greek physiology (Crocq, 2015), the study of anxiety has been approached from a cognitive, biological, as well as a theological perspective. It was not until the 19th century that the psychological perspective on the study of anxiety was initiated by Sigmund Freud, who had believed that anxiety was ‘felt’ by an individual as a condition in which he or she experiences feelings of stress, uneasiness, concern, and nervousness accompanied by arousal (Spielberger, 2010).

Researchers have made a distinction between the types of anxiety on several levels. One of these distinctions is between facilitating and debilitating anxiety. Scovel (1978) was the first to make such a distinction. He described the former as a positive form of anxiety, initiating in the learner a sense of motivation to tackle an L2 task. A language learner experiencing facilitating anxiety may handle the task rationally and put forth more effort into completing the task. Scovel (1978) asserts that this type of anxiety motivates learners to fight and overcome the stressful situation and counter the negative effect of anxiety. The role of facilitating anxiety has been proven significant by some researchers. For instance, Park and French (2013) found that learners who were more anxious received higher grades than those who were less anxious.

In contrast to facilitating anxiety, debilitating anxiety is considered as a form of anxiety with rather negative effects, initiating in the learner a sense of fear and leading the learner to avoiding or abandoning an L2 task.

Anxiety categorizations are not limited to the distinction between facilitating and debilitating anxiety. MacIntyre and Gardner (1991) also distinguished between

three types of anxiety: trait anxiety, state anxiety, and situation-specific anxiety. Trait anxiety refers to the tendency to feel anxious in various situations (Spielberger, 1983). It is believed that those who carry the attribute of being anxious by nature may become anxious under numerous circumstances and situations with a greater degree of intensity than most others, including those with state anxiety (Woodrow, 2006). State anxiety, however, varies depending on the state of an individual and what he or she is experiencing. It is believed to be momentary, experienced only at particular instances. It tends to vary depending on experience and through time (Gardner & MacIntyre, 1991). The third type of anxiety is situation-specific anxiety, which refers to a specific feeling of nervousness or unease experienced repeatedly within a given situation or a particular context or setting like performing presentations, taking tests, or participating in class (MacIntyre & Gardner, 1991).

State anxiety reflects the description of someone who is 'anxious at the moment'. Someone who experiences trait anxiety, however, can be described as an 'anxious person'. The former can be described as a fixed personality trait while the latter can be described as a 'right now' occurrence. A third type of anxiety is situation-specific anxiety, a term that was developed based on the belief that anxiety is an individual characteristic that varies depending on situations (Dörnyei, 2005). In other words, it is believed to be trait anxiety experienced differently in different contexts (MacIntyre, 1999).

I.1. Foreign Language Anxiety

Anxiety as an affective variable in learning has attracted the attention of researchers and educators since the mid-1900's (MacIntyre & Gardner, 1989) and has increasingly received attention since its beginning in the 1970s, becoming one of the most widely studied variables in L2 learning. The construct of foreign language anxiety (FLA) was initiated by Horwitz et al. (1986). Horwitz et al. (1986) postulate the theory that FLA is a form of anxiety unique to the language learning context. They define it as the "self perception, beliefs, feelings and behavior related to classroom language learning arising from the uniqueness of the language learning process" (p.128). Hence, FLA has since been considered as a situation-specific type of anxiety specific to the language learning context.

One of the potential causes of language learning anxiety is believed to be the "inherently face threatening environments" of language classrooms where learners are expected to implement a "severely restricted language code" (Dörnyei, 2001, p. 91). Horwitz et al. (1986) also outline three sources of FLA: fear of negative evaluation, communication apprehension, and test anxiety. In the literature, they have become some of the most commonly reported sources of anxiety among language learners. Research on the role of anxiety in language learning has received increased attention since its beginning in the 1970s. Thus far, FLA is mainly considered as a significant source of hindrance for language learners (Xiao & Wong, 2014), supporting the debilitating role hypothesis. Some researchers, (Scovel, 1978), however, found the relationship between anxiety and proficiency to be a positive one, supporting the facilitative role believed to be played by anxiety in language learning. Some, however, found no relationship between anxiety and learning (Swain & Burnaby, 1976).

