Implicit/explicit knowledge and its contribution towards tense consistency employment across EFL learners’ proficiency levels

Amir Reza Asiyaban, Mortaza Yamin, Mohammad-Sadegh Bagheri and Lotfollah Yarmohammadi

Abstract: Taking into account the implicit/explicit knowledge of Tense Consistency (TC), this study aimed to investigate TC observance across Iranian EFL learners’ proficiency specifically at elementary, intermediate and advanced levels. To achieve this, the Oxford Placement Test, Gap Filling Task and Spoken Performance Task were administered to 154 learners. The goals were to categorize the participants into three proficiency levels, assess their explicit TC knowledge, and to evaluate their implicit TC knowledge respectively. The results endorsed the linearity of the explicit utilization of TC across proficiency groups; however, the implicit use of TC was demonstrated to be nonlinear, with the elementary learners outperforming the intermediate ones. Accordingly, the researchers suggested the introduction of a new term “tick-shaped improvement”.

Subjects: Language Teaching & Learning; Languages of the Middle East; Persian

Keywords: implicit/explicit knowledge; tense consistency; U-shaped learning; metalinguistic knowledge; linearity; non-linearity

ABOUT THE AUTHORS
Amir Reza Asiyaban holds a PhD in TEFL. He has been teaching in different language institutes and universities. He is also a CELTA holder. His main areas of interest are educational psychology, teaching strategies, teacher education, syntax and motivation.

Mortaza Yamin, assistant professor emeritus of Shiraz University, is now an academic member of Zand Institute of Higher Education. His research interests include language teaching methodology, testing and phonology.

Mohammad-Sadegh Bagheri holds a PhD in TEFL. Currently, he is a member of staff at the English Department, Islamic Azad University. His main fields of interest are international exams (IELTS, TOEFL), teacher training, teacher development, assessment and research.

Lotfollah Yarmohammadi is a professor of English and linguistics in Shiraz University. He received his PhD in Linguistics from Indiana University, U.S.A., in 1964. His areas of interests are pragmatics, contrastive analysis, language teaching and syntax.

PUBLIC INTEREST STATEMENT
L2 learners might possess two types of knowledge. The first is the conscious understanding of the L2 rules whereas the second is the unconscious understanding of the rules of that language. This research investigated the correct use of the verb tenses within a sentence in relation to other verb tenses. This was achieved by taking into account the two types of knowledge. Initially, 154 learners were selected and categorized into elementary, intermediate and advanced groups. Two instruments were used to gather the relevant data namely, a Gap Filling Task and a Spoken Performance Task. The findings suggested that the elementary learners who lacked the conscious knowledge were better at using the correct verb tenses than the intermediate ones who possessed both types of knowledge. Therefore, if learners lack the conscious knowledge of some L2 grammatical rules, they can use them better. The reason can be that they have no need to focus on the rules when speaking.
1. Introduction
Grammar acquisition is considered an inseparable part of second/foreign (L2) language acquisition. This notion is referred to as the linguistic maturity which is acquired by learners and manifested through their linguistic behaviors which conform to those displayed by native language speakers (Chomsky, 1995). One of the subcategories within the domain of grammatical development under intensive investigation for a considerable time is tense acquisition (see Bardovi-Harlig, 2000; Slabakova, 2002). L2 language learners perceive mastery over the tense system as being a difficult task to accomplish although its instruction unsurprisingly seems not to be as problematic (Larsen-Freeman, Kuehn, & Haccius, 2002).

One aspect of tense acquisition, which is of paramount significance in the process of second/foreign language learning, is germane to not only the knowledge of the verb conjugations in off-line processing, but to their real-time uses in temporal relations with other verbs in a given linguistic context (Nelson, 2017; Roberts & Liszka, 2013). Throughout the learning process, L2 learners manifest their knowledge of the target language temporal system; however, the appropriate on-line implementation of that knowledge with regard to the discoursal relations among tenses falls short of the overall expectation (Vaezi & Alizadeh, 2011). This notion, conceptualized in the field as Tense Consistency (TC) (Han, 2002), has long been probed by researchers from several perspectives.

2. Tense consistency
Tense consistency refers to the maintenance of appropriate verb tenses in semantically linked clauses and sentences (Grammarly Inc, 2018). For instance, in the following sentence, the temporal relation between the tensed verbs is maintained since both refer to the past.

He had a good life when he was a teenager.

However, tense consistency has not been observed in the following example since the appropriate tense has not been maintained throughout the clause.

*He has a good life when he was a teenager.

3. Implicit vs. explicit knowledge
The discrepancy between implicit and explicit knowledge is germane to the availability of the knowledge for automatic processing as opposed to the accessibility of that knowledge for controlled processing (Ellis, Loewen, & Erlam, 2006; Hulstijn, 2005). Explicit knowledge includes the exploitation of the obtained knowledge when learners are making conscious linguistic judgments (Tokowicz & MacWhinney, 2005). As such, getting involved in off-line processing tasks which allot learners adequate amount of time to deploy their metalinguistic knowledge can be a sound means toward measuring this knowledge (Ellis, 2005). On the other hand, owing to the difficulty of the learners’ implicit knowledge to be tapped into, an instrument such as oral production task which demands learners’ on-line processing can be an appropriate means of eliciting the implicit knowledge (Ellis, 2005). Accordingly, for measuring the explicit knowledge, we made use of a gap filling task (GFT) and for testing the implicit knowledge, a spoken performance task (SPT).

