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The effectiveness of teachers' written and verbal corrective feedback (CF) during formative assessment (FA) on male language learners' academic anxiety (AA), academic performance (AP), and attitude toward learning (ATL)

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Abstract

Although corrective feedback (CF) has been studied, more studies still need to be conducted on this variable to check its effects on language learning. Therefore, this study aimed to investigate the effectiveness of teachers' written and verbal CF during the formative assessment (FA) on English as a foreign language (EFL) learners' academic anxiety (AA), academic performance (AP), and attitude toward learning (ATL) in Ahvaz, Iran. Using the convenience sampling method, 76 students were chosen and divided into the experimental group (EG) and control group (CG). The EG received CF during FA, but CG was taught traditionally. After analyzing the data through descriptive and inferential statistics, the results indicated that the teachers' written and verbal CF during FA positively affected the experimental language learners' AP. In addition, the results showed that teachers' CF significantly diminished the EG's level of anxiety. Regarding the learners' ATL English, the results showed that there was a significant change in the pre-test and post-test due to the feedback received from the teacher, which means that learners' ATL enhanced remarkably. Considering the results of this study, a number of conclusions are drawn, and several implications are put forward.

Keywords: AA, AP, ATL, FA, Written and verbal CF

Introduction

Feedback is a kind of assessment that enables instructors to involve individual students in critical thinking about particular parts of their academic work through discussion. While feedback has been found to impact learning outcomes and learner progress significantly, the extent to which this effect is exerted depends on how the feedback is presented (Yu et al., 2021). Written feedback (WF) is one kind of feedback implementation in which instructors are commonly involved and think it necessary to provide it

to students. The tool may help students identify "performance objectives, assess their comprehension level, and become aware of misunderstandings" (Gholami, 2022, p.2). Participants may get insight into the best methods to correct their mistakes, gain precise information about their comprehension or performance, and address existing gaps in their knowledge (Sarandi, 2020). One of the main reasons for focusing on WF is to help teachers find practical techniques for assisting their students in improving their academic language and language skills across all subject areas.

Feedback is essential in FA because it tries to increase student learning through the information provided by the instructor. This information helps learners reactivate and reinforce existing knowledge while also focusing on significant parts of what they are learning, which is critical in FA (Chong, 2018; Sauro, 2009). According to Admiraal et al. (2020), feedback should be transformed into feedforward. To do so, feedback should enhance learning by requiring learners to connect with it and act on its recommendations.

The teachers are always concerned about how to provide feedback effectively to affect the students' performance. There are many factors that the teachers' CF may influence. One crucial factor is AP. The AP considers elements such as intellectual ability, personality, motivation, skills, passions, study habits, self-esteem, and the teacher-student interaction, among others. When there is a significant difference between the AP and the anticipated performance of the student, this is referred to as diverging performance. In fact, investigating and recognizing the factors involved in the phenomenon of academic motivation is an essential step in students' academic achievement. Academic motivation can be reduced or increased under various individual and social factors, including AP, academic self-efficacy, and academic resilience (Zhu & Wang, 2019).

This study is supported by the theory of AP (ToP) developed by Elger (2007). Elger (2007) states that an individual's level of performance helps one understand how close the individual is to achieve the specified outcome. Outcomes are generally established and accessible at the beginning of a task or, as in this study, a module in a course at a university. According to Elger (2007), performance comprises a number of components working together to produce the desired result. The theory emphasizes six foundational concepts that assist in understanding and explaining performance. These components could also assist lecturers with determinants of how performance can be improved. According to Elger (2007), the six components that influence an individual's performance are as follows: context, level of knowledge; level of skill; degree of identification; personal variables; and fixed elements. Teachers are faced with a conundrum when it comes to the notion of performance. By enhancing our performance, we give ourselves the ability to assist others in learning and developing. As recommended by Harvard's Project Zero, the learning-for-understanding approach has been shown to be very effective (Jons, 2019). When individuals learn and develop their performance, they are better able to produce outcomes that make a difference in their communities. Working and learning together to make the world a better place has always been a key purpose of higher education, regardless of the time period or location (Chuang, 2021).

Furthermore, the correction of mistakes by the instructor results in improved AP scores for the learners. Instructors employ different approaches for providing feedback to learners to attain this goal. Some of the strategies used are self-assessment, peer

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feedback, teacher-student conferences, electronic feedback, and WF from the instructor. Of all of these types of feedback, the feedback provided by instructors seems to be the most important in terms of learners' overall growth (Sarré et al., 2021; Zhang & Rahimi, 2014). According to Chen et al. (2016), CF back is the most extensively utilized kind of feedback that learners get worldwide, and it is also the most common type of feedback. In order to improve learners' performance, it is critical to provide them with CF. It directly impacts the process of teaching and learning in the classroom. Pourdana et al. (2021) emphasize that CF may take on a variety of shapes and forms. It may differ depending on its explicitness, focus, the individual giving the feedback, and the media used to provide the feedback. Mohammadi and Yousefi (2019) investigated feedback techniques and discovered that some instructors utilize codes to reply to their students' work in various areas, including mathematics. In the same vein, a research conducted by Rahimi et al. (2021) investigated the sorts of feedback given to students, such as form vs. content, and found that instructors believe CF is more beneficial.