Researchers have examined FLA in association with numerous facets of language learning, ranging from overall language proficiency (Young, 1986) and achievement (Sener, 2015) to listening (Atashehe & Izadi, 2012) reading (Elkhafaifi, 2005), as well as vocabulary (Chen, 2015) and grammar (Van Patten & Glass, 1999). Based on findings from these studies, FLA can be considered as a major source of inhibition for learners.

I.2. Second Language Writing Anxiety

The field of English as a foreign language (EFL) teaching and learning has also recently shown growing interest in the role of anxiety in EFL writing (Cheng, 2004; Hassan, 2001). Second or foreign language writing anxiety (SLWA) is considered as a skill-specific type of FLA (Bline et al., 2001). Although SLWA is considered to be associated with FLA, it is nevertheless considered as a unique form of anxiety, one which is separate from general FLA (Cheng, 2002). That is, one may experience SLWA but may not other forms of FLA and vice versa. Hassan (2001) describes writing anxiety as “a general avoidance of writing and of situations perceived by the individuals to potentially require some amount of writing accompanied by the potential for evaluation of that writing” (p.4). One of the first studies conduct on writing anxiety was that of Daly and Miller (1975), which focused on L1 (first language) writing apprehension and which had paved the way for subsequent research on writing anxiety not only in the field of L1 writing but also in the field of L2 writing. Daly (1977) also found that the written products of more anxious learners were significantly different from those of less anxious learners. In their essays, the anxious learners used fewer adjectives and adverbs, made more punctuation mistakes, and wrote less overall compared to the non-anxious learners.

Within the field of L2 writing, most research has reported a significant negative association between SLWA and writing performance or achievement. Singh and Rajaligam (2012) reported that more anxious learners procrastinated, produced low quality papers, and avoided writing tasks more than their less anxious peers. Several sources of writing anxiety have been reported: the difficulty associated with writing in English, worry about exam scores, insufficient vocabulary, desire to write better, lack of practice (Liu & Ni, 2015), fear of teacher's negative feedback, high expectations, low self-confidence and insufficient overall linguistic knowledge (Rezaei & Jafari, 2014).

The relationship between SLWA and writing outcomes, however, seems to be rather complicated as researchers believe it can be affected by other variables (Cheng, 2002). For instance, Kean et al. (1987) believed that SLWA hinders writing performance only when the learners are writing under time pressure and that the type of essay being written also plays a role in the learners' level of anxiety. The complicated relationship between the two constructs is reflected in the relatively mixed results yielded by researchers. Although various studies have reported a significant negative association between the two variables (Liu & Ni, 2015; Rezaei et al., 2014), a number of studies have reported non-significant associations (Choi, 2013; Khelalfa, 2018; Madigan et al., 1996).

Potential explanations for such conflicting results may lie in the belief that anxiety is significantly affected by other variables (Cheng, 2002). For instance, Gkonou (2011) asserts that SLWA is influenced by non-linguistic factors such as

self-efficacy (SE). Also, Cheng (2002) found that learners' perceived level of writing competence was a better predictor of writing anxiety than their actual writing achievement. Others also believe that anxiety itself is not the cause of performance; rather, it functions as a mediator to other mechanisms such as SE and confidence of learners possessed during such tasks. Hence, such mechanisms as SE and confidence are believed to be responsible for such effects on learning outcomes (Pajares & Johnson, 1994) in that the level of such mechanisms influences the level of anxiety experienced by a learner, which in turn influences performance.

