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The effect of providing feedback and feedforward in prosody instruction for developing listening comprehension skills by interpreter trainees

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> **The Challenge**
> Few studies have examined the extent to which targeted instruction may help L2 students to take advantage of the subtle meanings communicated through prosodic features. The present study shows that prosody instruction by providing feedback enhances the listening comprehension skills of the interpreter trainees more than by providing feedforward.

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Abstract
The present study examines the effect of feedback (FB) and feedforward (FF) in prosody instruction for developing listening comprehension skills in the nonnative language by interpreter trainees, using a pretest–posttest–delayed posttest design. Three groups of 25 interpreter trainees at Bu-Ali Sina University in Iran took part in the study, all groups receiving the same amount of instruction (10 h over 5 weeks). The control group listened to/viewed authentic audio recordings and movies in English, discussed their contents, and completed a variety of listening comprehension tasks but received no prosody instruction. The first experimental group spent part of the time on theoretical explanation of, and practical exercises with, English prosody by an instructor by providing FB when teaching prosody while the second experimental

group was provided FF when teaching prosody. Versions of Longman's Test of English as a Foreign Language English proficiency test (paper-based) were used to assess listening comprehension at pretest, immediate posttest and delayed posttest. The findings revealed that the prosody instruction by providing FB enhanced the listening comprehension skills of the interpreter trainees more than by providing FF. The practical implications of the study would be that in the given circumstances where only limited curricular time is available for instruction and practice, a judicious choice can be made to lend priority to providing FB in prosody instruction for developing listening comprehension skills by interpreter trainees rather than to the providing FF.

1 | INTRODUCTION

Although listening comprehension skills are crucial for an interpreter's performance, research in interpreting studies has not tackled the complexities of listening comprehension skills and how these language skills should be taught to foreign language learners when the aim is to train interpreters. Because of this scarcity of research, instructors usually resort to general language teaching textbooks, in which more traditional types of listening comprehension skills tasks can be found, namely, multiple-choice, gap filling, true and false, and so on (Cerezo Herero, 2017). In the current educational system of Iran, English is taught as a foreign language for 4 years in public high schools 2 h per week (Borazjani & Bagheri, 2016). Students at first grade learn the English alphabet recognition and basic rules (letter-to-sound correspondences and exceptions), and limited vocabulary (Safari & Rashida, 2015). Then, at next stages, the focus is on reading comprehension skills, grammar, and vocabulary (Sadeghi & Richards, 2015). Students are admitted to the BA study in Interpretation and Translation only if they have a high school diploma and have passed the national entrance exam relevant to the university discipline of their choice. The national entrance exam specifically measures the applicants' knowledge of English (or other languages, e.g., German or French). BA students take Translation as well as Interpretation courses. After 4 years of study, or 155 credits, graduates may pursue a professional career as interpreters. The language combination in a training program is always restricted to two working languages, where language A is the mother tongue (Persian) and language B a nonnative language (here English). Interpreter trainees have to develop their listening comprehension skills based on the needs of their future profession. Through listening comprehension skills, speakers update their knowledge of the language. The semantic, syntactical, phonological, and lexical information that students possess, converge to decode the

message conveyed by a sequence of words. This process turns to be even more complicated if, for example, in interpreting performance, the listening activity requires attention sharing with competing different cognitive processes (Cerezo Herero, 2017).

In training qualified future interpreters, both production and perception skills in the nonnative working language should be emphasized since the key to building interpreting expertise lies in improving the efficiency of the interpreter's production and perception skills, to facilitate the communication of the message (e.g., Lv & Liang, 2018; Yenkimaleki, 2021). Luu et al. (2021) showed that prioritizing prosody by using techniques such as listening to low-pass filtered audio, and repetition in synchrony with body movements, enhanced the English listening comprehension skills of Vietnamese college freshmen. Earlier, Yenkimaleki (2019) found that explicit teaching of prosody and raising the learners' awareness of prosodic differences between foreign (L2) and native (L1) language through formal teaching had a positive effect on the understanding of English speech by Persian listeners. However, the extent to which prosody instruction—and indeed what approach to prosody instruction—optimally helps learners of English as a foreign language (EFL) improve their L2 listening comprehension skills, is still an open question.

