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Private speech in teacher-learner interactions in an EFL context: A sociocultural perspective

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ABSTRACT

Theoretically framed within Vygotskian sociocultural theory (SCT) of mind, the present study investigated resurfacing of private speech markers by Iranian elementary female EFL learners in teacher-learner interactions. To this end, an elementary EFL class including 12 female learners and a same-sex teacher were selected as the participants of the study. As for the data, six 30-minute reading comprehension tasks with the interval of every two weeks were videotaped, while each participant was provided with a sensitive MP3 player to keep track of very low private speech markers. Instances of externalized private speech markers were coded and reports were generated for the patterns of private speech markers regarding their form and content. While a high number of literal translation, metalanguage, and switching to L1 mid-utterance were reported, the generated number of such private markers as self-directed questions, reading aloud, reviewing, and self-explanations in L2 was comparatively less which could be due to low L2 proficiency of the learners. The findings of the study, besides highlighting the importance of paying more attention to private speech as a mediating tool in cognitive regulation of learners in doing tasks in L2, suggest that teachers' type of classroom practice is effective in production of private speech. Pedagogically speaking, the results suggest that instead of seeing L1 private speech markers as detrimental to L2 learning, they should be seen as signs of cognitive regulation when facing challenging tasks.

Keywords: cognitive regulation; private speech; socio-cultural theory; teacher-learner interactions

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Introduction

Sociocultural theory (SCT), also known as cultural-historical theory in the literature, following the groundbreaking remarks of Vygotsky's (1978) socially mediated mind, introduced a new facet of learning which gave credence to both the cognitive and social perspectives. To develop a link between the cognitive and the social, which can result in successful learning, mediation through developmentally collaborative dialogue (Swain, 2001) in the learner's *Zone of Proximal Development* (ZPD) (Vygotsky, 1978) is inevitable. ZPD, according to Vygotsky (1978), is "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86).

When it comes to learning a language, for Vygotsky (1978) and other proponents of socio-cultural theory in education (e.g., Leontiev, 1981; Luria, 1982; Werstch 1991), participation in social interactions and culturally organized activities plays an essential role in influencing psychological development (Kozulin, 2003; Lave & Wenger, 1991; Rogoff, 1990). Therefore, language as a sign of higher mental functioning within the individual's community of practice (Lave & Wenger, 1991; Vygotsky, 1978) emerges first as social speech with the main function of regulating and controlling interaction with other participants, and then transforms into inner speech (thought). When applied to an L2 classroom setting, the principal factor is exposing the learners to the required ZPD, the distance between the actual, individual development, and the level of potential development (Ohta, 2001), by resorting to the determining and enabling processes known as assisted performance (Tharp & Gallimore, 1991), or scaffolding (Wood et al., 1976).

Typically associated with Vygotsky's sociocultural theory, scaffolding has received a great deal of attention in educational research recently (Cazdan, 1979; Stone, 1993; Wood et al., 1976, among others). Wood et al. (1976) adopted the metaphor to highlight the principal role of adults in adult-learner interactions. Then, Stone (1993), taking a Vygotskian-inspired view to the metaphor, stated that the learners are not passive participants in teacher-learner interactions. Instead, they are active agents in interpersonal processes through which they can configure common understanding or intersubjectivity with the learner or learners. Relating Vygotsky's ZPD to the metaphor of scaffolding, Cazden (1979) suggested that the metaphor be expanded from the area of parent-child interaction to teacher-learner interaction. This was because Cazden believes that teacher's type of classroom functioning is fundamental to any teaching-learning process. Scaffolding, however, is a dynamic process which depends upon characteristics of the situation i.e., type of task, learners' level of proficiency, and teachers' personal and professional characteristics.

Depending on the type of scaffolding provided, cognitive regulation and final transformation of L2 participatory samples are facilitated (Beed, Hawkins, & Roller, 1991; Wood et al., 1976; Wood & Wood, 1996), resulting in altering the social speech into the *private speech*, and private speech into inner speech, in turn (Ohta, 2001). When learners face challenging tasks, they resort to what is known as egocentric speech (Ohta, 2001; Vygotsky, 1978) which facilitates self-regulatory functioning for them. According to Ohta (2001), from the babbling and word play of young children, to the self-directed mutterings of adult language learners, people talk to themselves while acquiring language. Originally coined by Flavell (1966) to account for Vygotsky's notion of egocentric speech, private speech is now widely recognized as a means of self-regulation and mediation in not only language mediation, but also in what Vygotsky referred to as the higher mental functions such as voluntary attention, planning, attentional memory, logical thought, problem solving, evaluation, and learning (Lantolf, 2000).

Private speech, or speech directed to the self (Ohta, 2001) is a phenomenon of child development that Vygotsky (1978, 1986) interpreted as the critical transitional process between speaking with others and thinking for oneself (Feigenbaum, 1992). Ohta (2001), in a study on L2 Japanese learners, showed the significant role that L1 can play in self-regulation and linguistic development of EFL learners. Yet, despite its gaining importance in the field, and also investigating its role in representing the progression from other to self-regulation in the social interaction in the literature (e.g., Appel & Lantolf, 1994; Centeno-Cortes & Jimenez Jimenez, 2004; Frawley, 1992; Lantolf & Frawley, 1985; McCafferty, 1992; Ohta, 2001), to the best of the researcher's knowledge, the role of private speech in teacher-learner interactions has not been touched upon from a sociocultural perspective, especially in the EFL context of Iran with its own unique characteristics. To this end, the present study is going to answer the following questions:

1. What are the forms of private speech produced by elementary EFL learners in teacher-learner interactions?
2. What are the contents of private speech produced by elementary EFL learners in teacher-learner interactions?