4. U-shaped learning
The concept of U-shaped learning exists in the process of second language acquisition. As Saville-Troike (2006) puts it, progression in SLA can be observed through the emergence and rise in the ungrammatical utterances on the part of the L2 learners. For instance, second language learners might initially demonstrate their linguistic ability to produce an error-free plural form such as feet. Then, their conscious knowledge of the grammatical rules about plural morphemes might lead to their erroneous production i.e. *foots. Finally, owing to the mastery achieved over the L2 linguistic system, second language learners will again become adept at producing error-free utterances i.e. feet. This phenomenon has been referred to as U-shaped learning (Carlucci & Case, 2013; Saville-Troike, 2006).
5. Literature review

Among the pioneers in the area of tense consistency, Godfrey (1980), Chappel and Rodby (1983), Noor (1985) and Declerck (1990) are noteworthy. Godfrey (1980) asserted that the tense continuity defiance did not decline with the increase of the learners’ language proficiency. He observed no pattern of gradual decrease in the rates of errors from low-proficiency learners to high-proficiency ones. Lower level participants in his study committed fewer tense-use errors compared with higher level ones who attempted to keep the past tense continuity through the use of more difficult tenses.

The same problem regarding the inappropriacy of the tense use was observed in the study of Chappel and Rodby (1983). The participants failed to deploy the accurate tense shifts and thus made use of generic present tense in a passage that required the past tense. Having analyzed the compositions of the ESL learners, they ascribed the setback to both learners’ lack of understanding of the influence of the temporal stance and context on tense use, and also learners’ not knowing of what function tense plays in a given discourse.

A similar problem was manifest in the study of Noor (1985) in that his participants made errors in terms of choice rather than form. The learners had less difficulty producing form-based verb conjugations than making good choice of verbs in a given context.

Recent studies have also addressed the problem of tense-use inappropriacy on the part of the learners (Liu & Zhu, 2010; Vaezi & Alizadeh, 2011; Zawahreh, 2012; Liu, 2012; Roberts & Liszka, 2013; Thomas, 2014; Soleimani, Jahangiri, & Gohar, 2015; Nelson, 2017; Morgan, 2018; among many others). Liu and Zhu (2010) conducted a study on a group of Chinese EFL learners in order to investigate the effect of recast on tense consistency accuracy development. Analyzing the performances of the participants in written and oral tasks, they came to the conclusion that recast played a crucial role in boosting tense consistency observance especially in meaning-centered oral performance.

Vaezi and Alizadeh (2011) conducted their study on 26 university students majoring in mechanical, railway and electrical engineering at Iran University of Science and Technology. Deploying the think-aloud technique in the completion of the tense tasks, they found that the inaccurate use of the passive voice was one of the sources of the L2 learners’ errors in their study. Zawahreh (2012) analyzed the corpora of 350 participants in his study and reported the most typical errors in different linguistic areas. Based on his findings, the most frequent errors in the domain of tense were those pertinent to the inappropriate utilization of present tense in place of the past tense. In a similar way, Liu (2012) investigated the tense errors of the compositions of Chinese freshmen so as to address the question of the frequently-committed tense errors. The findings of the study demonstrated that the misuses of the present and past tenses were more rampant than all the other tenses. Liu attributed such a problem to such factors as L1 transfer, L2 influence and cognitive factors.

Roberts and Liszka (2013) investigated the sensitivity of L2 learners to the tense/aspect incongruity between temporal adverbial located at the front of a sentence and the following inflected verb. The participants of their study were German and French learners of English. The results showed that only French participants manifested awareness of the related mismatches. German L2 learners, on the other hand, illustrated mismatch detection failure. Similarly, Thomas (2014) believes that the observance of the sequence of tense is a problematic area for the L2 learners of English given that the verbs deployed in the same clauses seldom conform to the first tensed verb.

The accuracy of the on-line utilization of past tense based on implicit and explicit instruction was investigated by Soleimani et al. (2015). They found that both types of instruction (implicit and explicit) equally enhanced the appropriate use of the past tense with no superiority of one type over the other.
Nelson (2017) selected ten learners of English with different first languages as the participants of her study in order to examine whether or not formal instruction of verb tenses would be equally beneficial for all of the participants. The results suggested that formal instruction taking place in a communicative context would deepen learners’ understanding of verb conjugation. Moreover, it would help learners put such knowledge into practice.

Morgan (2018) investigated the effect of writing post-input on the use of tenses and verb conjugation. He conducted the study on Arab learners of English from one university in Saudi Arabia. He selected two classes and provided input for only one of them. After comparing the performances of both groups Morgan concluded that the provision of input had no significant influence on the production of the learners as the errors were similar in terms of cause and quantity.

To sum up, one can say that the studies related to tense consistency (TC) have addressed this issue from a range of perspectives including error correction, error analysis, and input provision (to mention a few). However, little is known about this problematic area with regard to its implicit/explicit knowledge across proficiency levels. Thus, the purpose of this study is to fill this gap by investigating the observance accuracy of TC across three proficiency levels (elementary, intermediate, and advanced) taking into consideration the implicit and explicit knowledge of the L2 learners in this area.