This assertion is supported by Bandura, the pioneer of SE. He defined SE as one's sense of capabilities to carry out certain tasks or skills (Bandura, 1997). Bandura (1988) asserts that individuals who "believe they can exercise control over potential threats do not engage in apprehensive thinking and are not perturbed by them. But those who believe they cannot manage threatening events that might occur experience high levels of anxiety arousal" (p.77). Those with higher levels of SE are more able to block negative thoughts, are more self-assured and less threatened by challenging situations or assignments (Bandura, 1995). In contrast, it is believed that those with low SE avoid opportunities to improve or practice their skills since they believe themselves to be incompetent and maybe even unable to improve (Linnenbrink & Pintrich, 2003).

SE has also been found to be associated with writing, (Hetthong & Teo, 2013; Khelalfa, 2018). More specifically, Bottomley et al. (1997), Lavelle (2006), and Khelalfa (2018) believed that SE influences the amount of effort put forth in writing by learners. Recent research has reported that SE is a better predictor of writing performance than anxiety is (Khelalfa, 2018; Woodrow, 2011). For instance, Khelalfa (2018) examined the association between SE, SLWA and writing performance and found SE to be significantly associated with performance; SLWA, however, was not significantly associated with performance. Majidifar and Oroji (2015) examined the relationship between EFL learners' writing SE, their test anxiety levels, and their writing and found a strong positive correlation between SE and writing performance. The researchers, however, only found a negative moderate correlation between anxiety and performance. Furthermore, Kirmızı and Kirmızı (2015) examined the association between writing SE and writing anxiety and found a significant negative association between all subcomponents of SE and anxiety. Tola and Sree (2016) also found a significant positive correlation between writing SE and performance as well as a negative association between anxiety and writing.

Another variable believed to affect language learning anxiety is motivation: one of the most widely-reported determinants of success in language learning. Motivation has been found to be responsible for greater effort (Johnson, 1979) and perseverance (Ellis, 1994) in language learning, despite challenging situations. However, motivation is believed to be significantly affected by anxiety (Liu, 2009; Woodrow, 2011) and to significantly affect anxiety (D'ornyei, 2001). If, however, SE (rather than anxiety) is directly responsible for the fluctuation in writing performance due to the greater effort and perseverance (Bottomley et al., 1997; Lavelle, 2006), then it should be the case that SE (rather than anxiety) is directly responsible for any fluctuation in motivation and effort, which should affect performance.

The somehow blurry distinction between the nature of the relationship between anxiety, SE, and writing outcomes is what has motivated this study. After reviewing the above mentioned literature on L2 writing anxiety, there seems to be a need for a study which re-examines its role in second language writing achievement. The researchers saw a need to better illuminate the actual nature of the relationship between SLWA, SE, motivation, and writing achievement of English language learners in order to provide support for one of two viewpoints: 1) writing anxiety functions as the cause of writing outcomes 2) Writing anxiety functions as a mediator between SE and outcomes. A path model was constructed in attempt to answer the following research questions:

1. Is writing anxiety directly associated with writing achievement?
2. Is writing anxiety indirectly associated with writing achievement?
3. Is writing SE indirectly associated with writing via anxiety?
4. Is writing SE associated with effort and motivation for writing?
5. Is writing SE indirectly associated with writing via motivation?

II. METHOD

II.1. Participants

The sample for this study consists of 191 Algerian university students of EFL (English as a Foreign Language) at L'arbi Ben M'hidi University in Oum El Bouaghi, Algeria. The students are all of similar ethnic and geographical backgrounds. Of the total sample, 46 (24.1%) were male, 141 (73.8%) were female, and 4 (2.1%) did not report their gender. First year students covered 40.8% of the sample (N=78); second year students covered 24.1% of the sample (N=46), and third year students covered 33.5% (N= 64). Three (1.5%) students did not report their level.