Literature Review

Theoretical framework

The origin of the theory of private speech goes back to two contemporaneous developmental psychologists, Piaget and Vygotsky (as cited in Manning, 1991; Winsler, Diaz & Montero, 1997), both studying the issue in young children albeit with different views and terms. For Piaget (1959), private speech (egocentric speech) was a sign of cognitive immaturity (Agres, 2012), which by passing time can develop into a fully mature, influential speech with the child's gaining the required amount of cognitive and communicative skills. Vygotsky (1978, 1986), in contrast, believed that egocentric speech was the key element for normal development of communication and self-regulation of behavior in children in the challenging communicative moments (as cited in Winsler, Fernyhough & Montero, 2009).

Vygotsky (1978, 1986) noted that when children faced challenging cognitive tasks, they resorted to themselves internally and resurfaced their thought in the form of private speech to overcome difficulties. This phenomenon is most frequently observed in children from about two to seven years of age (Manning, 1991; Winsler, Diaz & Montero, 1997). Regarding private speech as the connecting line between social language as the most comprehensive tool for higher mental functioning and inner speech as representative of thought, Vygotsky (1986) maintains that private speech is a key collaborator in planning the solution of a problem for children who employ it as self-directing tool in trying to regulate their behavior. As Winsler, Diaz and Montero (1997) puts it, children's behaviors are strongly under the impact of environmental issues, and this can gradually fade by verbally guiding their own behavior and attention by resorting to private speech to detach themselves from environmental variables (Vygotsky, 1986). Lee (2008) defined self-regulation as an "internally oriented voluntary regulation that characterizes higher mental functioning; self-regulation is in evidence when a skilled individual is capable of autonomous functioning " (p.171). Private speech has been frequently referred to as a contributing tool for self-regulation in both L1 and L2 (Appel & Lantolf, 1994; Frawley & Lantolf, 1985; McCafferty, 1992, 1994; Ohta, 2001; Wertsch, 1985).

When L2 learners face challenging tasks in their interaction, they obviously externalize their thought in the form of both L1 and L2 private speech since the learners have not yet fully developed inner speech through their L2 tool (Appel & Lantolf, 1994; Ceneno-Cortez & Jimenez-Jimenez, 2004; McCaffery, 1994; Lantolf & Frawley, 1984; Ohta, 2001). To put it another way, when a language learner finds himself/herself in difficulty while performing a task, he/she gives out her inner speech by means of the talk directed to the self (Ohta, 2001) in an attempt to self-regulate his/her behavior.

Relevant Empirical Studies

Several L2 researchers have found private speech to be a good source for the study of second language acquisition. This might be because it opens a window into the mind as the main function of private speech is cognitive regulation (Anani Sarab & Gordani, 2014; Ohta, 2001, among others). The importance of focusing on role of private speech in SLA studies has been highlighted by Saville- Troike (1988) who claimed that:

[T]he now dominant conception of language learning as critically involving social/interpersonal interaction has left potentially important *noninteractive* phenomenon generally out of researchers' awareness. Further, there has been a tendency in the second language learning field to equate *over production with active learning, and lack of overt production with passivity and disengagement*. These conceptual perspectives, together with the more obvious character of socially interactive speech and the difficulties of observing interpersonal speech, have led to an unconscious assumption that nothing of significance was happening unless learners were talking to others (p.569, italics added).

The above excerpt from Saville-Troike manifests that the speech directed to the self, what she refers to as *noninteractive* phenomenon, must not be underscored by SLA researchers just because it is possibly out of their awareness. According to Ohta (2001), the seemingly silent form of speech which learners direct to themselves is neither passive nor disengaged. Further, Ohta states that two types of context are determining in the language learning process: interpersonal communicative context and individual language use context.

Under the influence of Vygotskian approaches to second language learning, Frawley and Lantolf (1985) were the first scholars who focused on investigating the role of private speech in second language learning. They suggested that due to lack of mastery in L2 structures and inadequate ability in performing cognitive tasks in the L2, especially at lower levels of proficiency, L2 learners need to resort to private speech to mediate their self-regulation. More interestingly, they argued that this happens in lower levels of proficiency more often than in the higher levels. However, they claimed that private speech is highly context-bound, so even native-like L2 learners might need to resort to their private speech in unique circumstances which might not have been touched upon by them earlier.

Studying private speech in an L2 Japanese class, Ohta (2001) found that private speech can have three main uses (repetition, manipulation, and vicarious response), and that private speech can improve L2 development. She stated that private speech is a creative locus of linguistic manipulation and hypothesis testing. It is a phenomenon which results in what Ohta (2001) terms "a covert social space" (p. 30) during which learners actively engage themselves in some sort of what Lave and Wenger (1991) termed "legitimate peripheral participation". According to Ohta (2001), learners cannot be regarded as passive or disengaged learners as they have their private speech strategy as a vehicle for "interactive hypothesis testing" (p.30) during the moments when the learner is appropriating the language for him/herself.

Further, in a study by Lee (2008) on private speech produced by advanced Korean learners of English in a biology class at the University of Midwestern, it was found that participants resorted

to both L1 and L2 private speech to better mediate the L2 learning process. Emphasizing the significance of private speech produced in interactional encounters, Smith (2007) stressed the importance of private speech as a social semiotic tool which helps reorganize and regulate the cognitive functions of the learners.