In the spirit of giving the research some degree of specificity, only compound sentences, made up of a main clause and a subordinate clause connected via subordinating conjunctions (but, and, because, etc.), will be the primary focus. Hence, the general and main construct of the current study is the implicit and explicit knowledge of the tense consistency. Moreover, since the purpose of the study is to investigate the linearity and/or nonlinearity trends of TC, the notion of the U-shaped learning will be called for, enabling one to see whether or not the trends of the L2 learners’ performance conforms with the concept.

6. Purpose of the study
As L2 learners’ knowledge of tenses develops throughout second language learning, so should their ability to keep temporal relations amongst different verb tenses within certain temporal contexts. L2 learners’ refinement in such an area, as their linguistic knowledge gets boosted, has been left unaddressed thus far. Hence, the purpose of this study is to investigate the accurate TC observance across Iranian L2 learner’s proficiency levels. In so doing, implicit and explicit knowledge of the TC will be taken into account. Accordingly, the following research questions were raised:

Research question 1: Taking into account the explicit knowledge about TC, does the observance accuracy of the TC improve as the proficiency level of the Iranian L2 learners of English increases?

Research question 2: Taking into account the implicit knowledge about TC, does the observance accuracy of the TC improve as the proficiency level of the Iranian L2 learners of English increases?

7. Method
7.1. Participants
Since the current study aimed at investigating the TC performance of adult Iranian L2 learners of English, 154 adult male and female participants aged between 22 to 35 were placed into three groups of elementary (26 males, 29 females), intermediate (25 males, 27 females) and advanced (22 males, 26 females). The placement process of the participants was conducted using the widely-known Oxford Placement Test (OPT) (Oxford University Press, University of Cambridge, & Association of Language Testers in Europe, 2001). The participants were selected from the L2 learners studying at Iran Language institute (ILI), an institution in Iran renowned for teaching English.
Although the ILI has defined its proficiency level hierarchy for its language learners as basic, elementary, intermediate, and advanced, the researchers of the present study deployed the OPT because its reliability and validity has already been established by Cambridge TESOL. This was done primarily to ensure homogeneity of the participants.

Although tense consistency is very well covered in the ILI texts up until the intermediate series, this grammatical aspect is tacitly maintained throughout the materials. *Formal* instruction of TC rules commences as learners enter the intermediate series; thus, only the intermediate and advanced learners possess the explicit and implicit knowledge of TC in their approximative system whereas the elementary learners have only the implicit knowledge of the grammatical TC component.

### 7.2. Instruments

In order to obtain the relevant data, two instruments were used, namely Gap Filling Task (GFT) and Spoken Performance Task (SPT).

The data pertinent to the explicit observance of TC was gathered through GFT. In this test, participants were given a written story made up of three mixed time frames (past, present and future) which had 30 blanks to fill in. Moreover, the target statements were all compound sentences. Thus, based on the contextual clues, participants had to decide what verb tenses they should use in the gaps provided so as to observe the temporal relations amongst the verbs.

The other instrument, SPT, was used to gather the data pertinent to the implicit observance of TC. In this test, a series of pictures depicting a story in three time frames of past, present and future was provided. The pictures were divided into three groups. The first group had the label of “eight years ago” for the past time frame, the second group had the label of “at present” for the present time frame, and the last group was labeled “ten years later” indicating the future time frame. Some subordinating and/or coordinating conjunctions such as *but, and, because, etc. were given on the pictures as prompts thus obliging participants to make compound sentences.

### 7.3. Procedures

Data gathering in the first instance was by categorizing the participants into elementary, intermediate and advanced proficiency levels. This process administered the OPT to the participants according to the rules that conformed to the test rubric. The purpose of administering the OPT was to obtain participants’ homogeneity regarding their proficiency levels.

Generally, OPT has two parts: the first has 40 items and participants are allotted 30 to 45 minutes to complete it. The second has only 20 items and the completion time assigned is 15 to 25 minutes.

Only participants who completed 36 or more questions in the first part would be allowed to take the second part of the test and their papers were marked and corrected immediately. On completion of both parts of the test, the participants were categorized into different levels of proficiency based on the following criteria:

- Scores between 16–24—elementary
- Scores between 27–40—intermediate
- Scores between 48–55—advanced

Based on the above criteria, participants who scored below 16 were excluded from the study. According to the OPT rubric, the cut-off score for intermediate learners is 25; and the cut-off score for elementary is 24. This makes the categorization accuracy between elementary and intermediate dubious. Therefore, the researchers decided to increase the cut-off point from 25 to 27. Participants scoring 25 or 26 were excluded from the study. In much the same way, the
participants whose scores were between 40 and 48 were excluded from the study since their scores did not match any defined category suitable for the current study.

Once the proficiency level of the participants was determined, the GFT was administered in the following session. Given that the GFT aimed to assess the explicit knowledge of the subjects regarding the accurate observance of TC, there was no time pressure to take the test. Subsequently, participants had enough time to complete the task. Participants had to fill in each blank with an appropriate tensed verb that conformed to the temporal relations of the sentence elements. It should be noted that more than one possible answer was acceptable as long as the grammaticality of the sentences regarding the observance of TC was kept. Each blank of the GFT was given one point. Hence, the total scores of the participants would range from zero to 30.