According to Janssen (2017), feedback has a statistically significant beneficial impact on learners' academic progress in terms of grades. Learners who get positive feedback from their instructors do better in examinations and engage in more classroom activities than those who do not receive feedback. In their research on student improvement in written correctness, Carlton et al. (2016) discovered that students who received feedback on their mistakes exhibited significant improvements in their test outcomes. Guasch et al. (2019) investigated the differences in performance between participants who got WF and those who did not get written input. Results showed that students who received constant WF from their instructors performed better in examinations than students who did not get constant WF. According to Chong (2018), positive feedback from professors helps pupils increase their accuracy in expressing thoughts and understanding conceptual notions. In this regard, Mosek and Gilboa (2016) came to the conclusion that WF is useful in developing learners' writing abilities.

Gholami (2022) observed that providing students with feedback on their class assignments dramatically improves their outcomes. Learners will get a thorough understanding of the ideas in this manner. Klimova (2015) discovered that participants' modifications in response to their professors' WF were connected with considerably greater test scores on the next day. Sarandi (2020) argues that written CF (WCF) increases students' accuracy in speaking and writing and has a positive effect on their learning of a language's accuracy in acquisition. Participants who get frequent feedback from their lecturers have increased linguistic abilities such as writing, reading, speaking, and listening, according to Zhu and Wang (2019), who conducted a study comparing the outcomes of students in different language classrooms to reach this conclusion. According to Jons (2019), learners who have more substantial language talents do better in examinations and have a more in-depth comprehension of challenging ideas.

Obviously, proper education and progress in learning English and increasing academic resilience and related academic meaning require identifying the problems in the way students learn in this course (Mohsenpour et al., 2006; Zhang & Rahimi, 2014). Problems with learning English have either intra-personal or extra-personal roots. In-person problems arise from the characteristics of students in their mental processing, resilience, and learning methods, in contrast to external problems from cultural, social, educational

factors, teaching methods, and teachers' attitudes and feedback (Sadler, 1989). One of the most important extra-personal problems is the method of providing teachers' feedback during FA as an integral part of their teaching and learning process.

According to Sadler (1989), the FA approach with appropriate feedback is an approach that is used to assess if students have achieved all their goals. Research on feedback is initially concerned with behavioral theories such as Thorndike and Skinner. Teacher feedback can be defined as how the teacher responds to students' performance, attitude, and behavior according to the identified educational goals. Feedback can be applied in various forms such as corrective, written, verbal feedback, body language and gestures, confirmation of student's statements, encouragement, and criticism. In this research, the teacher CF (written and oral) based on the CF model by Butler and Winne (1995) is emphasized.

One of the important goals of teacher evaluation is that students become aware of their strengths and weaknesses to strengthen the former and overcome the latter (Richardson et al., 2014). The frequency and appropriateness of teacher feedback content are the factors that play a prominent role in the process of resilience and increase the students' ability and motivation to overcome barriers and academic failures (Alonso & Panadero, 2010). Feedback on FA is a compelling feature that improves the teaching and learning process and can be a valuable method. This, in turn, raises the meaning of education and reduces students' psychological stress (Klimova, 2015; Kreitzer & Sweet-Cushman, 2021; Kodal et al., 2022;). These demands will not be possible unless the learner receives accurate, appropriate, and complete feedback in the educational process continuously and purposefully. By giving CF, students will be well-aware of their efforts, progress, and successes in the language learning process. In addition, it enables them to understand their position in learning flow engineering and manage their activities to achieve greater resilience and academic meaning (Li & Barnard, 2011).

Another leading theory that supports this study is Feedback Intervention Theory (FIT). In the FIT, when a person receives feedback demonstrating that an objective has not been accomplished, their focus may be concentrated on one of three levels: (1) the specifics of how to execute the work, (2) the activity as a whole, or (3) the processes that the individual participates in while executing the job (meta-task processes).

More importantly, many foreign language learners (FLLs) have difficulty in learning the language, while others have a more straightforward time of it, and educators have been searching for the reasons for this for quite some time. Underachievers are learners that have trouble acquiring a foreign language and are considered underachievers. Several affective aspects are recognized to be significant in language acquisition, including attitude, anxiety, motivation, and beliefs about foreign language learning, and anxiety has received a great deal of attention as a deciding factor. As Sarré et al. (2021) noted, foreign language acquisition for non-native speakers may often be a terrible experience for language learners. According to Leenknecht et al. (2021), various elements influence acquiring a foreign language, including age, IQ, motivation, attitude, gender, personality, anxiety, etc. Among these factors are: Language acquisition occurs naturally, but learning a foreign language in a formal setting, such as a classroom, presents a number of difficulties for the majority of learners. According to Martin et al. (2017), one of these well-documented difficulties stems from the students' feelings of anxiety.

When it comes to learning a foreign language, language anxiety is believed to be the most detrimental and vital factor that hinders students from achieving success. As described by Karimi (2015), anxiety includes emotions of unease, self-doubt, apprehension, and concern. Yang et al. (2021) described language anxiety as a sensation of tension that is uniquely associated with second language environments, such as speaking, listening to others speak, and learning a second language. Many types of research have been conducted on foreign language anxiety and the problems that might arise from this sensation while participating in tasks such as listening, speaking, reading, and writing (Heckel et al., 2021; Papi, 2010). Anxiety has been found to have a deleterious influence on learners' academic attainment and performance in the classroom. According to Martin et al. (2022), anxiety might lead students to divide their attention between several scenes simultaneously, resulting in their being unable to perform effectively in the classroom. It is important to note that there has been minimal research on reducing and alleviating this negative feeling.