Many studies (e.g., Anani Sarab & Gordani, 2014; Boer, 2006; Ebadi, 2014; McCaffery, 1994; Ohta, 2001) have embarked on the contribution which private speech could grant in cognitive regulation and consequently cognitive reorganization of L2-originated tasks in L2 classes. These studies, however, have mainly focused on individual task completion in either L1 or L2, mostly focusing on the moments learners are struggling with themselves by resorting to various strategies to solve a linguistic problem or a communicative breakdown. Emergence of private speech in teacher-learner interactions, however, is also of prime importance since, according to Ohta (2001), learners calibrate their would-be-produced linguistic elements through interactive hypothesis-testing before they resurface them. Further, regarding the EFL context of Iran, the investigation on private speech still seems to be in its infancy although it has been recently targeted by some scholars. In one study conducted on teacher- students while they were dealing with solving some riddles in L2 individually, Anani Sarab and Gordani (2014) found that private speech has with it such beneficial functions as planning, managing the thought, self-orientation, motivation, and controlling anxiety. In another study on the role of L2 private speech on online dynamic assessment of two Iranian university students residing in UK and France along with two English native speakers, Ebadi (2014) found that L1 surfaced in the private speech of L2 learners when they faced challenging task of narrowing the gaps in L2 knowledge, thereby emphasizing the use of L1 as a mediating tool for meaningful L2 processing. Regarding emergence of private speech in interaction, learner-learner interaction, Abdikhah and Khorshidi (2013) found that both beginner and advanced EFL learners employed private speech during completing a task. They also found that while advanced learners predominantly externalized their private speech in English, beginner learners had majority of private speech resurfacing in Persian. They did not however find a relationship between the amount of private speech produced and success of task completion. Despite a lot of work on private speech in individual task completion both in Iran and overseas (e.g., Anani Sarab & Gordani, 2014, 2015; Appel & Lantolf, 1994; Lantolf & Frawley, 1985; McCafferty, 1994; Centeno-Cortes & Jimenez-Jimenez, 2004) and learner-learner interaction (Abadikhah & Khorshidi, 2013; Goudena, 1992; Khorshidi & Abdikhah, 2013; Martinez et al., 2009; Ohta, 2001) no study, to the researcher's knowledge, has been conducted on resurfacing of private speech in teacher learner interactions. Therefore, the present study is an attempt to explore the production of private speech by elementary EFL learners in teacher-learner interactions in doing reading tasks.

Methodology

Participants

An Elementary EFL class consisting of 12 learners comprised the participants of the study. The participants (both the teacher and the learners) were female native speakers of Persian who had been learning English in the institutional settings in the EFL context of Iran without any experience of being in touch with any native speaker or living in an English-speaking country. Their ages ranged from 17 to 22. They were within their sixth semester of their studies. According to the regulations of the Institute where the study was conducted, those who were within the first two semesters of learning were regarded as Basics and from the 3rd to 6th semester as Elementary.

Materials

The learners had the third edition of Top Notch series (2007) by Saslow and Ascher as their main book. For the side book, they had second edition of Active Skills for Reading Series: Book 1, by Neil J. Anderson (2007). The target book for the study was Active Skills for Reading as the efforts of learners during reading tasks of this book were recorded, transcribed, and analyzed. Thirty minutes of each one-hour-and-half session with an interval of every other session was devoted to working on one of the reading tasks of the book. Therefore, of the 12 sessions that were held during the semester, 6 sessions were videotaped and transcribed for follow-up analysis. The reading tasks included (1) Jamie Oliver's School dinners (p.13), (2) The High School That beat MIT (p. 23), (3) The Most Useful Inventions (p.27), (4) Study Abroad with Traveling (p.33), (5) The Freshman Fifteen (p.42), and (6) Student life (p.51), all from the book Active Skills for Reading.

Design and procedure

The design of the study was descriptive. The main focus, following the underpinnings of SCT to production of talk as the final outcome in interactional dyads, was on teacher-fronted classroom interaction patterns and observing her instructional practices (Anani Sarab, Monfared & Safarzadeh, 2016) to be informed of the teaching context regarding use of private speech markers. The data for the study consisted of 6 sessions of video-taped data of one class. Thirty minutes of the session during which the classroom focus was on Active Reading tasks were recorded. The classroom sessions were videotaped by a high-quality video camera. To avoid any possible distraction and also to catch a better view of the classroom, the camera was installed high in the left corner of the back of the classroom. To better trace the occurrence of private speech markers in the data, each participant was also equipped with a sensitive MP3 voice recorder so that low volume sounds generated were also kept. The main data was extracted from MP3 recordings as it is not possible to deeply explore low volume voices just by reviewing camera films. The main purpose of installing the camera was to gain a holistic picture of overall classroom actions and interactions, besides taking care of private speech utterances which were distinctly audible.

Regarding reliability and validity of the study, the following steps were taken. Regarding the reliability, classifying the private speech categories is in fact subjective. To alleviate such deficiency, the inter-rater reliability check was conducted. To do so, a second rater with a PhD degree in TEFL, coded the transcribed data and his coding outcome was compared to that of the researcher. Once the rater had completed coding the data, the degree of consensus between the researcher and the rater's coding was obtained by calculating the inter-rater reliability coefficient. To do so, Miles and Huberman's (1994) formula was used. This formula consists of dividing the total number of agreements by the total number of coding. The inter-coder agreement yielded a result of 89% of agreement between the researcher and the second rater for total counts of form and 79% percent of agreement for the content of private speech produced. Regarding the validity of the data, the presence of Mp3 voice recorders might be thought of as affecting learners' performance which in turn might result in superficial data as the learners might surmise that their productions would be scrutinized and evaluated by the researcher. To alleviate this problem, the teacher arranged some preparatory sessions for the sake of practice to try to make learners less sensitive to the use of the tool. She also informed the participants that the use of voice recorders was just for the sake of research purposes.

