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Metacognitive awareness and the fluency of task-based oral output across planning conditions: The case of Iranian TEFL students

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ABSTRACT

The present inquiry inspected the impact of metacognitive awareness on the fluency of 114 Iranian TEFL learners' task-based oral output. The participants in six intact classes were selected from a population of 120 English sophomores based on their scores on proficiency pre-test. The classes were randomly assigned as two tripartite groups of experimental and control participants each embracing three groups of pre-task planners (PTP), on-line task planners (OLP), and pre and on-line task planners (POLP). The fifteen-session metacognitive awareness program in the form of a topic-based listening and speaking course was based on Cotterall's (2000) principles of autonomous learning and three sets of metacognitive strategies, centering learning, arranging and planning learning and evaluating learning (Oxford, 1990). Employing a narrative task type, the researcher collected the data using a 2x3 factorial design with two levels of metacognitive awareness and three levels of planning. It was hypothesized that fluency would improve through metacognitive awareness under various planning conditions. Two-way Repeated Measures and One-way ANOVA analyses of the research data revealed significant fluency gains in all experimental participants compared to the control ones and in the control POLP planners. The findings have pedagogical implications for educators and teachers and highlight the need for strategic investment.

Keywords: fluency; metacognitive awareness; oral output; repair fluency; task planning

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Introduction

A cursory look at the post-method language pedagogy will accentuate the gradual evolution of the profession to an intricate discipline encompassing a wide range of issues pertaining to educators, teachers, and language learners as well as those related to the political and sociocultural factors. Each of these factors may directly or indirectly realign the teaching and learning processes and the tendencies of the learners. Owing to the intricate interplay of the variables involved, Kumaravadivelu (2003) underscored *particularities* that govern each specific teaching process and the need for reflective teaching to boost instructional effectiveness.

Overshadowing the parameter of *particularity*, however, is the credence given by experts in the field to learner autonomy and oral proficiency as two common goals characterizing instructional contexts globally. Finney (2002) suggested that the major goal of education should be defined in terms of the processes and procedures by which individuals develop understanding and awareness and create possibilities for future learning. When this general educational aim is applied to language pedagogy, it seems inevitable to equip learners with the knowledge and skills required for autonomous and self-directed language learning because the complexity of language makes it virtually impossible for learners to restrict their learning to limited class time. The recent upsurge in autonomous language learning emanated from the ratification of limited available pedagogical resources in terms of time and facilities, on the one hand (Nunan, 1988), and from the growing demand for efficient second/foreign language learning, on the other (Harmer, 2001).

Another prevailing feature that might seem contradictory with the *particularity* facet of postmodern pedagogy is the priority given to fluent oral language proficiency by many learners in remarkably different contexts. The legitimate emphasis over fluency was triggered by the need for oral skills in the era of communication and internet. What is expected from English learners nowadays is a fluent command of the language that permits smooth flow of communication. Yet, fluency remains so farfetched for numerous language learners particularly in EFL contexts that are characterized by highly restricted opportunities for authentic interaction. The major question preoccupying many English teachers is, thus, the extent to which fluency might be promoted and whether strategic investment and metacognitive awareness can be regarded as viable solutions.

Literature Review

Strategic Investment

Consensus has grown in recent years among scholars and educators over the dynamic and complex nature of the language input, the process of language learning as well as the learners' use of various processing mechanisms and learning strategies. The swing of the educational pendulum in favor of learner-centeredness in the last quarter of the twentieth century underscored the need to cope with this complexity by taking into account and relying upon numerous learner resources. Nunan and Lamb (2001) accentuated strategic investment as an efficient and effective technique for involving the learners in the process of language learning and raising their awareness of how to improve their learning. Likewise, Wenden (2002) acknowledged the crucial role learner-oriented techniques such as personalizing instruction, basing learning tasks on learning style preferences, and involving learners in self-assessments can play in augmenting learning outcomes in the short run and promoting learner autonomy in the long run.

Strategic investment is compatible with the neo-Vygotskian mediation model of cognitive development and language learning according to which human mediation can maximize the

effectiveness of symbolic mediation and promote the learner's performance (Kozulin, Gindis, Ageyev, & Miller, 2003). Human mediation is intimately linked to Vygotsky's (1987) concepts of intramental and intermental development. That is to say, individual psychological functioning is assumed to emerge initially in the interaction between the learner and a more capable individual and further to evolve as an internalized function.

Although Neo-Vygotskians (e.g. Karmiloff Smit, 1992; Kozulin, 1998; Lantolf, 2009), emphasized the multiplicity and diversity inherent in the parameter of human mediator, in language classrooms mediation takes the form of either teacher mediation with forms as diverse as modeling, contingency, management, feedback (Tharp & Gallimore, 1988) or cognitive structuring which comprises metacognitive strategies for organizing students' work. Cognitive structuring, however, is inherently a subconscious process which can be itself subject to intramental and intermental development. In other words, teacher mediation can be extended to address cognitive structuring through learner awareness programs.