Persian–English interpreters were shown to benefit from English prosody awareness training in Iranian context (Yenkimaleki & van Heuven, 2020). Knowledge, whether explicit or implicit, of prosodic differences (and similarities) between the interpreting trainees' L1 (Persian) and L2 (English) contributes to the quality of their interpreting performance. For instance, syllable-timed languages, such as Farsi, tend to have simple syllable structures, no difference between short and long vowels, no diphthongs, and no vowel reduction in unstressed positions (e.g., Dauer, 1983; Nespor et al., 2011), while stressed-timed languages, such as English, allow complex syllable structures with up to three consonants (C) preceding the vowel (V) and up to four following V, and typically contrast short and long vowels (V vs. VV) and have diphthongs. Furthermore, Persian word stress is fixed prefinal, that is, the second but last syllable of Persian words is stressed with no exceptions. The stress system of English is different and more complex ("marked"), and allows stresses to occur in different locations in words, depending on the segmental composition of the syllable ("quantity sensitive," e.g., Kager, 1989), and on the morphology of the word is a derivation or compound. On top of that there are many exceptions and subregularities, which renders English word stress a lexical property, that is, a property that has to be learned by heart (Cutler, 1984). As a result of the mismatch in word stress locations, Persian EFL learners often misstress English words, which compromises their intelligibility (see Yenkimaleki & van Heuven, 2020 for details).

Most previous studies that examined prosody instruction for L2 listening skills targeted the learners' phonological categories, rather than the learners' global listening proficiency (e.g., Yenkimaleki & van Heuven, 2022). The current study addresses this gap, in the context of interpreter training programs in the context of Iran. Therefore, we investigate the effects of providing feedback (FB) versus feedforward (FF) in prosody instruction for developing listening comprehension skills by interpreter trainees.

2 | BACKGROUND

2.1 | Prosody instruction

Prosody is the ensemble of properties of speech that cannot be understood from the mere linear sequence of segments (e.g., an Heuven, 1994, 2022; Nooteboom, 1997). The prominent role of

prosody in speech processing is guiding the division of the continuous stream of speech into smaller units, which can be processed separately. Prosody permits the listener to find sentence boundaries, phrase boundaries, and sometimes even word boundaries. The listener needs these boundaries to reduce the number of competing representations of the incoming structures he has to entertain in working memory (e.g., van Heuven, 2008). English listeners exploit suprasegmental features in word recognition, and stress cues play a prominent role in the initial activation of lexical forms which contribute significant information to word identification (Cutler, 2005).

From the 1980s onward, researchers have been interested in changing the traditional way of teaching listening comprehension skills, moving away from a product-oriented approach toward one which targets instruction for listening subskills and metacognition, including strategies (Graham, 2017; Vandergrift & Goh, 2012; Yenkimaleki, 2021; Yenkimaleki & van Heuven, 2021). The dominant pedagogical activity in the product-oriented listening classroom includes listening to extended spoken texts, answering questions that target comprehension of the text, and checking answers for accuracy. Researchers contend that this perspective is the same as repeating the testing of students' listening comprehension proficiency, and does not provide a fertile ground for enhancing the student's ability to understand speech in the L2 (Goh, 2010). Another perspective to listening comprehension instruction involves the integration of a method that targets specific linguistic features of the L2 (e.g., prosodic features). Scholars and curriculum designers who favor this perspective, point out that prosody is crucial for listening comprehension skills (Cauldwell, 2013; Yenkimaleki & van Heuven, 2021). When the aim of training is communicative competence, students should be proficient enough in making associations between prosodic forms and meanings in the L2 and integrate those meanings into overall listening comprehension processes. So far, few studies examined the extent to which targeted instruction would contribute to L2 students' taking advantage of the subtle meanings communicated through prosodic features. Therefore, this issue demands systematic studies to shed light on it so that the practitioners can apply the results in training future qualified interpreters.

2.2 | FB and FF

Information which is given to students for their performance, or FB, facilitates L2 learning (Panadero & Jonsson, 2020). Studies (e.g., Webb & Moallem, 2016) also revealed that the timing of FB whether it is provided immediately or after a delay may affect learning. It is generally agreed that language students progress better in the L2 if they are provided with explicit FB. FB is provided in an implicit form in nonpedagogic interaction, for example in requests for clarification (implicit negative) and back channeling (implicit positive), on the other hand, in formal language classroom there is a tendency for more explicitness, such as by formal correction (explicit negative), or praise (explicit positive). Providing FB is a complicated process, and because of this, Carroll (2001) stated that FB is intrinsically inferential in nature. In the classroom, where instructors are expected to give FB, students' responses to instructor FB are filtered by their own interpretations of the instructor's intention.