To develop a firm understanding of the qualitative data obtained, utterances were selected as the unit of analysis following the sociocultural theoretical approaches to data analysis (McCaffery, 2002). The main source of data for the study (audio files for each learner in MP3 format) was

transcribed following the conversation analysis conventions. Sonmez (2011), inspired by the tenets of sociocultural theory, saw the data analysis procedure as a process including transcription, organization, coding, and interpretive analysis. The data analysis procedure, therefore, followed the same procedure. Before transcribing the whole data, due to insurmountable amount of oral data, reducing the data to the required samples seemed inevitable. This is in line with Darhower (2002) who claims that data reduction is necessary to maintain consistent and systematic data analysis procedure. Reduction was achieved by the selection of interaction moments between teachers and learners, while the focus was on the learners' utterances as unit of analysis. Utterances are usually defined as sequence of words within a single turn of interlocutor which falls under a single intonation counter (McCaffery, 2002). From a descriptive linguistic point of view, utterances can be in the form of words, phrases, clauses, sentences or in any form of speech (Feigenbaum, 1992). After reducing the raw data into utterances produced in interaction between the teacher and the learners, the data were coded and reports were generated for the patterns of private speech markers regarding their form, and content based on a blending of the private speech coding manual (Winsler, Fernyhough, McClaren, & Way, 2005) and earlier literature on private speech (e.g., Anton & Di Camila, 1999; Di Camila & Anton, 2004; McCaffery, 1994; Ohta, 2000; Sonmez, 2011).

Results

Forms of private speech produced

Private speech markers used by the participants of the study were investigated in terms of their form and content. Below are examples of the three forms of private speech produced.

Excerpt 1: Subvocalization form

- 1 T: what is the expression for getting fat in the text?
- 2 L.2: (whispering to herself) khob, getting fat means chagh shodan. Pas kodam ebarat?(3)
[well, getting fat means become fat. so, which expression?]
- 3 L.2: (whispering to herself) Aha, weight yani vazn. Pas ehtmalan gain weight basho.
[aha, weight means weight. So, probably it is **gain weight**.]
- 4 L.2: (aloud to the teacher) teacher, it is gain weight. To get fat means to gain weight.
- 5 T: very well, can you give an example?

In the excerpt above, after the teacher poses her question, one of the learners starts talking to herself. Employing such expressions as "well, so, and aha" shows that she is self-regulating herself over the meaning of get fat. After having two turns with herself during which she silently self-regulates herself, she resumes interaction with the teacher. Below is another example of subvocalization form.

Excerpt 2: Subvocalization form

- 1 T: all the other students were curious about it. what does curious in the text mean?
- 2 L.6: (talking silently to herself) koja man ein kalameh ra ghablan dideham.
[where had I seen this word before?]
- 3 L.6: (aloud) che. curiosity. konjkavi, (silently) pas curious be mani konjkav.

[what? Curiosity, so curious means konjkav]

4 L6: (silent) vali be English che mishe? I don't know?

[but, what is it in English?]

5 L6: (to the teacher) teacher, I know in Farsi, but I don't know in English.

6 T: ok, look at the next line, and you will understand what it means.

In the above excerpt, after posing the question by the teacher, L6 engages in interaction with the self in a silent manner for three turns (2,3 &4) before she directs her last turn to the teacher.

Excerpt 3: Abbreviated form

1 T: What is special about studying abroad?

2 L4: (talking to herself) It can be exi, exit, chi shod?

[it can be exi, exit, what was it?]

3 L4: What is Jaleb[exciting] in English teacher?

4 T: ok, you mean exciting. So, exciting what?

In the above excerpt, the learner directed her attempt to herself as interlocutor, but she could not self-regulate herself regarding the word exciting. Her attempt to produce the word shows that she is trying to find the word but her unsuccessful attempt results in producing the word in an incomplete, abbreviated form.

Excerpt 4: Loud form

1 T: why do children work part-time in Europe?

2 L3: khob, they work chi, aha (loudly to herself) **part-time for education.**

[well, they work what, aha (loudly to herself) part-time for education.

3 L3: (loudly to herself) yani, to earn money for their education.

[it means]

4 L3: ok teacher, to earn money for their education.

5 T: you are right Ladan. They work part-time to earn money for their education.

In the above excerpt, after the teacher poses the question, L3 tries to find the answer for herself. But the task seems challenging for her. It seems as if she releases some emotional burden when she utters the expression (part-time for education). After struggling with her thoughts for two turns (2 &3), which contains two themes of loud form of private speech markers, she finally gets control over the expression and comes back to real interaction with the teacher.

As Table 1 shows, all three forms of private speech (subvocalizing /whispering, abbreviated/elliptical and loud/non-silent utterances directed to the self) are present in the data but with varying degrees. In terms of form, the subvocalized/whispering form occurs most frequently in this context, followed by abbreviated/incomplete forms, and the loud forms being the least. The primary function of whispering forms of private speech is to keep the process under control (Anani Sarab & Gordani, 2015). In this context, where the focus is on reading activities, when challenging, thought-provoking questions are raised by the teacher, learners seem to see it necessary to cognitively regulate themselves over the task (e.g., Abdikhah & Khorshidi, 2013; Anani Sarab & Gordani, 2014; DiCamilla & Anton, 2004; Kronk, 1994; McCaffery, 1994;

Ohta, 2001), so it is not odd to see more instances of subvocalized/whispering forms in the transcribed data. The findings are compatible with the findings of previous studies on private speech (e.g., Anani Sarab & Gordani, 2015; Frawley & Lantolf, 1985) regarding the high frequency of whispering forms. There is, however, one point of significance. The number of loud forms in this study is lower than the other two forms. This might be due to the contextual differences between this study and previous ones. In this study, the focus is on teacher-learner interactions, while in the cited studies the focus is either on one learner self-regulating herself privately (e.g., Abdikhah & Khorshidi, 2013; Anani Sarab & Gordani, 2014, 2015) or on the learners when they are in collaboration with each other (DiCamilla & Anton, 2004). More importantly, as Anani Sarab and Gordani (2014) and Sonmez (2011) argue, personal factors such as learners' L1 background and age, the type of tasks the learners are involved in, and contextual factors of the study such as whether the interaction is with the self, with peers, or with the more knowledgeable person are determining in the forms of resurfaced private speech forms.