Learners prefer collaboration. If given the opportunity, they can provide and receive essential and valued comments, ideas, and praises from a peer. In language education, peer feedback is a method in which one learner provides feedback to another learner. The comments made by peers are referred to as CF. As a result, CF is a two-way process where one participant collaborates with another. Several learning theories provide credence to the idea of CF. According to the Collaborative learning theory (Bruffee, 1984), learning is a social process that takes place in groups. This is a type of communication amongst peers, and the debates that ensue assist students in negotiating the meaning and knowledge of the material. "Scaffolding," according to Vygotsky (1978), is a term that typically refers to a more experienced peer assisting a less experienced learner in their learning. In his "Zone of Proximal Development," Vygotsky stresses that people's cognitive development happens due to their interactions with others in their social environment. He argues that children's language and cognitive development is best accomplished in conjunction with more competent members of society.

Although English is taught as a foreign language (EFL) in Iran, due to the limited possibilities for students to practice and utilize it in a real-world setting, it is difficult for them to make significant progress unless they are very motivated and active learners. When students are studying in this kind of EFL setting, they are very likely to have some amount of language anxiety, which may have a negative impact on their language acquisition (Chen & Chang, 2004; Sabale et al., 2022).

Anxiety in the second language classroom is a significant concern for ELT scholars (Alsudais et al., 2022; Ang et al., 2022; Hood et al., 2021). According to Martin et al. (2022), speaking anxiety relates to the learner's nervousness when creating the spoken language in front of an audience. Both Horwitz et al. (1986) and Kurt and Atay (2007) assert that speaking anxiety may be viewed as a conceptually unique variable in foreign language acquisition and that the literature supports this. The communication anxiety experienced by students, according to Rassaei (2015), may be burdensome and harm students' adaption to the target environment and the attainment of their educational objectives. In their study on the causes of speaking anxiety, Abdullah et al. (2010) discovered general anxiety, anxiety about being evaluated negatively, and anxiety about communicating successfully.

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Similarly, Yaikhong and Usaha (2012) examined speaking anxiety to construct and validate a scale. An examination of the data utilizing factor analysis revealed that public speaking anxiety, test anxiety, and fear of a poor assessment were all included in the scale established to quantify it. Furthermore, according to Sheen (2008), individual learner characteristics such as anxiety comprise a significant design element that may influence the impacts of CF on the advancement of L2 knowledge and knowledge retention. Because of this, further research into the effects of various forms of CF on L2 acquisition and the moderating effects of individual learner characteristics should be conducted before any conclusions can be drawn about the effectiveness of different kinds of CF.

A variety of causes may exacerbate learners' FL anxiety in language courses. Based on the researchers, Pourmousavi and Mohamadi Zenouzagh (2020), the causes and effects of FL anxiety in L2 learning environments cannot be readily distinguished from one another. According to research, counter-productive ideas and mistaken misconceptions about language acquisition, such as the expectation that one would obtain high levels of competence in a short period of time, may contribute to language anxiety and make the situation worse (Lu & Cutumisu, 2022). Park (2020) discovered that language anxiety is negatively connected with perceived L2 competence, implying that students' false perceptions about their skills may be the source of their worry in language learning situations. There is also controversy about whether anxiousness is the cause or outcome of a failure to do well on a test. A theory proposed by Sparks and Ganschow (1993) suggests that anxiety in foreign language classes may result from issues with processing input and creating output rather than being the root cause of subpar performance. According to Poth (2018), on the other hand, evidence has been presented supporting the more accepted concept that anxiety is the root cause of poor performance.

All in all, knowing the specific methods of language teaching (including the use of effective feedback) can reduce the anxiety of learners and alleviate the difficulties of learners learning a foreign language, and subsequently make the teaching-learning process more enjoyable for learners and create a positive attitude which is effective in learning the language (Tai et al., 2022). Learning through CF is essential to the learning process because it offers learners extra information beyond whether or not their responses are accurate. When it comes to CF, the difficulty level might vary from providing learners with accurate answers to discussing why a particular response was accurate or wrong.

Another important component that is influenced by the CF is one's attitude. Specifically, it is necessary to examine if individual variations such as anxiety and learners' attitudes impact the impacts of various types of CF in ESL classrooms to comprehend the function of CF in these settings. Students' attitudes toward mistake correcting, which may be affected by their cultural and educational backgrounds (among other variables), may impact learning results, among other things. In their study, Oxford and Shearin (1994) found that six elements influence language acquisition: attitude, beliefs about one's own self, learning objectives, entanglements or participation in the process of language learning, environmental support, and one's own personal attitude. Gass and Selinker (2008) further assert that "in every learning setting, neither all individuals are equally driven to acquire languages, nor are they equally motivated to learn a given language" (p.165). Consequently, instructors should be responsive to

students' attitudes about language, especially toward mistake correction, even if it may be claimed that learners' preferences may not be the greatest for language acquisition in the long run (Alsudais et al., 2022).

It is believed that social and psychological characteristics, such as attitude and motivation, play a critical role in acquiring a second or foreign language. Gardner (2004) designed his socio-educational model "Attitude/Motivation Test Battery (AMBT)" to measure several characteristics connected to individual variations, and he has since published his findings. Although many factors influence motivation in second or foreign language acquisition, three of the most important ones are a desire to learn the language, effort put in to learn the language, and good attitudes toward learning the language (Gardner, 2004). It has been stated that CF may either support or impede the processing and development of learning a language depending on the attitude of learners and instructors toward mistake correction as well as the kind of CF used in the learning process (Sarandi, 2020).