In the following session, SPT, the focus of which was to measure implicit knowledge of TC, was implemented. In this test, the participants were asked to make up and tell a story individually. Each participant was given the pictures, printed on a sheet of paper. They were then given a couple of minutes to prepare themselves before they began to tell their story. Meanwhile, they were reminded to make use of the conjunctions in each time frame and to ensure that all conjunctions were utilized. There was no limit to the number of sentences the participants were allowed to make; however, there were only 30 prompts to elicit target compound sentences. Each participant was recorded whilst they were telling their story. Later, each recording was transcribed and the total number of accurate compound sentences out of the maximum of 30 was counted for each participant. The data obtained from GFT and SPT were then subjected to further separate analysis.

7.4. Data analysis
The SPSS package, (version 24) was used to analyze the data pertinent to both the GFT and SPT tests, with one-way ANOVA and Paired-sample t-tests adopted as statistical techniques to analyze the acquired data.

8. Results and discussion
A one-way between-groups analysis of variance (ANOVA) was conducted to investigate the TC performances of the three groups of the study based on their explicit knowledge, as measured by Gap Filling Task (GFT). Table 1 shows the descriptive statistics on GFT.

According to the related information in Table 1, there was a statistically significant difference between the performances of the groups in GFT scores: $F(2, 151) = 100.3, p < .001$. Also, the results of the Post-hoc comparison using the Tukey HSD test indicated that the mean score for the elementary group ($M = 19.29$, $SD = 3.43$) was statistically different from those of the intermediate group ($M = 21.25$, $SD = 3.75$, $p = .005$) and the advanced group ($M = 27.85$, $SD = 1.78$, $p < .001$). In addition, the mean scores of the intermediate group ($M = 21.25$, $SD = 3.75$) and the advanced group ($M = 27.85$, $SD = 1.78$) were statistically different ($p < 001$).

A one-way between groups analysis of variance (ANOVA) was also run to investigate the TC performances of the groups of the study based on their implicit knowledge, as measured by Spoken Production Task (SPT). Table 2 shows the descriptive statistics on the SPT.

| Table 1. Descriptive statistics on GFT |
|--------------------------------------|
| **N** | **Mean** | **Std. Deviation** | **Std. Error** | **Minimum** | **Maximum** |
| Elementary | 55 | 19.29 | 3.430 | .463 | 12 | 27 |
| Intermediate | 52 | 21.25 | 3.751 | .520 | 12 | 29 |
| Advanced | 47 | 27.85 | 1.781 | .260 | 24 | 30 |
| Total | 154 | 22.56 | 4.777 | .385 | 12 | 30 |
Based on the information in Table 2, there was a statistically significant difference between the groups of the study in SPT: $F(2, 151) = 243.23, p < .001$. According to the information obtained from post-hoc comparison using the Tukey HSD test, the mean score of the elementary group ($M = 18.11, SD = 3.41$) was statistically different from those of the intermediate group ($M = 16.44, SD = 2.63, p = .006$), and the advanced group ($M = 27.79, SD = 1.82, p < .001$). Also, the mean scores of the intermediate group ($M = 16.44, SD = 2.63$) and the advanced group ($M = 27.79, SD = 1.82$) were statistically significant ($p < .001$).

In order to analyze and compare the performances of each similar group of the study with regard to their implicit and explicit knowledge in both SPT and GFT, a paired-samples $t$-test was conducted. Before running this statistical technique, split half method was deployed to obviate the need of multiple utilization of paired-samples $t$-tests. The information obtained from the analysis is provided in the following tables.

According to the above tables (Tables 3 and 4), there was not a statistically significant difference in the scores of the elementary participants in GFT ($M = 19.29, SD = 3.43$) and SPT ($M = 18.11, SD = 3.41$); $t(54) = 1.75, p = .084$. On the other hand, there was a statistically significant difference in the scores of the intermediate participants in GFT ($M = 21.25, SD = 3.75$) and SPT ($M = 16.44, SD = 2.63$); $t(51) = 7.77, p < .001$. The data pertinent to the advanced group indicated that there was not a statistically significant difference in the scores of the advanced learners in GFT ($M = 27.85, SD = 1.78$) and SPT ($M = 27.79, SD = 1.82$); $t(46) = 0.17, p = 0.86$.

As the results of the above analysis demonstrate, the performance accuracy of the L2 learners in Tense Consistency (TC) might not necessarily become refined as their linguistic knowledge increases. This notion is reflected in the data pertinent to SPT, which aimed at assessing the implicit knowledge of the learners (Table 2). Based on the corresponding results, elementary learners performed better than the intermediate ones although the intermediate learners’ linguistic knowledge was wider than that of their elementary counterparts. This assertion is in line with the claim made by Godfrey (1980), one of the pioneers of the field, who claimed that language proficiency improvement might not necessarily lead to accurate use of tensed-verbs in discoursal contexts.