Regarding the frequent emergence of fragmented/abbreviated forms, the findings are compatible with previous studies in the field (e.g., Azmitia, 1992; Feigenbaum, 1992; Goudena, 1992; Pellegrini, 1981) which argue that, compared to social speech, private speech is of a more abbreviated/fragmented nature especially when there is some sort of planning before the production stage.

The point of controversy, however, is that there is not a clear-cut boundary between the forms since one form can be classified under all three categories (as an example an abbreviated form can be both in whispering and loud form). Also, use of inferential statistics or other quantification in the studies following the tenets of socio-cultural theoretical perspectives on private speech is not recommended as their use might blur the sole nature of it (Centeno Cortez & Jimenez, 2004; Frawley & Lantolf, 1985). However, frequency counts are recommended since they are a big contribution in revealing the general picture of collected data (Anani Sarab & Gordani, 2014). As Table 1 shows, subvocalized forms are present most (n=107), followed by incomplete (n=84), followed by loud forms (n=32).

Table 1
Forms of Private Speech Produced by the Learners

| Form | Frequency | Percentage | Cumulative percentage |
|-----------------|-----------|------------|-----------------------|
| 1. Subvocalized | 107 | 47.98 | 47.98 |
| 2. Incomplete | 84 | 37.66 | 85.64 |
| 3. Loud | 32 | 14.34 | 100 |
| TOTAL | 223 | 100 | |

Content of private speech produced

Following the literature on the content of private speech (Anani Sarab & Gordani, 2014, 2015; Centeno Cortez & Jimenez, 2004; Di Camilla & Anton, 2004; Frawley & Lantolf, 1985; McCaffery, 1994; Ohta, 2000, among others), contents of private speech were identified as (1) self-directed questions, (2) affective utterances, (3) repetitions, (4) reading aloud, (5) literal translation, (6) reviewing, (7) self-explanations, (8) Switch to L1 mid-utterance, and (9) metalanguage. Examples of each private speech category found in the data are presented below.

1. Self-directed questions. These types of questions are raised to direct thoughts toward the issues under discussion. The utterances were coded as self-directed questions if the learner commented on the task or her performance, or when the learner asked a question that was not answered by other participants or when the learner immediately answered the question after raising it (Anani

Sarab & Gordani, 2014). They in fact direct the participants' attention to the item at hand. The following excerpts contain private speech markers of self-directed questions type.

Excerpt 5: Self-directed questions

- 1 T: What does competition in paragraph 2 mean?
- 2 L3: Khob, paragraph 2, what does competition mean?
[well]
- 3 L3: competition, aha mosabegheh, competition yani reghabat.
[competition, aha competition, competition means]
- 4 L3: vali be englisi chi? =
[but what is it in English?]
- 5 L3: In Persian means reghabat teacher, but I don't know in English?

In the above excerpt, the learner asks herself the question, and then she answers her own question. In her next turn, she poses another question to herself to which she does not provide an answer. She instead directs the question again to the teacher, i.e. she seems not to be able to self-regulate herself without support from a more competent other, the teacher.

Excerpt 6: Self-directed questions

- 1 T: What does **keep in touch** with friends and family in Mexico mean?
- 2 L8: mmm, keep yani negah dashtan, vali keep in touch yani che?(2)
[keep means hold, but what does keep in touch mean?]
- 3 L8: shayad yani dar erbebat bodan.
[may be it means to communicate]
- 4 L8: keep in touch with family, means communicate with family.
- 5 L8: (to the teacher) can we say communicate teacher?
- 6 T: yes, somehow, to communicate with friends and family.

In the above excerpt, the learner, after hearing the question posed by the teacher, directs the question to herself and goes on with it for two subsequent turns until she comes to self-regulation with herself, and finally comes back to the teacher to make alignment with her on the issue.

2. *Affective markers.* Affective markers are known as utterances which help either motivate or release emotions which are impediment for regulation process. Also, they can help block stress (Anani Sarab & Gordani, 2014). The basic role of affective markers is controlling and managing anxiety when the interlocutor encounters challenging tasks. The low frequency of affective markers produced can be justified in several ways. Its low frequency can have roots in cultural domains. It might be due to the introvert nature of the learners, mostly trying to hide their true emotions and feelings, and preferring to remain reticent than to give out emotions especially in

classroom settings in presence of the teacher. Another reason might be that, due to the status of teachers in Iran regarding their power and prestige, a psychological distance exists between majority of teachers and their students, thereby making students behave very formally in educational contexts, especially in interactional moments with their teachers. Two examples of affective markers are presented below.

Excerpt 7: Affective markers

- 1 T: why do some students choose unhealthy food?
- 2 L9: Khob, why? Why they choose unhealthy food?
[well]
- 3 L9: chi begam? wow, kar sakht shod.
[what should I say? Wow. It became difficult.]