Given the possibility that CF might be delivered implicitly, overtly, or in combination, it would be interesting to determine if learners have different attitudes and views regarding the forms of CF available to them. Another, more extensive body of study has looked at how learners interpret feedback and whether or not their views have an impact on their future growth in the second language (Mackey, 2012; Martin et al., 2022; Mosek & Gilboa, 2016). According to Sheen (2004), a questionnaire with a Likert scale of (1-6) was developed to assess language anxiety, attitudes toward mistake correction, grammatical precision, and whether or not learners consider instructors' correction to be valuable and significant. The findings revealed that positive attitudes toward mistake correction and grammatical precision were greater in the explicit group than in the implicit group, with the explicit group outperforming the implicit group. As a result, metalinguistic feedback was shown to be very beneficial to learners. That is, according to Sheen, attitudes toward mistake correction and grammatical precision cannot be anticipated to have any mediating influence if learners are unaware that they are receiving correction. If teachers provide written and verbal feedback appropriate to the student's level of understanding and related to the subject of teaching immediately, it will create a sense of happiness and joy in them and change their attitude.

Furthermore, feedback immediately provided to the student causes the student to have a positive attitude towards continuous learning and be more involved in learning in terms of academic achievement. The final result of this study was that students who received immediate CF reached better AP (Cook & Artino Jr, 2016; Hoorens et al., 2021; Hunnikin et al., 2022; Mainhard et al., 2018). The results of studies have also shown that teachers' feedback has a positive effect on improving the level of emotions of students' academic achievement. Another consequence of their research was that feedback is one of teachers' most important personality and behavioral characteristics in the classroom. Rojas (2015) and Samuel (2021), in their study on factors affecting the academic resilience of high school students, concluded that the variables of academic optimism, parental support, corrective and constructive teacher feedback, self-confidence, positive thinking, and high motivation are among the most important predictors of academic resilience and AP.

Cook (2008) states that CF signifies that learners realize their mistake in using the target language. This sign may be from any source (teacher, classmates, or native speakers). CF is not encouragement or punishment; instead, it only gives learners the knowledge of what they have done, what areas they have succeeded in, and what areas they have failed (Scott, 2005). According to Cook (2008), feedback has different types: explicit correction method, stimulation, repetition, correct reading, and request clarification. In the last forty years, error correction has been a controversial topic in foreign language teaching and learning, which has led to various perspectives in this area (Ellis et al., 2006; Yu et al., 2021). Although many efforts have been made in recent years, it may be argued that there is a need for more research and studies in language teaching on the effectiveness of teachers' written and verbal CF during FA on AA, AP, and ATL of male language learners.

The hypotheses of the present study are:

H0 1: Teachers' written and verbal CF during FA significantly affects male language learners' level of AA.

H0 2: Teachers' written and verbal CF during FA significantly affect the level of male language learners' AP.

H0 3: Teachers' written and verbal CF during FA significantly affects the male language learners; ATL.

Method

Design of the study

This was a quasi-experimental study in which a pre-test-post-test design with a control group (CG) was used. Utilizing Butler and Winne's model (1995), teacher-written-verbal CF during FA was considered as the independent variable. The variables of AA, AP, and ATL were considered dependent variables.

Participants

Concerning the participants, first, the sampling procedure is discussed. The purposive, convenient sampling was used in this study; purposive in the sense that only pre-intermediate EFL learners were recruited, and convenient in the sense that the participants were easily accessible ones who were intended to be representative of the whole population as diverse as possible selected from among those who attended English courses at a junior high school in Ahvaz, Iran. The participants were made assured that their personal information would be kept confidential. They were informed that they are selected to participate in this research, and the obtained data would be used merely for the sake of research. Also, it should be mentioned that other ethical issues such as originality of research and morality were observed as much as possible. A total number of 76 participants between the ages of 21 and 26 years old (two intact classes) were selected. All the participants were male and native speakers of Persian. The selected participants were divided into two equal groups: EG and CG.

Instruments

ATL and AA Questionnaire

The questionnaire used in the survey was developed and administered following Dörnyei's (2005) guidelines and was comprised of two major parts: the first part consisted of items measuring the learners' ATL and AA concerning English learning; the second part consisted of questions about the learners' background information (e.g., nationality, native English teaching experience, overseas experience, and self-rated English proficiency levels). This questionnaire was translated into Persian by Papi (2007), and its validity and reliability were assessed on 1011 Iranian language learners. The reliability of the questionnaire was calculated through Cronbach's alpha, and it was 0.89, and a panel of English experts confirmed its validity.

Academic Performance Questionnaire (APQ)

The AEQ used in this study was a modified version of Pham and Taylor's (1999) questionnaire. It concluded 155 questions and was designed to assess students' classroom progress in relation to other students. A five-point Likert scale was used to score the questionnaire, ranging from "Strongly Disagree" to "Strongly Agree." Regarding the reliability of the questionnaires, Cronbach's alpha index was computed, and it was 0.94, and its reliability was confirmed by those who validated the ATL and AA questionnaires.

Butler and Winne's Correction Feedback Model

> Step 1: At the beginning of the class, the teacher identifies a set of goals and criteria that students must achieve at the end of each topic or lesson.
> Step 2: The teacher determines the topics on which the goals should be designed and the strategies for achieving those goals.
> Step 3: The teacher makes those ways (methods of study) clear that students must have for themselves to achieve the goals.
> Step 4: The teacher elucidates students' strategies to achieve the goals.
> Step 5: The teacher characterizes the consequences of internal learning in students (whether students enjoy learning or not?).
> Step 6: The teacher identifies the observable external consequences (behavioral and functional) of learning for students.
> Step 7: The 7th step is performing FA and providing feedback from the teacher to the students. The teacher provides feedback on how the students are performing and learning. In addition to being informative, these feedbacks cause students to reconsider how they use their learning strategies.