Moreover, the findings of the current study are similar to those of Zawahreh’s (2012) in that in both studies, learners failed to deploy suitable verb tenses regarding the temporal relations of the verbs in a given discourse. This notion was illustrated in the data related to both GFT and SPT. However, the tangibility of tripping up on the poor observance of the temporal relations was reflected more in the SPT data where the elementary learners outperformed their intermediate counterparts.

In the process of second language learning, L2 learners receive a large amount of linguistic input through different sources. Some parts of the input are thoroughly or partially processed and assimilated to the developing approximative system of the learners. These internalized entities (intake) lead to forming the implicit knowledge in the learners’ repertoire (Kumaravadivelu, 2006). This was also the case for all the proficiency groups of this study with the elementary group having

---

**Table 2. Descriptive statistics on SPT**

|    | N  | Mean | Std. Deviation | Std. Error | Minimum | Maximum |
|----|----|------|----------------|------------|---------|---------|
| Elementary | 55 | 18.11 | 3.414 | .460 | 10 | 25 |
| Intermediate | 52 | 16.44 | 2.638 | .366 | 10 | 22 |
| Advanced | 47 | 27.79 | 1.829 | .267 | 24 | 30 |
| Total | 154 | 20.50 | 5.604 | .452 | 10 | 30 |

---
been exposed to the least amount of input compared with the other two groups by virtue of the duration of their language learning. Accordingly, tense consistency (TC) was part of the tacit knowledge residing in the linguistic system of all the learners in the study. However, this type of knowledge was also accompanied by its explicit counterpart only for the intermediate and advanced learners by virtue of having received the explicit instruction of this grammatical issue (TC). In the exploitation of the explicit knowledge of the TC, which was assessed by GFT, elementary learners were less accurate than the intermediate and advanced ones respectively. This means that the explicit refinement of this grammatical component (TC) escalates with the expansion of the learners’ proficiency level.

In a language learning process, learners are explicitly introduced to many verb tenses and the way they should use them. Thus, learners’ explicit knowledge of the tenses increases as they move on to a higher level. In addition, the explicit instruction of TC takes place in the intermediate levels, as was the case for the intermediate learners in the current study. In this study, when it came to making use of learned tenses appropriately without time pressure in order to observe TC, as was the case in GFT, intermediate learners performed better than their elementary counterparts. The reason might be that the learners had an adequate amount of time to think about the temporal structure of the statements and make the correct verb tense choices (explicit knowledge of TC). However, as the results show, intermediate learners failed to show the same mastery over verb conjugations in tasks with time pressure (SPT) as they did in tasks without time limitation. In other words, when time pressure was imposed on the exploitation of the verb tenses in favor of calling for the implicit knowledge, intermediate learners failed to perform as accurately as they did on the untimed task (GFT). In the timed task, too, intermediate learners intended to observe the TC by maintaining the temporal relations among verb tenses. Thus, they set out to deploy the implicit rules of TC. At the same time, the explicit rules of TC already existed in their linguistic repertoire and the intermediate learners tended to consult that knowledge. Nevertheless, time limitation prevented such consultation leading to a failure to observe TC in the same way as before. Overall, the existence of the explicit knowledge of TC interfered in the exploitation of the implicit knowledge of TC in the timed (SPT) task.

Although carrying out GFT called for the learners’ explicit knowledge of TC, the elementary learners made use of their implicit knowledge due to a paucity of explicit knowledge of TC. That is to say, as previously stated, explicit instruction of TC only commences at intermediate levels whereas elementary learners have yet to acquire this skill into their linguistic systems. That is why, in performing GFT which necessitated the use of the explicit knowledge of TC, elementary learners made use of their TC implicit knowledge. These results are depicted in Tables 3 and 4. These tables clearly show that the discrepancy between the performance of the elementary learners in both the GFT and the SPT is insignificant. Thus, poorer performance of the elementary learners is justifiable as the principal linguistic source for carrying out GFT, which was the TC explicit knowledge, was not present in their linguistic competence.

### Table 3. Descriptive statistics of the t-test for all groups of the study

|                | Mean | N  | Std. Deviation | Std. Error Mean |
|----------------|------|----|----------------|-----------------|
| **Elementary** |      |    |                |                 |
| GFT            | 19.29| 55 | 3.430          | .463            |
| SPT            | 18.11| 55 | 3.414          | .460            |
| **Intermediate** |     |    |                |                 |
| GFT            | 21.25| 52 | 3.751          | .520            |
| SPT            | 16.44| 52 | 2.638          | .366            |
| **Advanced**   |      |    |                |                 |
| GFT            | 27.85| 47 | 1.781          | .260            |
| SPT            | 27.79| 47 | 1.829          | .267            |
Table 4. Results of the t-test on GFT and SPT for all groups of the study