In the above excerpt, first the learner tries to buy herself more cognitive space by employing two hedges, and repeating the teachers' question. But her next turn seems to show that she has not succeeded in cognitively regulating herself. To release the cognitive burden, she gives out her internal state by employing effective markers.

Excerpt 8: Affective markers

- 1 T: what is another word for the word **cost** from the text?
- 2 L2: another word for cost. (2)
- 3 L2: aha, yani yek kalameh be jai cost beyad.
[aha, it means one word instead of the word cost.]
- 4 L2: khob, ein hameh kalameh!
[well, so many words].
- 5 L2: wai chi shod?
[wow, what happened?]

In the above excerpt, the learner, despite understanding what the teacher wants (line2), and translating it into Persian probably to buy more time to self-regulate herself, seems to see herself in a challenge. So, she seems to continue her own self-directed talk for two more turns by giving out her true feelings regarding the difficulty of the task.

3. *Repetitions in L2.* The main function of repetition is directing the ongoing thought process when the learners want to cognitively regulate their thinking process and bring the task under control (Anani Sarab & Gordani, 2014; Ebadi, 2014). Contrary to the claims put forward by anti-behaviorist schools of thought which see repetition in stark contrast with creativity and spontaneity, repetition originated from sociocultural perspectives is not regarded as an imitative behavior in its essence, but it is seen as a tool which directs the thought process (Anani Sarab & Gordani, 2014). Repetition private speech markers are those categories in which the learner either repeats the teacher's utterance or her/his own previous one to provide more time span to regulate or direct her/his thought process. Below are two excerpts from the data which contain repetition private speech markers.

Excerpt 9: Repetition

- 1 T: what is another word for **junk food** from the text?
- 2 L6: (talking to herself in a subvocalized manner) ok, what is another word?
- 3 L6: what is another word for junk food? Mmm junk food. Another word for junk food?
- 4 L6: aha, (talking to the teacher) it is unhealthy food teacher.
- 5 T: well done, that's right.

In the above extract, after hearing the question posed by the teacher, L6 goes on with her question for three turns until she comes up with the answer. In turns 2 and 3, she repeats the teacher's whole question or a part of it for 4 times. This is because she is probably making her attempt to bring the task under control and grant herself more space regarding her cognitive regulation over the task.

Excerpt 10: Repetition

- 1 T: In the sentence, you need to eat plenty of food and vegetables. What does **plenty of** mean?
- 2 L10: chi, plenty of mean. What mean? What does plenty of mean?
[what]
- 3 L10: yani, plenty of che mani mideh? Chi begam? Be farsi yani zeyad.
[it means, what does plenty of mean? What should I say? In Persian it means zeyad.]
- 4 L10: what is zeyad in English teacher?
- 5 T: ok, plenty of, a lot of, lots of.

In the above dyad, when the teachers ask for another expression for *plenty of*, L10 resorts to several cases of repetition of teacher's utterance both in English and Persian to self-regulate herself and find the alternative for the expression *plenty of* by buying more space for herself via directing the question to herself and repeating it, but she finally comes to the Persian equivalent [zeyad] and directs to the teacher for help regarding the English equivalent of the expression.

4. *Reading aloud in L2.* Reading aloud is another technique which is employed constantly to regulate the thinking process (Aani Sarab & Gordani, 2014; Ebadi, 2014). Learners typically adhere to this type of private speech to avoid distraction in facing challenging tasks (McCaffery, 1992, 1994) or to discharge immediately experienced tension (Soskin & John, 1963). The following example taken from the data shows how one participant reads the utterance aloud and then he pauses to direct his thoughts towards the item.

Excerpt 11: Read aloud

- 1 T: Why do freshmen eat a lot of junk food?
- 2 L2: chi? Freshmen eat what? areh, Freshmen junk food because.
[what?] [yes.]
- 3 L2: freshmen eat a lot of junk food because they, they don't have enough money.

5. *Literal translation.* Instances of literal translation are found in the data which shows the importance of L1 in cognitive regulation of second language learners, although, from a socio-cultural perspective, this might prevent transforming the L2 into the learners' cognitive tool, its

use is not regarded as negative according to this school of thought since it has a leading role in cognitive regulation of the learners. Evidence shows that in critical situations, L2 users resort to their L1 when they are experiencing cognitively demanding situation, so high rate of use of literal translation, as Frawley and Lantolf (1985) and Ebadi (2014) suggest, can be due to low level of proficiency in L2.

Excerpt 12: Literal translation

- 1 T: Why shouldn't you eat desserts full of sugar?
- 2 L5: why shouldn't you eat? Chera nabayad bekhord?
[why shouldn't you eat?]
- 3 L5: dessert chi bod? Aha dessert.
[what was dessert?] [aha, dessert]
- 4 L5: chera nabayad bekhord dessert full of sugar?
[why wouldn't you eat]
- 5 L5: because it is bad, yes.
- 6 L5: (to the teacher) because it is bad teacher.
- 7 T: yes, because it is bad for you, dangerous for your body.

In the extract presented above, the learner struggles with the teacher's question for 4 turns, by frequent switching to her L1 for support. This shows that learners' L1 should not be regarded as a bad sign in classroom interaction since it can be a big help for cognitive regulation especially in lower levels of proficiency (Abdikhah & Khorshidi, 2013).

Excerpt 13: Literal translation

- 1 T: Why are many students worried about money?
- 2 L7: why are many students? Chera besyari az daneshjoyan, mmm.
[why are many students]
- 3 L7: are worried about money? Negarn money hastand?
[are worried about money.]
- 4 L7: pas, chera besyari az daneshjoyan negarn money hastand?
[so, why are many students worried about money?]
- 5 L7: khob. Maeloomeh.
[well, it's clear.]
- 6 L7: (to the teacher) because they don't have enough money.
- 7 T: all right, because they don't have enough money, enough income.