Traditional feedback

In the traditional method of providing feedback, the teacher taught the lesson materials conventionally, which was lecture-based teaching with questions and answers, and traditionally offered feedback.

The implementation of the treatment

> Session 1: Defining goals and criteria related to the content of each chapter at the beginning of the class for students (this activity was done every week).
> Session 2: Provide clear and expressive explanations on what is the appropriate performance in terms of objectives, criteria, and standards specified and accepted (this activity of the teacher was done every week).

In this session, the contents of the previous session were reviewed, a formative evaluation of the previous session's content was performed, and the strengths and weaknesses of students in the form of verbal and WF based on the Butler and Winne's model were identified.

> Session 3: Transferring good qualified information from the teacher to a student about how and how much the student learns (the teacher did this activity every week).
> Session 4: Identify the areas in which the goals should be designed and determine the strategies to achieve these goals. This activity of the teacher was done every week.
> Session 5: Identifying the methods that students have for themselves to achieve the specified educational goals). This teacher activity was done every week.
> Session 6: Identify strategies (cognitive and metacognitive) that students use to achieve goals (this teacher activity was done every week).
> Session 7: Determining the consequences of internal learning, such as whether students enjoy learning or simply and compulsorily study. This teacher activity was performed every week.
> Session 8: Identify external observable outcomes in which the teacher transforms aspects of learning that appear behaviorally or functionally into precise learning objectives. This teacher activity was performed weekly.
> Session 9: Teaching the facilitation and development of the self-assessment process (self-reaction) during learning and facilitating metacognitive strategies by the teacher to students (this activity was done every week).
> Session 10: Give the student enough time to fill the gap between current and desired performance (the teacher did this activity every week).
> Session 11: Transfer of good quality information (good quality information) from teacher to a student about how and how much the student learns). This activity of the teacher was done every week.
> Session 12: Giving the student enough time to fill the gap between current and desired performance). This activity was done by the teacher every week.

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Table 1 Central indicators and dispersion of pre-test and post-test in CG and EG

			EG				CG			
		N	M	SD	Min	Max	M	SD	Min	Max
Pre-test	AA	38	17.89	3.61	10	25	17.00	3.38	11	23
	AP	38	493.49	33.59	439	562	497.34	38.88	419	572
	ATL	38	16.10	3.17	12	23	14.97	2.79	10	19
Post-test	AA	38	13.65	3.13	6	20	16.21	3.82	9	23
	AP	38	579.33	28.74	503	639	511.79	38.08	442	583
	ATL	38	19.23	2.51	15	26	15.94	2.86	10	21

Table 2 K-S test for pre-test and post-test of CG and EGs

		EG		CG	
Variable		Test statistic	Sig. (2-tailed)	Test statistic	Sig. (2-tailed)
AA	Pre-test	.141	.055	.128	.119
	Post-test	.109	.200	.102	.200
AP	Pre-test	.082	.200	.139	.063
	Post-test	.144	.065	.108	.200
ATL	Pretest	.125	.138	.140	.061
	Post-test	.122	.130	.126	.137

It should be noted that at the end of each session, the contents of the previous session were reviewed, a formative evaluation of the content of the previous session was performed, and the strengths and weaknesses of students in the form of verbal and WF based on the Butler and Winne's model were identified. It is worth mentioning that, in this study, the EG learners were taught orally (based on the Butler and Winne's model) and received CF for 14 sessions. During this period, the CG did not receive any intervention. In fact, the tenement was conducted in 12 sessions, and two sessions were devoted to carrying out the pre-test and post-test.

Results

Descriptive statistics

In this section, researchers first examine the descriptive statistics (mean & standard deviation) of research variables (Table 1):

According to Table 1, the EG's mean score of the AA pre-test is 17.89, and the CG's mean score is 17.00. Moreover, the EG's mean score on the AA post-test is 13.65, and CG's mean score is 16.211, which indicates that the EG's AA score decreased after the intervention. In addition, the EG's mean score on the AP pre-test is 493.49, and CG's mean score is 497.34. Furthermore, the EG's mean score of the AP post-test is 597.33, and CG's mean score is 511.790; thus, it can be concluded that AP increased in the EG after the intervention. Lastly, the EG's mean score for the ATL pre-test is 16.105, and CG's mean score 14.97. Besides, the EG's mean score of the ATL post-test is 19.23, and CG's mean score is 15.94, which shows that the EG's ATL increased after the intervention.

Table 3 Regression slope homogeneity test and confirmation of the effect of the auxiliary variable

	Variable	Reception of homogeneous regression slope		Variable	Correlation pre-test and post-test	
		F	Sig.		F	Sig.
Hypothesis1	AA*group	2.52	.11	AA	21.74	.00
Hypothesis 2	AP*group	1.052	.29	AP	22.70	.00
Hypothesis 3	ATL *group	1.942	.21	ATL	17.05	.00

Table 4 Results of ANCOVA for AA

Variable		Mean		Analysis covariance					Partial Eta squared
		EG	CG	Type III sum of squares	df	Mean square	*F*	Sig	
AA	Pre-test	17.895	17.000	166.070	1	166.070	17.350	.000	.192
	Post-test	13.658	16.211						

Inferential statistics

Before analyzing the data, it was necessary to check the normality distribution. Thus, Kolmogorov-Smirnov (K-S) was run.

According to the results of the Kolmogorov-Smirnov test in Table 2, all the *p* values were larger than .05 (Sig.> 0.05); thus, it could be concluded that the distributions of scores for the pre-test and post-test obtained from the groups had been normal.