Phrasing our comments so that it can give learners the information they need to take the next steps toward improvement is defined as feedforwarding: Through FF, instructors can concentrate on what the students can do to enhance their performance rather than focusing on their past performance (Conaghan & Lockey, 2009). FB and FF play an important role in the various kinds of teaching approaches. FB and FF aim at supporting the learning process, and

they appear in a variety of forms. The difference is that FF is information about whatever is to be learned that is provided in advance, whereas in FB, information is given about whatever learning has been achieved or about the nature of the error, which has been made. In most learning processes, both FB and FF will play a crucial role (de Bot, 1980). FB and FF can be given by different methods. In the case of FF not only can information be given about the objective set, but also about the way in which that objective can be attained. Similarly, FB can indicate not only whether the objective set has been achieved, but also, why it has or has not been achieved, or why it has been achieved only partially (de Bot, 1980). The FF perspective is set on developmental comments which guide learners to enhance their knowledge construction rather than focusing on shortcomings of their previous performance. For instance, providing FB in a prosody training class such as observing stress patterns of English in utterances focuses on the current learning status and expresses the shortcomings of the work, but does not provide any supportive learning plan for future pronunciation tasks. However, a forward-looking feed such as "Your listening comprehension skills are at intermediate stage. To get to the next stage, here is an example of what you need to do" is developmental and directs the learners while strengthening them to achieve the desired learning goal. The reality of past or present performance is denied in FF perspective, however, it is suggested to a direction toward greater success. FF is not looked upon as a praise (praise is a kind of FB since it labels the past), but it transfers a positive message since it emphasizes opportunity and capacity for enhancement.

One basic issue for providing quality FB is that it should result in FF so that it can be applicable in future work (Orsmond et al., 2011). Feeding forward through proposing strategies for progress, supporting learners to look upon their next steps of learning as well as forwarding to a more dialogic process, is promoted in effective models of FB. If FB is explicit and purposeful and is provided at the right level, it gives information that can help promoting effective strategies to boost learning. Constructive FB is underpinning what quality performance is (feed-up), delivering opportunities to close the gap between actual and desired performance (FB), and supporting the students with the next steps in learning and how to act upon it (FF) (Hattie & Timperley, 2007; Nicol & Macfarlane-Dick, 2006). Crucially, FB has one of the most powerful impacts on learning, but the way in which it is provided can affect whether it has positive or negative effects (Panadero & Jonsson, 2020). Students will experience problems if they have difficulty recognizing the FB, not knowing how to perceive suggestions as to how to make changes to their own performance (Carless et al., 2010).

Hattie and Timperley (2007) offer an effective framework for using FB, elaborating that the purpose of FB is the reduction of discrepancies between current understandings/performance and the desired goal. FB turns to FF when it is forward-looking so that it can boost the students' learning and improve their future performance on assessed tasks (Carless et al., 2010). Therefore, FF means giving useful information to the learner, while it still matters, that will help them perceive where gaps in their performance are, and to use that information to bridge the gaps and move forward. FB that feeds forward can boost learners understanding and achievement level. Students learn faster and much more efficiently, when they have a clear image of how well they are performing and what they might need to do to improve (Carless, 2006).

2.3 | Research focus

As the studies reviewed above claim, prosody instruction is a fundamental element for the interpreter training programs in enhancing the listening comprehension skills of interpreter

trainees for decoding the L2 input messages in their interpreting performance (Yenkimaleki & van Heuven, 2022; Yenkimaleki et al., 2023). In the present experiment, we broaden our horizon to determine which instructional approach works better in enhancing the listening comprehension skills for interpreter trainees. So far, the effect of providing FB and FF in prosody instruction in developing listening comprehension skills by interpreter trainees has not been investigated systematically (Yenkimaleki et al., 2022). Therefore, the following research question was raised: *Which method of prosody instruction yields better listening comprehension skills by interpreter trainees?*

Our hypothesis is that providing FB in prosody instruction will enhance the listening comprehension skills of interpreter trainees more than providing FF.

3 | METHOD

3.1 | Design of the study

To answer the research question we posed, we set up an experimental study in which we quantified the listening comprehension skills of our participants. Listening comprehension was tested with 75 participants at three points in time, that is, a pretest immediately before the start of the treatment, a posttest immediately after the completion of the treatment, and delayed posttest 1 month after the previous test. Pretest, immediate posttest, and delayed posttest were (different but equally difficult, see Section 3.5) versions of the listening comprehension skills test from the standard Longman's Test of English as a Foreign Language (TOEFL) English proficiency test (paper-based version). One control group and two experimental groups were utilized in this study. The independent variable in this study was the method of instruction, that is, providing either FB (experimental group FB), FF (experimental group FF) or neither (control group C) in prosody instruction. The dependent variable was the listening comprehension score obtained by the interpreter trainees.