In the above extract, following the teacher's question, the learner literally translates the teacher's question or a part of it for three times to bring the task under her control. Finally, in turn 7, she seems to come to conclusion over what the question requires.

provide herself with a calm atmosphere which helped her in succeeding in resolving the task successfully.

8. *Switch to L1 mid-utterance.* L1 is always present in the mind of language learners (Cook, 1992) and can be used as a facilitative for a wide range of purposes (Bozorgian & Fallahpour, 2015). L1 is used to as a compensating strategy to compensate for possible deficiencies in learners' L2 proficiency (Karim & Nassaji, 2013). Students switch to their L1 while reading L2 texts to facilitate resolutions of word-related or idea-related difficulties (Seng & Hashim, 2006). This type of private speech was one of the most frequently used types of private speech in the study besides self-directed questions and literal translation. Possibly due to low level of proficiency of the learners, and contextual pressure of the organizational architecture of the classroom (Kern, 1994; Upton, 1997), the learners could not have their L2 under command while they encountered challenging tasks, so they inevitably resorted to their L1 in many cases mid-utterance to better self-regulate themselves over the task. Below are examples from the data.

Excerpt 16: Switch to L1 mid-utterance

- 1 T: which place did the machine take in the competition?
- 2 L1: which place beh mani kodom rotbeh.
[means which rank]
- 3 L1: rotbeh aval shod.
[it ranked first.]
- 4 L1: pas, the machine dar mosabegheh aval shod.
[so, the machine came first in the competition.]
- 5 L1: the machine was first in the competition.

As one can see, the learner resorts to her L1 (turns 2 & 4) to better self-regulate herself over the question posed by the teacher which seems struggling for her. This helps her to finally cope with the task and give out a fully English version of the sentence in turn 5.

Excerpt 16: Switch to L1 mid-utterance

- 1 T: what does Oliver encourage schools to serve?
- 2 L2: khob, encourage yani tashvige.
[well, encourage means praise.]
- 3 L2: pas, Oliver encouraged schools to che chizi bedan?
[so] [serve what?]
- 4 L2: fekr konam meat and vegetables. Bayad chekesh konam in the text.
[I think] [I must check it in the text.]
- 5 L2: aha, he encouraged schools to serve fresh and healthy meat, and fruits.
- 6 L2: (to the teacher) can I say it teacher?

In the above excerpt, the learner switches to L1 several times (turns 2, 3, &4) until she finally comes to an end as for the answer of the question. This is most probably due to the proficiency level of the learner. Other than this, in most cases where the expressions were a bit alien and

challenging for the learners, they frequently referred to their L1 to self-regulate themselves over the posed questions.

9. *Metalinguage*. The utterances were coded as metalanguage when the participants used the utterances to discuss the language, and when the participants commented on their own produced utterances and speech. Most often than not, the learners resorted to their dictionaries (mostly their smart phones) in search of parts of speech of the verbs, or structural elements while the struggled with themselves to resolve metalinguistic issues they had faced before they wanted to take a turn and during the time they were verbally attempting a task. Below are two examples.

Excerpt 17: Metalanguage

- 1 T: why is unhealthy food expensive?
- 2 L3: to matn bayad begardam.
[I must search it in the text?]
- 3 L3: Khob, in ke expense ast.
L3: [well, this is expense.]
- 4 L3: Expense esm ast. Aha, fahmidam, ghabl az food, ghabl az esm sefat meyard?
[expense is a noun]. [aha, I understood. Before food, adjectives come before noun]
- 5 L3: Ok, teacher, I got it? It is unhealthy, and it is expensive.

In the above extract, after hearing the question posed by the teacher, the learner starts directing her talk to herself struggling over finding part of speech of a certain verb. She finally comes to a conclusion with herself and directs the talk to the teacher without coming to a right answer. Below is another example.

Excerpt 18: Metalanguage

- 1 T: according to paragraph 1, what did the students use to make the machine?
- 2 L8: khob, paragraph 1. Yes, yes, they using cameras, pipes, computers.
[well]
- 3 L8: using dorost migam? Na, they use, na, na, na, gozashtas.
[is using correct?] [no, the use, no,no,no, it is past.]
- 4 L8: pas they used, bayad ed begirad. Ba ghaedeh ast.
[so, they used, it must take ed. It is regular.]
- 5 L8: (to the teacher) they used cameras, pipes, mmm. computers.
- 6 T: all right. Very well.

The above excerpt shows how the learner, in an attempt to be accurate, tries to utter a sentence which is syntactically correct. After employing the verb "using" in turn 2, she realizes that she has committed a mistake (turn 3). She (in her self-directed talk) meta-linguistically struggles over the right form of the word. This continues in the turn 4 until she comes to the conclusion over the correct form of the word. Finally, she resurfaces her correct utterance to the teacher in turn 5. Table 2 presents the frequency counts of the content of private speech produced.