II.2. Measurement Tools

The sample for this study consists of 191 Algerian university students of EFL (English as a Foreign Language) at L'arbi Ben M'hidi University in Oum El Bouaghi, Algeria. The students are all of similar ethnic and geographical backgrounds. Of the total sample, 46 (24.1%) were male, 141 (73.8%) were female, and 4 (2.1%) did not report their gender. First year students covered 40.8% of the sample (N=78); second year students covered 24.1% of the sample (N=46), and third year students covered 33.5% (N= 64). Three (1.5%) students did not report their level.

II.3. Data Analysis

In order to answer the aforementioned research questions, the researchers used the Statistical Package for the Social Sciences (SPSS) 25 for descriptive statistics and preliminary correlation analyses and Linear Structural Relationship (Lisrel) 9.30 for constructing and testing the hypothesized model. Since the assumption of normality was violated ($p < .05$ on the Kolmogorov-Smirnov and Shapiro-Wilk test) for all variables except anxiety and writing achievement scores, the researchers ran Spearman's correlation for preliminary correlation analyses. A path model was then constructed based on the findings reviewed in the literature and based on results from the preliminary correlation analyses. Kline (1998)

suggested that, to achieve sufficient power, the sample size in structural equation modeling should be the number of parameters multiplied by 10. The model constructed in this study contains a total of 13 parameters: one independent variable variance, eight path coefficients, and four equation error variances. Hence, the sample size for this model should be at least 130. With a sample size of 191, the model should have enough power.

III. RESULTS

I.1. Descriptive Statistics and Preliminary Analyses

Results of the descriptive statistics indicate that scores on the SE scale ranged from 6 to 28 with a mean of 18.40 (SD= 6.91) from a possible score of 44. Scores on effort ranged from 4.5 to 32 with a mean of 20.40 (SD= .26) from a possible score of 44. Scores on anxiety ranged from 0.00 to 79 with a mean of 42.42 (SD=11.54) 10 from a possible score of 88. The range of scores for motivation was eight to 80 with a mean of 51.96 (SD= 12.58) from a possible score of 84. Finally, writing achievement scores ranged from 6.17 to 18 (M= 11.62, SD= 2.12) from a possible score of 20.

Table 1 shows results from Spearman's correlation analysis. Correlations between the variables are relatively in line with previous research as well as the researchers' expectations. There is a significant positive correlation between self-efficacy and effort ($r(191) = .444, p=.000$), between self-efficacy and motivation ($r(191) = .331, p=.000$), and self-efficacy and achievement ($r(191) = .238, p=.000$). Additionally, there is a significant negative correlation between self-efficacy and anxiety ($r(191) = -.339, p=.000$). A significant correlation also exists between effort and motivation ($r(191) = .640, p=.000$) and between anxiety and achievement ($r(191) = -.151, p=.037$). Some of the correlations were, however, not statistically significant, such as the correlations between effort and anxiety, between effort and achievement, and between anxiety and motivation.

Table 1. Spearman's correlation coefficient

		SE	EFF	ANX	MOTV	ACHV
Spearman's rho	SE	Correlation Coefficient	.444**	-.339**	.331**	.238**
		Sig. (2-tailed)	.000	.000	.000	.001
		N	191	191	191	191
	EFF	Correlation Coefficient	-	-.006	.640**	.115
		Sig. (2-tailed)		.937	.000	.113
		N		191	191	191
	ANX	Correlation Coefficient		-	.017	-.151*
		Sig. (2-tailed)			.814	.037
		N			191	191
	MOTV	Correlation Coefficient			-	.203**
		Sig. (2-tailed)				.005

N	191
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SE= writing self-efficacy, EFF= effort, ANX= anxiety, MOTV= writing motivation, ACHV= writing achievement.
*Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Source: Author

1.2. Path Analysis

The researchers constructed a path model that aimed to provide evidence for one of two competing viewpoints on the relationship between writing anxiety and writing achievement: 1) anxiety is a direct predictor of writing achievement, and 2) anxiety mediates the effect of self-efficacy on achievement. Results from the path model are summarized in Table 2. The model appears to have an overall satisfactory fit. The Chi-square fit index ($\chi^2 = 2.83$) was not significant ($df = 2$, $p = 0.243$); hence, the sample data does not deviate from the model. The root mean square error of approximation is 0.047, which is a satisfactory global fit (Schumacker & Lomax, 2010). The goodness of fit index is 0.994 and the adjusted goodness of fit index is 0.956, both of which are acceptable values, indicating a satisfactory fit. Other fit indices are presented in Table 2. In the hypothesized model (Figure 1), seven of the eight paths are significant. The standardized regression coefficients for each direct path are presented in Table 2 and Figure 1.