3.2 | Participants

The participants in this study were 75 Persian-speaking undergraduate students at the University of Applied Sciences in Tehran, Iran. They were a subset of a larger group of 150 undergraduate students (78 women and 72 males in their first, second, or third year), who were majoring in Interpreting and Translation Studies in the academic year 2019/2020 and had expressed an interest in taking an optional course to improve their English listening and speaking skills.[1] None of the participants had studied or lived abroad. They had learned English in secondary school for 4 years, with 2 h of lessons per week. In university, they had studied English language for three semesters before participating in the program at the University of Applied Sciences. The age range of the students was between 21 and 24. They had passed the entrance exam for the Translation and Interpreting department. The male and female applicants were alphabetically ordered (first by family name, second by given name), after which the even-numbered applicants were selected, that is, 39 females (F02, F04, F06, ..., F78) and 36 males (M02, M04, M06, ..., M72). The students were then grouped into three classes of 25 but with an equal division between male and female students as much as possible, in the present case, 13 female and 12 male students per group. This was done by applying a simple

rotation scheme: Numbers X02, X05, X08, ... were assigned to the first group, X03, X06, X09, ... to the second group, and X04, X07, X10, ... to the third group. One class was assigned to prosody instruction with FB, the second group to prosody instruction with FF, while the third group served as a C.

3.3 | Ethics

Ethical approval to involve these participants in the experiments was obtained. All the participants agreed to take part in the research project by signing written informed consent.

3.4 | Procedure

The participants took part in the program for 10 sessions (60 min per session) during 5 weeks, that is, 10 h in all. The general organization of the teaching program is shown in Table 1, separately for the control group and the two experimental groups.

Students in each of the three groups listened to the instructor's explanations about the contents of the materials before listening to audio tracks and/or movies. This was the prelistening stage, in which the instructor prepared the students to listen, that is, talking about the topic of the materials in audio tracks/movies, creating motivation for the listening materials, elaborating on the specific critical vocabularies and the language structure of the materials. The students also received guidance in doing listening comprehension tasks/exercises. In all sessions, the instructor monitored and explained problematic issues raised during practicing and doing the exercises.

The Control group received routine exercises, asking them to listen to authentic movies/audio tracks in American English and to discuss issues brought up in the movies/audio tracks for a total of 600 min. Students practiced intensive listening tasks, which were followed by detailed comprehension questions, for example, inferring the meaning of unknown words. The movies the students watched, were not subtitled or captioned.[2] To help prepare students' expectations about what they are going to listen/watch and to aid in their comprehension, the instructor used warm-up questions, and brainstormed relevant vocabulary. The instructor introduced the topic, and got the students thinking about it. If felt necessary, the instructor presented a short list of keywords occurring in the movie/audio file that students might be unfamiliar with. The meaning of such keywords was illustrated by using them in

TABLE 1 Summary of activities and time spent (minutes) by three groups of participants in the experiment.

Activity	Group		
	Control	Feedback	Feedforward
Listening to instructor explanations/guidance/comments	150	150	150
Prosodic theory, training, and practice with feedback		200	
Prosodic theory, training, and practice with feedforward			200
Audio tracks/movies	450	250	250
Total time spent	600	600	600

disambiguating sentences before the audio file was started. The instructor played the movie clip/audio file first for general comprehension—to allow students to get the main idea. Then, he replayed it several times for the students to grasp more details. The pause button was used when needed to focus on sections students had difficulty in understanding. Next, students were asked to complete an exercise on the corresponding activity. Interesting, and in some cases, humoristic movies/audio files were chosen, covering a variety of topics such as politics, social issues, and scientific findings. Only good quality audio files with clear-voiced speakers were presented. The same procedure was followed in each of the 10 lessons.

The FB group spent 200 min less time on these tasks; during the time freed-up this way, they received awareness training of English prosody in the form of theoretical explanation by the instructor, and practical exercises, for example, listening to audio tracks which exemplified the role of word stress, rhythm, sentence stress, and intonation in changing meaning in English while providing FB to the student's performance in doing the tasks. For example, (1) the instructor stated that he did not understand the learner's utterance so that the students revised the utterances. (2) The instructor used rising intonation to repeat the phrase and stressed the error the students' utterance contained. In some cases, (3) the instructor repeated the beginning of the phrase which contained the error, but stopped before the error to elicit the correction. (4) The instructor gave a short clue to the students on the way an error needed to be corrected. (5) The instructor provided the corrected form and stressed the correction. (6) The instructor gave a short explanation of why an error needed to be corrected and provided the correct form. The instructor employed the following strategies in providing FB: (a) *Recast*: Reformulation of all or part of the students' utterance. (b) *Clarification request*: Indication that what the students have said are unclear or incorrect. (c) *Metalinguistic FB*: Comments related to a problem in the students' utterance but without providing the correct form. (d) *Elicitation*: The instructor asked ask a question to elicit a correct form, and occasionally asked the students to reformulate their own utterance. (e) *Repetition*: the instructor's repetition of a students' incorrect utterance, usually with marked intonation to highlight the error.