Table 2
Types of Private Speech Produced

| Content | Frequency | Percentage | Cumulative frequency |
|-------------------------------|-----------|------------|----------------------|
| 1. Self-directed questions | 44 | 19.73 | 19.73 |
| 2. Affective markers | 15 | 6.72 | 26.45 |
| 3. repetitions | 23 | 10.31 | 36.75 |
| 4. Reading aloud | 12 | 5.38 | 42.13 |
| 5. Literal translation | 48 | 21.51 | 63.64 |
| 6. Reviewing | 13 | 5.82 | 69.46 |
| 7. Self-explanations | 17 | 7.62 | 77.08 |
| 8. Switch to L1 mid-utterance | 40 | 17.93 | 95.01 |
| 9. Metalanguage | 11 | 4.93 | 100 |
| TOTAL | 223 | 100 | |

Discussion and conclusion

The present study was conducted to see what forms and content of private speech markers resurface by Elementary EFL learners while they are focused on reading tasks. The findings showed that the learners produced all three forms but with varying degrees. Furthermore, regarding the content of private speech markers, the findings revealed that the learners produced such private markers as self-directed questions, affective markers, repetitions, reading aloud, literal translation, reviewing, self-explanations, switch to L1 mid-utterance, and metalanguage. However, the most frequent private speech markers used were literal translation (21.51 percent), self-directed questions (19.73 percent and mostly in Persian), and switching to L1 mid-utterance (17.93 percent) which formed 59.17 percent of the total private speech produced.

The results of the study turned out to be illuminating in several ways. First, they showed that high rate of private speech is produced by the learners in an EFL setting in both L1 and L2 while teachers are collaborating the learners in coping with challenging tasks. This is in line with findings of previous studies which posit that task difficulty results in externalization of private speech (e.g., Abdikhah & Khorshidi, 2013; Anani Sarab & Gordani, 2014; Appel & Lantolf, 1994; Boer, 2006; Ebadi, 2014; Khorshidi & Abdikhah, 2013; Lantolf & Frawley, 1985; McCaffery, 1994; Ohta, 2001). When the learners want to take control over a cognitive task, they resort to whatever cognitive functioning they can to keep the floor. Therefore, participants of the present study produced nine types of private speech markers to hold the flow of interaction with their instructors. Second, and most interestingly, most of the private speech markers produced were both in L1 and L2, with the L1 type being of more prominence. The high frequency of switching to L1 mid-utterance, literal translation, and metalanguage private speech markers shows that the participants, due to their low proficiency level, are not rich in their L2 inner speech, that is, according to Vygotsky (1978), they had not yet had L2 as a cognitive tool, thereby resorting to L1 private speech markers in most cases. This is in line with findings of previous studies (Abdikhah & Khorshidi, 2013; Ebadi, 2014; Khorshidi & Abdikhah, 2013; Ohta, 2001, among others). The main function of private speech is its mediating function as a tool in the process of learning. So, as Donato (2000) and Ohta (2001) argued, teachers need not be worried about the language learners' incomplete or incomprehensible utterances as they are striving to internalize their present thinking. The present study, in line with studies conducted on private speech in interaction, (e.g., Abdikhah & Khorshidi, 2013; Appel & Lantolf, 1994; Ceneno-Cortez & Jimenez-Jimenez, 2004; Goudena, 1992; Lee, 2008; McCaffery, 1994; Lantolf & Frawley, 1984;

Ohta, 2001; Smith, 2007) showed that, the same as tasks done individually, in tasks which are conducted by more than one interlocutor, private speech also emerges. However, the mentioned studies had their focus on learner-learner interactions. The present study showed that, even in teacher-learner interactions, which are of a competent-novice nature, private speech emerges depending on the difficulty nature of the task (c.f. Goudena, 1992; Smith, 2007).

Such resurfacing could be due to contextual variables including teacher wait-time, teacher's strict classroom management, task difficulty, learners' language proficiency and so on (Goudena, 1992; Martinez, 2007; Ohta, 2001; Smith, 2007). Therefore, teachers should be aware of reasons for occurrence of private speech markers both in L1 and L2, so that they know how to react in their interactional encounters while directing learners towards challenging tasks. As the findings of the present study demonstrated, a lot of L1 private speech markers might emerge during the task activities which are cognitively challenging for L2 learners, especially in low levels of proficiency; therefore, despite the common policy of "no L1 use in L2 classes" which is strictly followed by many Iranian EFL teachers, use of related-to-L1 private speech markers should be embraced.

The effect of teachers' classroom talk-in-interaction on the employment of different private speech markers in interactional dyads between the instructor and language learners is still in its infancy. Due to the context specificity of private speech and also the deeply explorative nature of qualitative research in this area, which has for sure not been touched upon well by researchers, it is inevitable for classroom researchers to put the issue in the spotlight more comprehensively. Although the present study could shed some light on classification, type and frequency of different private speech markers which happened in interaction between teacher and learners in this particular context, more research is needed to be conducted on the issue in different settings both with teachers and learners with different characteristics from that of those in the present study. Also, since the study was conducted on classes with female participants, both teachers and learners, conducting other studies in the same or similar context, both with the same-sex male teacher and students and also opposite-sex teacher and learners, is recommended. Further, the present study was conducted on elementary EFL learners. Since several researchers (e.g., Abdikhah & Khorshidi, 2013; Ebadi, 2014; Ohta, 2001) have found that elementary EFL learners, due to lack of adequate proficiency in their L2, produce a high rate of private speech markers, conducting more studies on intermediate and advanced EFL learners is mandatory to see whether the same results can come about. And finally, due to the possible trade-off effect of task difficulty on production rate of private speech markers in either L2 or L1, conducting more research on participants with the same level of proficiency in doing tasks which embrace different types of linguistic genre is also recommended.

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Appendix

Transcription Conventions

- () Brackets indicate comments from the transcriber
- (.) Each dot enclosed in brackets indicates one second pause in the talk
- = Equal signs show latches between utterance
- [] Square brackets show an action in the context or translation
- A dash indicates the sharp cut-off of the prior sound or word
- . A full stop indicates a stopping fall in tone. It doesn't necessarily indicate the end of a sentence.
- ? A question mark indicates a rising inflection. It does not necessarily indicate a question.