In the next step, regression slope homogeneity and confirmation of the effect of the auxiliary variable were checked. This was done through ANCOVA, which is presented in Table 3:

According to Table 3, the assumption of homogeneity of regression slope was accepted by ANCOVA since Sig.> 0.05. Moreover, the choice of auxiliary variable (pre-test) as Covariate is confirmed in this study (Sig. <0.05).

Testing the research hypotheses

Hypothesis 1: Teachers' written and verbal CF during FA significantly affects male language learners' AA level

The ANCOVA test was used to confirm or reject hypothesis 1. As can be seen, the necessary assumptions for ANCOVA have been examined, and these assumptions are valid. The results of the ANCOVA are recorded in the following table (Table 4):

As shown in Table 4, teachers' written and verbal CF during FA significantly affected AA (sig = 0.00, *F* = 17.35). Therefore, it can be concluded that the mean of the two groups in the post-test was significantly different from each other. As shown in the tables, the CG's AA mean scores in the pre-test and post-test were 17.00 and 16.21, respectively, while EG's AA mean scores (written and verbal CF of teachers during FA) in the pre-test and post-test were 17.89 and 13.65, respectively. Due to the significant difference between the post-test mean scores in the CG and EG, it was concluded that by eliminating the pre-test factor (Covariate), teachers' written and verbal CF during FA

Table 5 Results of ANCOVA for academic emotions

| Variable | | Mean | | Analysis covariance | | | | | |
		EG	CG	Type III sum of squares	df	Mean square	*F*	Sig	Partial Eta squared
AP	Pre-test	493.49	497.34	90,947.01	1	90,947.01	103.35	.00	.58
	Post-test	579.33	511.79						

Table 6 Results of ANCOVA for ATL. Tests of between-subjects effects

| Variable | | Mean | | Analysis covariance | | | | | |
		EG	CG	Type III sum of squares	df	Mean square	*F*	Sig	Partial Eta squared
ATL	Pre-test	16.10	14.97	148.38	1	148.38	24.80	.00	.25
	Post-test	19.23	15.94						

reduces AA. As a result of the effect of the Eta quadratic coefficient, 19% of the variability of AA in the EG is due to the written and verbal CF of teachers during FA.

Hypothesis 2: Teachers' written and verbal CF during FA significantly affects the male language learners' level of AP

For testing hypothesis 2, ANCOVA was used. The assumptions required for covariance analysis have been examined, which are valid. The results of the ANCOVA are demonstrated in the following table (Table 5):

As illustrated in Table 5, teachers' written and verbal CF during FA significantly affects AP (sig = 0.00, F = 103.35). Therefore, it can be concluded that the mean of the two groups in the post-test after adjusting the pre-test scores was significantly different from each other. Furthermore, the CG's pre-test and post-test AP mean scores were 497.34 and 511.79, respectively. While the mean of this variable in the EG (written and verbal CF of teachers during FA) was 493.49 in the pre-test and 579.33 in the post-test. Due to the significant difference between the post-test mean scores of CG and EG, it can be implied that by eliminating the pre-test factor (covariate), teachers' written and verbal CF during FA increases AP. In addition, due to the magnitude of the effect of the second power factor of Eta, 58% of the variability of academic emotions in the EG is due to teachers' written and verbal CF during formative evaluations.

Hypothesis 3: Teachers' written and verbal CF during FA significantly affects the male language learners' ATL

Like the previous two hypotheses, the authors used ANCOVA to test this hypothesis. Accordingly, the assumptions required for covariance analysis have been met, which are valid. The result of covariance analysis is recorded in the following table (Table 6):

As shown in Table 6, teachers' written and verbal CF during FA significantly affects ATL (sig = 0.00, F = 24.80). Therefore, it is concluded that the mean of the two groups

in the post-test after adjusting the pre-test scores was significantly different from each other. As can be seen in the tables, the CG's ATL mean scores in the pre-test and post-test were 14.97 and 15.947, respectively, and the EG's (written and verbal CF of teachers during FA) ATL mean scores were reported as 16.10 in the pre-test and 19.23 in the post-test. Due to the significant difference between the scores in the post-test in the CG and EG, it can be deduced that by removing the pre-test factor (covariate), teachers' written and verbal CF during FA increases ATL and, according to the effect size, 25% of the variability of attitude in the EG is due to teachers' written and verbal CF during FA.

Discussion

This study aimed to investigate the effect of teachers' written and verbal CF during FA on the intermediate learners' level of AA, AP, and attitude in English language courses in Ahvaz, Iran. The findings of the study showed that the learners' level of AP, whose teachers had given feedback based on the Butler and Winne's model, was significantly higher than that of students who had received feedback using the traditional method. Accordingly, the present study hypothesizes a significant difference between the CG and EGs in the number of academic emotions related to learning. These findings are consistent with the results of prior studies (Alonso & Panadero, 2010; Ang et al., 2022; Cook & Artino Jr, 2016; Hood et al., 2021; Hunnikin et al., 2022; Mainhard et al., 2018; Mohsenpour et al., 2006; Sabale et al., 2022) and inconsistent with the results of the study (Tuvesson & Borglin, 2014).