The FF group received prosody training for 20 min during each training session. Students received awareness training of English prosody in the form of theoretical explanation by the instructor, and practical exercises, for example, listening to audio tracks which exemplified the role of word stress, rhythm, sentence stress and intonation in changing meaning in English during each training session. Students watched videos and did the exercises, and listened for the shift in word stress (the vowel in the stressed syllable was longer, and the location of the pitch peak changed; the vowel in the unstressed syllable was reduced in quality and duration). The instructor instead of rating and judging the students' pronunciation skills (e.g., word stress, rhythm, sentence stress, and intonation) focused on their development in the future. The instructor noticed the students' pronunciation when they were doing the exercises, and pointed out some strategies for the development of pronunciation skills in the future sessions and asked some questions to get students think about how they might improve it.

3.5 | Tests

In the current study, we tested students' listening comprehension skills at three different times: before the experimental intervention (pretest), immediately afterward (immediate pretest) and 1 month afterward (delayed posttest) (see Appendix A for the raw scores of the three groups). All three tests were (different) versions of the listening comprehension skills test from the

standard Longman's TOEFL English proficiency test (paper-based version). We chose the TOEFL listening comprehension test because it is easy to administer, is standardized, and has several equivalent versions, thus making it ideal for pretest, immediate and delayed posttest experimental designs. It uses a multiple-choice format of 50 items with four alternatives each. TOEFL is a well documented, reliable, and valid test to measure the listening comprehension skills of EFL learners. It has 30 questions about short conversations, eight questions about longer conversations, 12 questions about lectures or talks. The test items do not hinge on the recognition of single words. They always address the global meaning of larger pieces of continuous speech. In a recent publication, we used the TOEFL test as means of testing how much prosodic properties of the spoken items contribute to the overall test results. The use of contrastive sentence stresses and deaccentuation of referents introduced in the immediately preceding context are implemented in the TOEFL materials and serve to assess the contribution of sentence prosody to the testee's comprehension of the input speech (see Yenkimaleki & van Heuven, 2021; Yenkimaleki et al., 2023).

All versions of the test have arguably been tuned to the same level of difficulty, as explained by the documentation that goes with these tests. No psychometric data are available on the paper-based versions of the TOEFL listening comprehension tests. However, the internet-based versions of the test (TOEFL iBT Listening) were reported to have possess substantial validity and reliability. Sawaki and Nissan (2009) studied a sample of 221 EFL testees, who took the TOEFL listening comprehension test as well as a parallel content-based listening test (answering questions about the contents of video-taped university lectures about physics, psychology, and history) constructed by independent experts, and found substantial (product-moment) correlation coefficients between the TOEFL and the criterion scores ($.62 < r < .82$). Reliability (based on Cronbach's α) was .75 for the TOEFL test and .83 for the criterion test. As a further check on the reliability of the TOEFL tests we used, we computed the correlation coefficients for the three tests administered to the 25 participants in the control group. The correlations between the three equivalent tests were very high, $.972 < r < .978$ ($p < .001$ in all pairs of tests, $N = 25$), which indicates excellent test–retest reliability.

3.6 | Data analysis

The data to be analyzed comprise the listening comprehension scores (ranging between 0 and 50) obtained from three independent groups of 25 participants (FB, FF, and C) at three points in time (repeated measures for pretest, immediate posttest, delayed posttest). Given the rather large number of roughly equally difficult items in the test, the listening comprehension score can be considered a continuous variable. TOEFL LC scores are therefore typically analyzed by parametric statistics (e.g., Sawaki & Nissan, 2009; Wagner, 2016). As a further precaution, we checked whether the assumptions of normalcy and homoscedasticity are also met. This was done for the pretest scores only, since these are not affected by possibly differential effects of the treatment. The preliminary analysis indicated that the score distribution did not deviate significantly from normalcy, in any of the three groups separately ($N = 25$, $p = .223$ for FB, .156 for FF, and .544 for C), nor in the combined datasets ($N = 75$, $p = .171$, with Lilliefors significance correction). We applied the Shapiro–Wilk test to the separate groups, and the Kolmogorov–Smirnov test to the combined group, as recommended by Mishra et al. (2019, p. 70). Finally, Levene's test of homogeneity of variance showed that the requirement of homoscedasticity was fully satisfied, Levine's statistic $(2, 72) = .085$ ($p = .918$).