| Group       | Measure | Mean  | Std. Deviation | Std. Error | t    | df | Sig. (2-tailed) |
|-------------|---------|-------|----------------|------------|------|----|----------------|
| Elementary  | GFT—SPT | 1.182 | 4.982          | .672       | 1.759| 54 | .084           |
| Intermediate| GFT—SPT | 4.808 | 4.459          | .618       | 7.775| 51 | .000           |
| Advanced    | GFT—SPT | .064  | 2.506          | .365       | .175 | 46 | .862           |
Intermediate and advanced learners, on the other hand, were more accurate in performing GFT by virtue of their ability to exploit their explicit knowledge of TC. This means that learners can retrieve their explicit knowledge of TC provided they are given an adequate period of time to do so. In that way, learners will consult their metalinguistic system residing in their repertoire in order to produce utterances which are communicatively and linguistically appropriate (Kumaravadivelu, 2006). When comparing the performance of the intermediate and advanced learners, one can maintain that the advanced group was significantly more adroit at utilizing their explicit knowledge of TC (Tables 1 and 2). As far as metalinguistic consultation goes, conscious thinking about certain aspects of the lingual system (e.g. TC) might yield error-free utterances, which soar as the proficiency level increases. Needless to say, not only can better performance of the advanced learners be ascribed to conscious exploitation of the existing systematic rules of the language, but also it can be attributed to such factors as duration of language exposure, adequate amount of practice, consolidation of the previously-learned materials, etc, which might open new lines of research in this realm.

With this in mind, it can be concluded that in the exploitation of the explicit knowledge of TC, a linear trend can be observed across proficiency levels with the less proficient learners being less accurate and more proficient learners being more skillful. Hence, the answer to the first research question is positive. This refinement pattern is depicted in the following (Figure 1) where the elementary learners are located at the bottom and the advanced ones at the top.

In order to answer the second research question, the data analysis of the SPT should be taken into consideration. The information in Tables 1 and 2 demonstrates that despite possessing both types of knowledge i.e. implicit and explicit, intermediate learners failed to perform better than their elementary counterparts who possessed only the implicit knowledge of TC. That is to say, elementary learners retrieved their knowledge of TC, thereby managing to perform the SPT through only one channel, i.e. implicit knowledge, yet they were more accurate at performing the SPT than the intermediate learners.

The elementary learners’ deployment of only the implicit knowledge is endorsed by the information in Tables 3 and 4 which maintains that the discrepancy between the performance of the elementary learners in GFT and SPT was not statistically significant. Simply put, in performing GFT and SPT, which targeted the learners’ explicit and implicit knowledge respectively, elementary learners made use of only their implicit knowledge and not the explicit. Contrary to this, intermediate learners’ performance was more accurate in GFT than in SPT (Tables 3 and 4). This implies that in performing SPT, an intervening factor must have influenced the performance of the intermediate learners in a negative way. The intervening factor seems to be the existence of the explicit knowledge of TC as well as time pressure. That is to say, if the intermediate learners lacked the explicit TC knowledge, they would utilize their TC implicit knowledge at least similarly to the elementary learners. This idea can be considered from two viewpoints. Firstly, the existence of the TC explicit knowledge leads intermediate learners into the transitional period during which they put efforts into applying their explicit knowledge of the TC rules in on-line language processing. In this phase, time limitation plays a deterrent role; therefore, intermediate learners’ language production will not be as accurate as when they apply such rules in off-line language processing. Secondly, the number of English tenses in which intermediate learners have been instructed is larger than that of the elementary ones. On the other hand, developing mastery over making impeccable use of these various tenses in on-line processing is an issue which has not adequately been addressed in intermediate learners, as it can be observed in their erroneous language production. What exacerbates this problem is the explicit instruction of the TC rules. That is to say, upon having the knowledge of the TC rules, intermediate learners make an effort to use that knowledge explicitly (as in GFT) and tacitly (as in SPT), which is inseparable from the deployment of the verb tenses already-learned. In explicit exploitation of the TC rules (GFT), intermediate learners outperformed the elementary ones; however, in implicit exploitation (SPT), the conscious knowledge of the rules hindered optimal performance.
Nevertheless, possessing the explicit knowledge of certain linguistic components might not necessarily lead to appropriate and accurate on-line implementation of that knowledge. Intermediate learners were explicitly instructed with the TC rules and thus were well aware that failure to observe them would result in erroneous utterances. That is to say, they would have the ability to express and exemplify the TC rules if they were required to. However, intermediates’ exploitation of the TC rules in the SPT, which necessitated subconscious utilization of the intended system, fell short of expectation. That was due to the time pressure which obliged the intermediate learners to make use of their TC implicit knowledge and not the explicit. In other words, time pressure and thereby on-line utilization of the TC rules made the intermediate learners less aware of the temporal relations among the verbs used. This is in line with the findings of the study of Chappell and Rodby (1983). To them, lack of understanding of the influence of the temporal stance on the one hand and not paying attention to a given discoursal context on the other hand, will affect appropriate tense use negatively. Also, in the present study intermediate learners were faced with time pressures which thwarted their understanding of the general tense of the discourse. This led to producing incorrect utterances.

Contrary to this, elementary learners lacked knowledge of the TC rules and their systematicity, and hence did not pay attention to their observance in performing the SPT, which in turn called into action on-line TC processing. This unconscious ignorance of TC observance on the part of the elementary learners, led to more error-free utterances regarding the temporal relations of verbs compared with their intermediate counterparts. Therefore, it is fair to say that from the perspective of grammaticality, because explicit knowledge of TC does not exist in their linguistic repertoire, elementary learners, in terms of their use or production of TC, managed to produce more error-free utterances.