One of the reasons for explaining these findings is that using appropriate CF during FA improves learner performance and increases students' confidence in achieving their goals in academic careers. This increase in efficiency, effort, and self-confidence provides the ground for promoting AP. Another reason for the present findings is consistent with the study of Mosek and Gilboa (2016), who stated that if the teacher accurately uses positive, negative, and corrective written and verbal feedback in their classroom performance, they can increase students' positive academic emotions and enthusiasm. Researchers' argument for achieving these results is that the teachers' use of CF makes students aware of their strengths and weaknesses. This awareness is the factor for students to be realistic about their academic failures and successes. Therefore, when they fail, according to the information given to them by the teacher in the form of CF, they focus on eliminating their weaknesses, and by removing these weaknesses, they achieve more academic success in the future and, therefore, gradually increase their AP which, in turn, enhances their academic learning. In this regard, Mosek and Gilboa (2016) claim that teachers' appropriate written and verbal CF during the FA make students feel happy and change their attitude. In the same vein, Rojas (2015) believes that the feedback provided immediately to the student causes the student to have a positive attitude towards continuous learning and have more involvement with learning in terms of academic achievement.

Another explanation for the findings of the present study is that the teachers' CF increases not only the students' understanding of their weaknesses and awareness of the test but also it helps the students to be more realistic and rational about their abilities. When a student achieves a goal successfully, his hope and motivation increase accordingly. All in all, teachers' CF causes the student to have positive emotions about

language learning. More clearly, the obligation of teachers to help students "notice" their mistakes rather than correcting them is repeatedly stressed. Instead of its direct contribution to L2 learning, they placed more emphasis on the potential of CF to make learners aware of their mistakes. There have been five different causes offered for this. CF is used to complement other training methods since the impact of CF on L2 learning is not immediately apparent but may become more apparent with time. Second, wherever CF is used, there is a continual focus placed on the emotional well-being of the students. Teacher resistance to adopting CF stems mainly from the fact that their concerns are emotive and practice-oriented in nature rather than from any other factor. Third, instructors' expectations of a flourishing CF are influenced by various elements in their classrooms. Fourth, "foreign language acquisition is a process of shifting from an interlanguage to a target language," according to the definition. This point of view emphasizes the necessity of increasing learner autonomy in language acquisition (Sarandi, 2020). The last point is that instructors' expectations of CF efficacy constantly shift. It is possible to offer teachers CF directly or indirectly, and it may be written or spoken. In most research projects, vocal feedback is given in addition to written feedback to ensure that students grasp what is being communicated to them by their lecturers. It has been shown by Zhu and Wang (2019) that exposing students to both oral and WCF may produce the most beneficial outcomes.

According to Top et al. (2018), the usage of FA is a clear rationale for attaining these outcomes, and this is shown in the following way: It was educators working on approaches to accelerate student accomplishment and forecast how pupils would do on standards-based statewide assessments that initiated the FA process. In the classroom, the advantages of FA are immediately apparent. The use of FA in the classroom as a tool to steer teaching and accurately establish student mastery has several benefits that go well beyond greater exam results, such as increased motivation and engagement. Even while all FA activities have the potential to improve student learning, according to Mohamadi and Malekshahi (2018), some of the distinguishing advantages of FA are as follows. First and foremost, the promptness of outcomes allows instructors to make immediate adjustments to education while students are still learning. For the second time, the learners who have been evaluated are the ones who will profit from the modifications. Students may utilize the outcomes to alter and enhance their own learning in the third instance.

In other words, FA, as opposed to summative assessments, enables students and educators to get a more in-depth knowledge of a student's skills, which may then be utilized to influence remediation, re-teaching, and instructional approach. Teachers collaborate with students while using FA. Teachers want to utilize the information gathered through FA to assist students in mastering the curriculum and in identifying their own personal strengths and shortcomings, among other things. As a result, students who got FA and CF in the current research did better in the post-test than those who received CG, indicating that more focus should be put on FA and CF in the education and training process in the future. Rassaei (2015), on the other hand, found that mistake correction alone, without the provision of additional feedback, was equally as effective as more comprehensive forms of feedback in improving performance (such as explicit explanation).

Concerning the second finding of this study, the results showed that CF during FA has a significant effect on improving students' attitudes toward learning English. Explaining this finding, it can be claimed that the implementation of CF models for a long time has positively affected students' attitudes toward learning English. Providing long-term CF by language teachers improves the level of English learners' attitudes and reduces learners' anxiety, which can eventually lead to a positive attitude. Regarding the second research question, the research finding is consistent with prior studies (Alsudais et al., 2022; Kodal et al., 2022; Kreitzer & Sweet-Cushman, 2021; Mohsenpour et al., 2006).

As seen by both the findings of this study and other studies, it is evident that FA practices positively impact learners' attitudes toward class. FA practices, such as highlighting learning and making up inadequacies instead of grading, teaching groups that require sharing and cooperation instead of individual efforts, and assessing students following individual development levels rather than comparing them to each other, all contribute to students developing positive attitudes toward class. Minor justification identified in this study suggested that formative feedback provided a greater understanding of the expectations and process intended by the instructor. This led to a generally positive attitude towards the course content. Moreover, according to the results obtained in this study, one may infer that it is vital for an instructor to frame formative feedback in a way that still gives voice and choice to the student. This allows the student to maintain ownership over their learning instead of simply fulfilling a narrow view of expectations set out by the instructor. This is one benefit formative feedback has over final summative assessment feedback.

Regarding the third finding of this study, the statistical results showed that teachers' CF reduces the language learners' level of anxiety. Indeed, the teacher's use of various and appropriate CF can make the learning environment stress-free and enjoyable. This finding in the present study is also consistent with the prior studies (Abdullah et al., 2010; Martin & Alvarez Valdivia, 2017; Rassaei, 2015).