Since all requirements on the data for parametric testing are met, the central analysis was done by a repeated measures analysis of variance (RM-ANOVA) with Moment of testing as a within-participant factor, and Method of instruction as a between participant factor. We applied Greenhouse–Geisser correction to the degrees of freedom even when the Wald statistic did not show that the assumption of sphericity was violated. In the tables in the next section, however, we report the uncorrected degrees of freedom for the sake of transparency. Follow-up analyses will be presented for separate conditions, either in the form of one-way RM-ANOVAs for the three groups separately, or as one-way ANOVAs for independent groups at each Moment of testing. Since we always compare the effects of three conditions, post-hoc analyses are required if an effect is significant, with Bonferroni correction for multiple comparisons. Partial eta squared ($p\eta^2$) is reported as the measure of effect size.

4 | RESULTS

Figure 1 shows the mean scores obtained by each of the three groups of participants (FB, FF, and C) in the pretest, immediate posttest, and delayed posttest.

The RM-ANOVA (see Section 5) shows that the main effect of Group was insignificant, $F(2, 72) = .607$ ($p = .548$, $p\eta^2 = .017$). However, a highly significant main effect was found for Moment of testing, $F(2, 144) = 224.5$ ($p < .001$, $p\eta^2 = .757$), with mean scores of 35.6 for pretest, 36.9 for immediate posttest, and 36.6 for the delayed posttest. Moreover, each group differed significantly from the other two by a post-hoc test with Bonferroni correction for multiple comparisons ($\alpha = .05$). Crucially, the Group × Moment interaction was highly significant, $F(4, 144) = 29.7$ ($p < .001$, $p\eta^2 = .452$). Consequently, we analyzed the differences among the
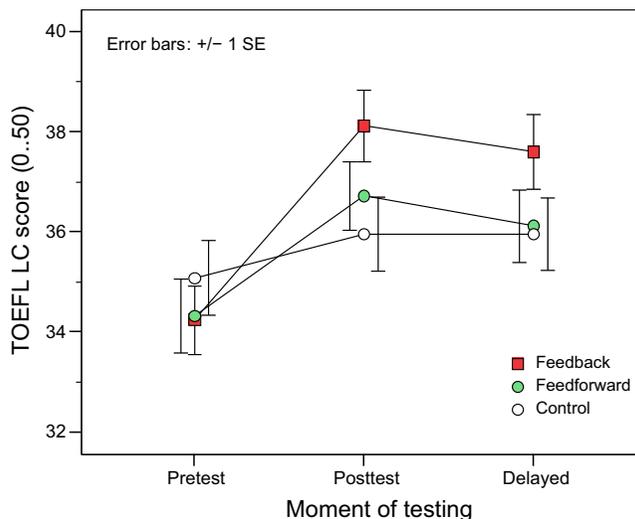

FIGURE 1 Scores obtained on TOEFL Listening Comprehension test by three groups of participants (feedback, feedforward, and control) before the intervention (pretest), immediately after the intervention (posttest) and 1 month after the intervention (delayed posttest). $N = 25$ per group. Maximum score = 50. Chance-level score = 12.5. Error bars are ±1 standard error. [Color figure can be viewed at wileyonlinelibrary.com]

TABLE 2   Summary of descriptive and inferential statistics on test results.

Group	Pretest	Posttest Immed.	Delayed	Gain	Loss	Within-subjects ANOVA $F(2, 48)$	p	$p\eta^2$	Posthoc
Control									
Mean	35.08	35.96	35.96	0.88	0.00	18.9	<.001	0.448	P < D = I
SD	3.74	3.71	3.59	0.79	0.82				
Feedforward									
Mean	34.32	36.72	36.12	2.40	.060	51.1	<.001	0.680	P < D < I
SD	3.69	3.40	3.62	1.29	0.96				
Feedback									
Mean	34.24	38.12	37.60	3.88	.52	203.1	<.001	.898	P < D < I
SD	3.41	3.55	3.75	.93	1.01				
Between-Subjects ANOVA									
F	.4	53.0	27.3	53.0	2.9				
df	2, 72	2, 71	2, 71	2, 71	2, 71				
p	.665	<.001	<.001	<.001	.064				
$p\eta^2$	.011	.599	.435	.599	.017				
Posthoc	C = B = F	C < F < B	C < F < B	C < F < B	C = B = F				

Note: Means and standard deviation of scores on the TOEFL Listening Comprehension test (maximum score = 50) obtained by three groups of participants at three points in time. Gain (Δ Pretest – Immediate posttest) and Loss (Δ Immediate − Delayed posttest) are specified. Post-hoc contrasts were Bonferroni corrected (α = .05).