Advanced level participants in the study group were noticeably better at observing TC in their utterances. Their accurate performance can be ascribed to their comprehension of TC, both explicit and implicit, and their mental dexterity when implementing grammatical tenses. Simply put, advanced learners had fewer problems regarding understanding temporal stance of the verbs in context; therefore, producing more error-free utterances was not hampered by the explicit knowledge of TC. Moreover, the closeness of the mean scores of the GFT and SPT in advanced learners implies that the explicit knowledge of TC has seemingly turned into implicit, and that TC explicit knowledge did not hinder the accurate performance of the advanced learners.

It is then worth mentioning that the explicit instruction of TC and its corresponding rules should take place at an appropriate time so that their implicit knowledge use and thereby their on-line implementation will be optimal. Accordingly, Liu (2012) maintains that the untimely inclusion of certain linguistic materials is where the negative effect of the cognitive factor, which can be the by-product of the influence of the second language, resides. As far as implicit/explicit instruction is concerned, Soleimani et al. (2015) hold the view that both implicit and explicit instruction help learners in a positive way regarding the utilization of the past tense. Although their study mainly focused on the use of the past tense, their view about implicit knowledge is similar to that of this study in that implicit teaching and learning comes in handy regarding tense utilization. However, their idea of the suitability and usefulness of the explicit instruction is somewhat in contrast to the findings of the present study. They believe that, though focusing on the past tense, explicit instruction assists learners in making good use of tensed verbs.

Based on the aforementioned points, the answer to the second research question is straightforward. Since the correct observance of the implicit knowledge of TC does not get refined in a linear pattern with the increase in the proficiency levels of the learners, the answer to the second research question is negative. The nonlinearity of the improvement of TC tacit knowledge is reflected in the following figure (Figure 2).
Taking into consideration all the points so far, one can arrive at the conclusion that the utilization of the implicit knowledge of TC does not follow a linear fashion across proficiency levels. Despite the poor performance of both elementary and intermediate learners in the SPT, elementary learners performed more accurately than the intermediate ones. Then, this approximate accuracy decreases in the intermediate ones and again soars in the advanced group. This notion is very much similar to the concept of the U-shaped learning where the primary utterances are error-free; then on learning new materials the systematic errors emerge and rise, and finally erroneous utterances diminish in more advanced learners.

It should be noted that in the U-shaped learning, the early production is somewhat the same as the final utterances regarding the grammaticality of the production, (Saville-Troike, 2006). However, as the above figure shows (Figure 2), the difference in accuracy between the elementary learners and the advanced ones is not inconsiderable. That is to say, the initial accurate production of the elementary participants was neither the same nor indeed close to that of the advanced ones. Hence, instead of using the term U-shaped learning, the new term of tick-shaped improvement would seem to better match the notion.
9. Conclusion
The main focus of this study was to find out the improvement pattern of the utilization of the explicit and implicit knowledge of Tense Consistency. The analysis of the GFT data revealed and endorsed the linearity of the utilization of the TC explicit knowledge. This was due to the adequate amount of time for the learners to consult their metalinguistic knowledge. Conversely, the improvement pattern of implicit-knowledge deployment, which was measured by SPT, did not follow a linear fashion. In this test, elementary learners performed better than the intermediate ones. The reason for such nonlinearity has been said to be attributed to the existence of TC explicit knowledge. Therefore, explicit introduction of TC and its rules should be implemented when the learners are linguistically and cognitively ready for it. This issue can open another line of research regarding the appropriate time for the formal instruction of TC.

10. Limitations
This study was conducted with 154 participants with the same L1 background. A larger number of participants with different L1 backgrounds would have yielded data with wider generalization. Moreover, the assessment of the implicit and explicit knowledge could have been carried out by means of other specifically-designed tests, which would have allowed a greater comparison of findings. However, time limitation was a preventive factor in administering such tests.

11. Recommendations
This study followed a cross-sectional design for investigating the online and offline improvement of TC observance. It is, however, recommended that a longitudinal study would demonstrate the improvement trend of TC observance in a more sensible way. Furthermore, this study took into consideration the implicit and explicit knowledge of TC, other studies may be designed to target implicit and explicit knowledge of other grammatical components such as the article system, subject-verb agreement, plural—s, etc. Additionally, the participants of this study only included adult L2 learners of English. Therefore, in order to investigate whether or not it is possible to generalize the findings across a wider age range, other studies may be designed to target young adult or even teenage learners.

Funding
The authors received no direct funding for this research.

Author details
Amir Reza Asiyaban
E-mail: amir_a200682@yahoo.com
ORCID ID: https://orcid.org/0000-0002-1352-7771
Mortaza Yamini
E-mail: mortezayamini@yahoo.com
ORCID ID: http://orcid.org/0000-0002-8138-0054
Mohammad-Sadegh Bagheri
E-mail: bagheries@gmail.com
Lotfollah Yarmohammadi
E-mail: yarmoh@gmail.com
1 Department of English Language, Shiraz Branch, Islamic Azad University, Shiraz, Iran.
2 English Department, Zand Institute of Higher Education, Shiraz, Iran.

Citation information
Cite this article as: Implicit/explicit knowledge and its contribution towards tense consistency employment across EFL learners’ proficiency levels, Amir Reza Asiyaban, Mortaza Yamini, Mohammad-Sadegh Bagheri & Lotfollah Yarmohammadi, Cogent Education (2020), 7: 1727129.