According to the outcomes of the current study, students who have access to CF report feeling less stressed in class. This might be a consequence of learner-centeredness, which encourages students to participate rather than just sitting passively in class without any action or dynamic in the classroom environment. Interestingly, this finding corroborated the findings of Kurt and Atay (2007), who investigated the effects of peer feedback on the writing anxiety of prospective Turkish teachers of English as a foreign language and discovered that the peer feedback group experienced significantly less writing anxiety than the teacher feedback group at the end of the study. The current findings contradict Zhang and Rahimi's (2014) claim that EFL learners did not perceive cognitive flexibility as a dangerous metric or a cause of worry. It may thus be reasonably assumed that, as proposed by Ellis (2009), instructors can aid their students in developing positive views about instructional approaches (for example, CF) by making them aware of the aims of such instructional techniques (for example, CF).

More importantly, providing appropriate feedback by the teachers can help learners distinguish their mistakes which, in turn, not only helps them overcome their language learning difficulties more efficiently but also decrease their anxiety. This finding is consistent with the results of the prior studies (Chuang, 2021; Gardner, 2004; Heckel et al., 2021; Kodal et al., 2022; Yang et al., 2021). Furthermore, Rahman et al. (2021) believed

that verbal and non-verbally feedback promotes EFL learners' academic achievement and diminishes their anxiety. On the other hand, Ghahderijani et al. (2021) believe that teacher-student collaboration increases when using explicit and direct feedback rather than indirect feedback. Therefore, the results of the present study are consistent with the views of Sauro (2009), who reported that the feedback-based teaching method is a valuable and effective way to teach English to FLLs.

Conclusion and Implications

The current study concluded that teachers' CF during FA improved the learners' AP and lessened their AA. In addition, it was divulged that learners' attitudes toward teachers' CF during FA significantly developed. Drawing attention on the other studies done in the field of CF, this research, like most other studies, shows that giving CF during FA instruction may lessen students' anxiety, which supports the belief of Kurt and Atay (2007) that providing CF during FA in class has some impacts. First and foremost, it encourages students to assume more responsibility in the learning process. In addition to completing tasks, students must carefully study the work of others to be held accountable not just for one's work but also for the work of others. Second, as compared to the conventional method of providing teacher evaluation, CF gives more variety in the classroom. During the feedback session, students pay attention to the teacher's instructions and collaborate with their classmates to complete additional practice exercises in other abilities. Furthermore, it is beneficial to share one's opinions with peers to build one's confidence. While studying information more successfully, CF enables students to engage with their classmates and develop strong social skills at the same time. Additionally, CF allows students to work as a group rather than as individuals working alone. As a result, practitioners may use CF to improve their English language learning abilities and decrease their anxiety.

The first and most important application of the present study is that learners gain awareness and insight into the emotions of academic achievement related to their learning. Another application of this study is that learners who received CF based on the Butler and Winne's model can use this feedback in their future careers. It is suggested that due to the positive effect of CF on increasing academic achievement, the results of this study can be applied in other schools and educational centers, workshops, and training courses. It is also suggested that this research is conducted on students in other schools and in other parts of the country. This study found that if a teacher uses a variety of CF to correct learners' mistakes, learners' language development will be achieved, their anxiety will be significantly reduced, and their attitude toward learning English will improve. Also crucial to the learning process is that CF gives learners extra information beyond whether or not their responses were correct. When it comes to CF, the difficulty level might vary from just providing pupils with accurate answers to discussing why a specific response was accurate or incorrect. According to Rezai et al. (2022), the feedback includes not only correcting students' mistakes but also providing them with an appraisal of how well they have done, whether during a drill or after a lengthier duration. Teachers must rectify their students' errors, and they must be informed of their errors either directly or indirectly, verbally or in writing.

A key point to remember is that appropriate and crucial feedback can either motivate or demoralize students. It is the teacher's responsibility to ensure that the participant has a realistic assessment of their current position concerning the learning purpose or performance standard and that this assessment positively strengthens what the student is doing well while also denoting where there are clear areas for progression. Correcting a learner may not only encourage them to improve and accomplish at the greatest levels but also may cause them to lose hope and interest in learning. As a result, researchers must tread cautiously while providing comments to stimulate rather than demoralize their students.

Additionally, the formative assessment might entail delivering feedback after an assessment; however, it is more crucial than this feedback being offered during training, allowing teachers to discover learners' misconceptions and assist them in correcting their mistakes. This formative feedback is critical for increasing students' knowledge, abilities, and comprehension, and it is also a vital component in inspiring students to continue their education. Learners must use this feedback offered by the teacher to participate in the proper activities necessary to bridge the gap between their current level of performance and their intended level of performance. For effective student learning to occur, formative feedback cannot be one-sided; instead, it must engage both the teacher and the students to be effective.

Like any other study, this study also suffered from some limitations. The main limitation is that this study was performed on male students, and therefore the results obtained cannot be generalized to female students or should be done with caution. It should also be noted that the present study was conducted in the city of Ahvaz, Iran, and the results cannot be generalized to other geographical contexts. The small number of participants was another limitation; thus, future studies are recommended to consider more participants. Lastly, due to the positive impact of CF during FA, it is proposed to conduct similar studies in other contexts and on other levels of proficiencies to support the results obtained in this study.

Abbreviations

CF   Corrective feedback
FA   Formative assessment
AA   Academic anxiety
AP   Academic performance
ATL   Attitude toward learning
FIT   Feedback Intervention Theory
ToP   Theory of Academic Performance
EFL   English as a foreign language
WCF   Written corrective feedback
EG   Experimental group
CG   Control group
K-S   Kolmogorov-Smirnov

Authors' contributions
All authors in this paper had equal contributions. The author(s) read and approved the final manuscript.

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Declarations

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