Abbreviations: B, feedback; C, control; D, delayed posttest; F, feedforward; I, immediate posttest; P, pretest.

groups separately at each of the three moments of testing, and also tested the differences among the groups in terms of their gain from pretest to immediate posttest, and subsequent loss from immediate to delayed posttest. The descriptive and inferential details of these analyses are given in Table 2. The raw data are included in Appendix A.

A one-way ANOVA on the pretest scores, with Group as a between-participants fixed effect, shows that the small differences among the three groups of participants are insignificant. This confirms our claim that the three groups, which were randomly sampled from the larger population of interpreter trainees, possessed equal listening comprehension skills before the intervention.

At the immediate posttest, however, the effect of Group was significant, when the pretest scores were included as a covariate. Each of the three groups differed significantly from the other two in the post-hoc test in the order C < FF < FB. At the delayed posttest, a similar but somewhat smaller effect was found, again with significant differences between any two groups, in the order C < FF < FB.

In the next stage of the analysis, we determined the significance of the Gain between pretest and posttest score, and subsequent Loss after 1 month, by separate one-way RM-ANOVAs for each group of participants. Each group gained significantly, with the smallest gain (.9) for C, intermediate gain (2.4) for FF, and the largest gain (3.9) for FB. The Gain was significantly different between each pair of groups. The subsequent Loss after 1 month was zero for C, larger

(.5) for FB, and a little larger still (.6) for FF. However, the differences in Loss fell short of significance, and constitute a trend at best.

To sum up, we found, as expected, that the three groups of interpreter trainees possessed equal listening comprehension skills at the beginning of the intervention. Immediately after the intervention, all three groups had significantly increased their listening comprehension scores, but the gain was small for the control group C, intermediate for the group that had received prosody awareness training with FF instruction, and largest for the group with prosody awareness training reinforced by FB instruction. The two groups that had received prosody awareness training lost a significant half point on the test score 1 month after the intervention; the control group sustained no subsequent loss.

5 | DISCUSSION

Previous research has revealed that prosody instruction can boost the listening comprehension skills of interpreter trainees (Yenkimaleki & van Heuven, 2016; 2021). The present study sought to determine the choice of appropriate methodology (providing FB or FF) in teaching prosody to interpreter trainees when developing listening comprehension skills. The results of the study showed that providing FB in prosody instruction develops listening comprehension skills of interpreter trainees better than providing FF. This, of course, does not mean that no attention should be paid at all to providing FF in prosody instruction in developing listening comprehension skills for interpreter trainees. Our results show a contribution of providing FF when prosody teaching to the development of listening comprehension skills. So future studies should be done in finding the optimal division of labor to be spent on providing FF versus FB when prosody teaching to the development of listening comprehension skills for the interpreter training curriculum: how much time and effort should be allocated to each of these aspects and how should the activities be ordered?

It should be pointed out, however, when giving FB, instructors should not only make sure that the students interpret the FB as corrective but that the students should also be able to recognize what the FB is about and what to do with the FB. According to Lyster, (2012), instructors should try to consider the whole range of strategies they have at their disposal in providing FB rather than relying on recasts. Therefore, they suggested that professional instructors are those that use a wide range of corrective FB types which suit the instructional context. Research (e.g., Mackey, 2007) has revealed that depending on the type of target structure, students may or may not perceive the corrective force of the FB specifically on the context where the FB is given implicitly such as in recasts. For example, students may have less difficulty perceiving target structures that are more important in the input such as segmental categories (Yenkimaleki, 2019) or those that are physically more noticeable because of the formal or positional properties. However, if the targeted forms are not important and the FB is also implicit, chances are that the FB may not be perceived. In these types of cases, instructors have to employ explicit methods in providing FB so that students consider them FB. It has been shown that FB will be beneficial for the language forms for which students have a sufficient level of proficiency. This implies that instructors should provide FB which matches students' developmental readiness. However, it should be taken into account that every class includes students who may have different developmental needs. If students have their own linguistic needs and if this varies across them, FB techniques that can accommodate student variability are suggested. However, that as the explicitness of FB increases, it can also become more corrective. Some scholars have stated that being corrective during negotiation can be face

threatening for some students (e.g., Lyster et al., 2012), which can then negatively affect students' responsiveness to FB. When the instructors overtly correct the students' errors in front of other students, the face-threatening nature of FB would be increased. Furthermore, the face-threatening nature of FB may also increase when the instructor tries to push the student to self-correct, especially when the student does not know the correct form (Long, 2007). These concerns suggest that we should balance the provision of required FB and the students' responses and underlines the crucial role of the instructors' skills to employ their interactional strategies to suit students' characteristics and context.