References
Bardovi-Harlig, K. (2000). Tense and aspect in second language acquisition: form, meaning, and use. Language Learning: A Journal of Research in Language Studies, 50, 1.

Carlucci, L., & Case, J. (2013). On the necessity of U-shaped learning. Topics in Cognitive Science, 5(1), 56–88. doi:10.1111/tops.12002
Chappel, V., & Rodby, J. (1983). Verb tense and ESL composition: A discourse-level approach. TESOL, 82, 309–320.
Chomsky, N. (1995). The minimalist program. Cambridge, MA: MIT Press.
Declerck, R. (1990). Sequence of tenses in English. Folia Linguistica, 24, 513–544.
Ellis, R. (2005). Measuring implicit and explicit knowledge of a second language: A psychometric study. Studies in Second Language Acquisition, 27(2), 141–172. doi:10.1017/S0272263105050096
Ellis, R., Loewen, S., & Erlam, R. (2006). Implicit and explicit corrective feedback and the acquisition of L2 grammar. Studies in Second Language Acquisition, 28(2), 339–368. doi:10.1017/S0272263106060141
Godfrey, D. L. (1980). A discourse analysis of tense in adult ESL monologues. In D. Larsen-Freeman (Ed.), Discourse analysis in second language research, 92–100. Rowley, MA: Newbury House.
Grammarm Inc. (2018). Verb tense consistency: Grammar rules. Retrieved from https://www.grammarly.com/blog/verb-tense-consistency.
Han, Z. (2002). A study of the impact of recasts on tense consistency in L2 output. TESOL Quarterly, 36(4), 543–572. doi:10.2307/3588240
Hulstijn, J. H. (2005). Theoretical and empirical issues in the study of implicit and explicit second-language learning: Introduction. Studies in Second Language Acquisition, 27(2), 129–140. doi:10.1017/S0272263105050084
Kumaravadivelu, B. (2006). Understanding language teaching: From method to postmethod. London: Routledge. Mahwah, NJ: Erlbaum.
Larsen-Freeman, D., Kuehn, T., & Haccius, M. (2002). Helping students make appropriate English verb tense-aspect choices. TESOL Journal, 11(4), 3–9.
Liu, J. (2012). CLEC-based study of tense errors in Chinese EFL learners’ writings. World Journal of English Language, 2(4), 11. doi:10.5430/wjel.v2n4p11
Liu, X., & Zhu, Q. (2010). The effect of recast on EFL learners’ oral English accuracy development: An experimental study on tense consistency. Foreign Languages and Their Teaching, 5.
Morgan, G. (2018). The ineffectiveness of overt input on the problematic grammatical features of tense usage and verb conjugation for native Arabic speaking learners of English for Academic Purposes (EAP). Advances in Language and Literary Studies, 9(4), 193–205. doi:10.7575/aiac.all.v.9n.4p.193
Nelson, K. N. (2017). Grammatical acquisition of present and past tense verb forms in a communicative setting (Master thesis). Retrieved from http://digitalcommons.hamline.edu/hse_all/4320
Noor, F. N. M. (1985). A study of verb tense problems found in the writings of Malay speakers (Master Thesis). Retrieved from http://lib.dr.iastate.edu/rtd/50
Oxford University Press, University of Cambridge, & Association of Language Testers in Europe. (2001). Quick placement test: Paper and pen test. Oxford: Oxford University Press.
Roberts, L., & Liczka, S. A. (2013). Processing tense/aspect-agreement violations on-line in the second language: A self-paced reading study with French and German L2 learners of English. Second Language Research, 29(4), 413–439. doi:10.1177/026768313503171
Saville-Troike, M. (2006). Introducing second language acquisition. Cambridge: Cambridge University Press.
Slabakova, R. (2002). Recent research on the acquisition of aspect: An embarrassment of riches? Second Language Research, 18(2), 172–188. doi:10.1191/026768302sr202ra
Soleimani, H., Jahangiri, K., & Gohar, M. J. (2015). Effect of explicit and implicit instruction on implicit knowledge of English past simple tense. International Journal of Asian Social Science, 5(S), 257–265. doi:10.18488/journal.1
Thomas, J. (2014). Case study of error analysis of the usage of tense in English by 1 year engineering students from Tamil medium schools. IMPACT: International Journal of Research in Humanities, Arts and Literature, 2(1), 47–52.
Tokowicz, N., & MacWhinney, B. (2005). Implicit and explicit measures of sensitivity to violations in second language grammar: An event-related potential investigation. Studies in Second Language Acquisition, 27(2), 173–204. doi:10.1017/S0272263105050102
Vaezi, S., & Alizadeh, M. (2011). How learners cope with English tenses: Evidence from think-aloud protocols. Procedia-Social and Behavioral Sciences, 29, 986–993. doi:10.1016/j.sbspro.2011.11.332
Zawahreh, F. A. S. (2012). Applied error analysis of written production of English essays of tenth grade students in Ajloun schools, Jordan. International Journal of Learning and Development, 2(2), 280–299. doi:10.5296/ijld.v2i2.1680