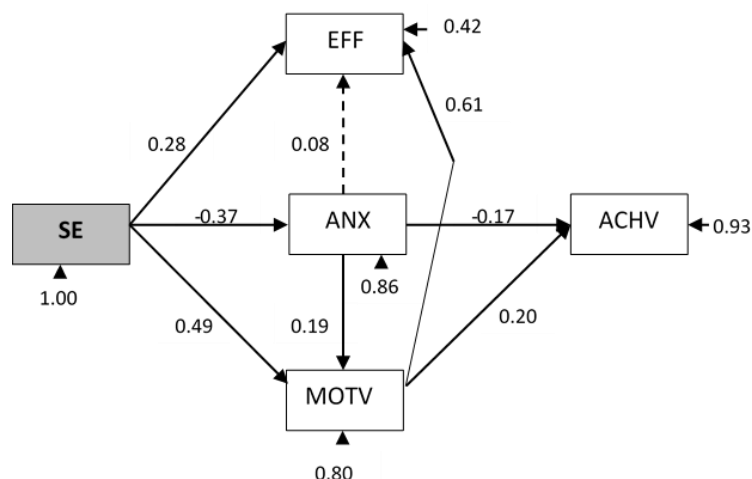
Table 2. Goodness-of-fit statistics and standardized regression coefficients for direct paths

Goodness of fit statistics	Value	Paths	Beta Weights (β)
χ^2	2.83	SE → EFF	$\beta = 0.28^{***}$
P-value	0.243	SE → ANX	$\beta = -0.37^{***}$
Root Mean Square Error of Approximation	0.047	SE → MOTV	$\beta = 0.49^{***}$
Goodness of Fit Index	0.994	ANX → ACHV	$\beta = -0.17^*$
Adjusted goodness of fit index	0.956	ANX → EFF	$0.10 > \beta < -0.10$
Standardized Root Mean Square Residual	0.023	ANX → MOTV	$\beta = 0.19^{**}$
Comparative Fit Index	0.997	MOTV → EFF	$\beta = 0.61^{***}$
Incremental Fit Index	0.997	MOTV → ACHV	$\beta = 0.20^{**}$
Normal Fit Index	0.989		

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: devised by the author

Fig.1. Path model of self-efficacy, anxiety, motivation, and writing achievement



Source: produced by the author

These coefficients, or beta weights, allow for the interpretation of the strength of the effect of each path within the model. The path with the largest path coefficient is the effect of writing motivation on effort ($\beta = 0.61$), after which comes the effect of writing SE on motivation ($\beta = 0.49$). The path from writing SE to writing anxiety also yielded a strong coefficient ($\beta = -0.37$). The other direct paths, with the exception of the path from writing anxiety to effort, also yielded significant coefficients.

In addition to these direct paths, several indirect paths were also tested. Examples are the following: the indirect effects of self-efficacy on achievement via the mediators anxiety and motivation, and the indirect effect of anxiety on achievement via the mediator motivation. In testing for the indirect effect of self-efficacy on achievement via anxiety, the path was found to be significant ($1.96 > t < -1.96$) at the 0.05 level. Furthermore, the indirect and total effects of self-efficacy on achievement via motivation were found to be significant ($1.96 > t < -1.96$) at the 0.05 level. Similarly, the total effect of self-efficacy on achievement, which includes the direct effect as well as the indirect effect via anxiety, was significant ($1.96 > t < -1.96$). Finally, the indirect as well as the total effect of anxiety on achievement via motivation are significant ($1.96 > t < -1.96$) at the 0.05 level.