Feeding forward, as a pedagogical intervention, would provide crucial pieces of information that can help learners realize the given task according to their expectations. Moreover, feeding forward may include the content and the actions salient to achieve the task. This perspective can be related to giving clear instructions for the task description, the process and the required strategies and instruments to do the task (Duncan, 2007). Over 90% of the instructors stated that it is either salient to provide FB to the learners that includes student-specific scaffolds to support students to the next level (Dulfer & Akhlaghi Koopaei, 2021). If the instructor gives FF to the whole class as instructions, it would be incorporated in the tasks produced by the learners and boost learning (Roberts & Eady, 2012).

One of the strategies that instructors may provide FB about assessment tasks is a rubric. Generally, a rubric is provided in the form of a rating scale and, if it suits within the criterion-referenced framework to interpret the quality of learner's performance, it can be perceived as evidence of learning (Griffin & Francis, 2018). By representing an explicit action as evidence in rubrics, learners can have a better perception of the next steps in achieving the task. Thus, rubrics, which are chosen appropriately, adequately, accurately and authentically, can be employed as the instruments to FF by contributing in constructively aligning the goals of the student with the goals of the instructor (Dulfer & Akhlaghi Koopaei, 2021).

6 | CONCLUSION

The present study investigated the effect of FB and FF in prosody instruction for developing listening comprehension skills by interpreter trainees. Overall, the results showed that providing FB in prosody instruction boosted the listening comprehension of interpreter trainees more than providing FF. Knowledge (or awareness) of the prosodic features of a target language seems to contribute to developing listening comprehension skills. In line with our research, we suggest that where limited curricular time is available for instruction and practice, the better educational choice is to provide FB rather than providing FF in prosody instruction in terms of developing listening comprehension skills for interpreter trainees.

This study, of course, has limitations. The participants of this study were just 75 interpreter trainees. We did not have access to the large number of interpreter trainees. Another study can be set up with large number of interpreter trainees to verify the results of the study. It would also be helpful to replicate our experiment with students from different L1 backgrounds to confirm generalizability of our results in this study. Future studies also could set up to investigate the effect of FB and FF in prosody instruction for developing speaking skills by interpreter trainees.

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ENDNOTES

[1] The total number of BA students in the year 2019/2020 registered in the department was 543. The BA diploma requires 155 credits of obligatory courses. Students are invited to take additional optional courses (for a total between 0 and 20 credits), which on successful completion are listed on their diploma. The present optional course earned the student 1 credit. Other options were, for instance, advanced writing, court interpreting, and translation of scientific documents.

[2] Captioning refers to the process by which the audio content of a video, such as speech and other sounds, is converted into texts and are displayed on the screen (Hayati & Mohmedi, 2011).

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APPENDIX A

Participants' scores on the Longman's TOEFL Listening Comprehension test. In each group, participants ($N = 25$ per group) are listed in descending order of the pretest score. Maximum score = 50. T1: pretest, T2: immediate posttest, T3: delayed posttest.

Participant	Groups								
	Con.			Exp. feedback			Exp. feedforward		
	T1	T2	T3	T1	T2	T3	T1	T2	T3
1.	41	42	41	40	42	41	41	42	42
2.	41	41	41	40	44	43	40	41	40
3.	40	40	40	39	43	44	40	41	41
4.	39	41	40	39	43	42	39	42	42
5.	39	40	40	37	42	43	38	40	40
6.	39	39	39	37	41	41	38	40	40
7.	38	40	39	37	42	41	37	40	41
8.	38	39	40	37	40	41	37	38	37
9.	37	38	37	36	41	40	36	40	37
10.	36	36	37	35	40	39	36	37	36
11.	36	37	36	35	39	37	34	38	38
12.	35	37	38	35	38	38	34	38	35
13.	35	36	37	34	38	39	34	36	37
14.	35	36	35	34	39	36	33	36	36
15.	34	34	34	33	35	35	33	33	32
16.	34	35	36	32	36	36	33	34	34
17.	33	34	34	32	35	34	33	37	36
18.	33	33	34	32	36	35	32	33	32
19.	33	35	35	32	35	36	32	36	35
20.	32	32	32	31	36	35	30	33	32
21.	32	32	33	31	35	34	30	32	32
22.	30	31	30	30	34	34	30	34	33
23.	30	30	31	30	33	32	30	32	31
24.	29	31	30	29	34	33	29	33	33
25.	28	30	30	29	32	31	29	32	31