IV. DISCUSSION

The aim of this study was to re-examine the role of second language writing anxiety in writing outcomes of language learners by also examining a few other variables that have been stated in the literature as factors affecting the relationship between anxiety and performance. This aim was motivated by the inconclusive evidence available in the literature on the extent to which anxiety affects achievement. Hence, the researchers constructed a path model to test two competing viewpoints: 1) anxiety significantly affects writing achievement, 2) anxiety functions solely as a mediator between self-efficacy and achievement. Several conclusions can be made from findings of the current study.

First, findings from the correlation analyses have revealed that writing self-efficacy is significantly correlated with effort put forth in writing, motivation, anxiety, and writing achievement. These findings support previous research that

claims that SE significantly contributes to writing outcomes (Hetthong & Teo, 2013) and that self-efficacy is associated with more effort being put forth into the task (Bottomley et al., 1997; Lavelle, 2006). Furthermore, anxiety was found to be significantly, although weakly, correlated with achievement but not significantly correlated with motivation and effort. Additionally, the correlation between self-efficacy and achievement was higher than the correlation between anxiety and achievement, which supports the assertion that self-efficacy is a better predictor of writing outcomes than anxiety is (Majidifar & Oroji, 2015; Woodrow, 2011).

Second, results of the path analysis have not only revealed that anxiety negatively affects achievement (Liu & Ni, 2015; Rezaei et al., 2014; Singh & Rajaligam, 2012), but they have also revealed that the effect of anxiety on achievement is mediated by motivation. Hence, learners with higher levels of anxiety are likely to have lower levels of writing achievement. Furthermore, not only does self-efficacy significantly affect anxiety, effort, and motivation, but the effect on achievement is mediated by anxiety (Pajares & Johnson, 1994) and motivation. The researchers can, therefore, claim that the level of self-efficacy positively affects their motivation and effort put forth in writing and negatively affects their anxiety levels (Bandura, 1986; 1988). In other words, the higher the level of self-efficacy is, the more effort and motivation and the less anxiety that is experienced. Furthermore, more motivation and less anxiety experienced by a learner in writing as a result of higher self-efficacy will probably lead to higher levels of effort (Ellis, 1994; Johnson, 1979) and higher levels of achievement in writing.

CONCLUSION

This study allows for a better understanding of the nature of the association between writing anxiety, self-efficacy, and achievement. It initially aimed to provide support for two competing viewpoints: that anxiety directly affects writing achievement, and that anxiety functions as a mediator between self-efficacy and achievement. This study provides evidence for both viewpoints, evidence which, to the knowledge of the researchers, has not been reported simultaneously by previous studies.

Despite these significant findings, there are a few limitations to this study. First, the sample consists of solely college students of relatively the same backgrounds. The researchers suggest that language learners at various stages and contexts within Algeria and other parts of the world should be studied. Furthermore, this study does not delve into how these results may be moderated by other factors such as gender or education level. Further research in this respect is suggested.

The researchers suggest a few pedagogical implications. Language teachers should focus on building learners' self-confidence so that their sense of self-efficacy is nurtured. This can be done by praising learners' accomplishments and trying to avoid confronting them in front of their peers. In case a learner makes mistakes, after such positive statements the teacher can then carefully refer back to their mistake. Teachers can also set for learners attainable goals and tasks. Even if the goals are somewhat challenging, when they are attainable, learners are less likely to feel overwhelmed. Furthermore, adding variety to classroom activities and lessons

will likely provide learners an opportunity to learn according to their learning style. This should also help boost learners' confidence, motivation for language learning, effort put forth into the tasks despite any challenges, and it should lower the level of anxiety experienced by learners. As a result, they should see an improvement in their overall achievement.

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