Despite general countenance lent to learner training as the ultimate goal in learner-centered pedagogy (Allwright, 1981; Dickinson, 1987; Ellis & Sinclair, 1989; O'Malley & Chamot, 1990), a yawning chasm between theory and practice in learner investment characterized initial learner-centered classroom practice. Recent upsurge in learner training research stems from the basic need of many language teachers for detailed guidelines on developing learner-centred activities in particular contexts. Nunan (1991) recommended incorporation of language content goals and learning process goals, and proposed a five-level theoretical framework for encouraging learner autonomy comprising awareness-raising, involvement, intervention, creation, and transcendence. Accordingly, the learners are made aware of the pedagogical goals and content of the materials they are using by identifying strategy implications of pedagogical tasks and their own preferred learning styles and strategies. Then, they select their own goals from a range of alternatives, intervene in modifying and adapting the goals and contents of the learning program using various tasks, create their own goals, objectives and tasks, and finally go beyond the classroom and link the class content to the real world through gaining independence from the teacher.

Methodologically, various combinations of these theoretical levels seem viable in particular educational contexts. The stages might be implemented in the same order or might be adapted with regard to learners' needs and availability of resources. In exposure-restricted EFL contexts, levels 2 and 3 might be skipped due to the enormous demand they make on the learners, and level 5 might be a very slow process starting at elementary and pre-intermediate levels. At various levels, what students actually do is to explicitly or implicitly learn and practice strategies at various stages of planning, monitoring and evaluating their learning (Oxford, 1990; Nunan & Lamb, 2001; Wenden, 2002).

Likewise, Cotterall (2000) directly addressed the issue of incorporating autonomy into language courses proposing that the transfer of responsibility to learners occur if the selected task and strategies are authentic and compatible with learners' needs, explicitly linked to a simplified model of the language learning process, and complemented with discussion, practice, and reflection on learning. Hence, the question is whether and to what extent might language teachers transfer the responsibility for sustaining fluency in their speech to their learners. Any response to this question entails an account of how fluency develops in one's speech and how it might be measured.

Fluency

Fluency has been defined as natural and normal language use marked with native-like rhythm, stress, intonation, rate of delivery and pausing as well as use of interjections and interruptions (Richards, Platt, & Weber, 1985), natural language use demonstrating speed and continuity, coherence, context-sensitivity, and creativity which are related to four sets of psychomotor, cognitive, affective and aesthetic abilities (Brumfit, 1984), and an automatic procedural skill and a performance phenomenon (Schmidt, 1992). Lennon (2000) synthesized earlier definitions by proposing fluency as “the rapid, smooth, accurate, lucid, and efficient translation of thought or communicative intention into language under the temporal constraints of on-line processing” (p. 26). This definition is close in content to the one offered by Skehan (1996) to whom fluency is the learners' capacity to mobilize their interlanguage systems to communicate meanings in real time.

Three models have been offered to account for the development of fluency: accelerating models, restructuring models, and instance models. According to the first model, the proceduralization of declarative knowledge (Anderson, 1985) follows a natural sequence in which similar processes are used more quickly and with less demand on mental resources. Restructuring models link fluent performance with better algorithms that assist organization of performance. In contrast, instance-based models attribute more fluent performance neither to quick application of rules nor to more efficiently organized rules, but to contextually-coded exemplars which are the product of consistent rule application. It is assumed that such exemplars are presumably stored in exemplar form and retrieved as wholes and, thus, require less processing capacity.

Skehan (1996) advocated the third interpretation of fluency as the most applicable to foreign language learning and undermined the influence of choice of attentional direction, as well as the use of attentional resources on processing mechanisms. He strived to account for the development of accuracy, complexity and fluency of oral performance with regard to Schmidt's (1990, 1994) three-faceted model of consciousness as awareness, as control and as attention. In explaining the benefits of consciousness-as-awareness, Skehan (1998) highlighted the significance of noticing the gap and better appreciating the instructional opportunities. Further evidence was offered by Karmiloff Smith (1986, cited in Foster & Skehan, 1996) who highlighted the facilitative role of awareness in enhancing restructuring and making the newly learned materials more accessibly transformable. Thus, consciousness-as-awareness might play a role in changing the rule-based systems to exemplars on subsequent occasions, and thereby, enhancing fluency. On the other hand, consciousness-as-attention, according to Skehan's dual competence system (1996), explicates the trade-offs in learner's focus of attention resulting in varying degrees of accuracy, complexity, and fluency. As for stages of input, central processing, and output, Skehan (1996) ascribed accuracy to learners' capacity to handle different levels of interlanguage complexity they have achieved, complexity as the elaboration of the underlying interlanguage systems, and fluency as the learners' capacity to mobilize an interlanguage system to communicate meanings in real time.

Fluency has been quantified by comparing fluent and non-fluent speakers (Ejzenberg, 2000; Riggenbach, 1991), correlating fluency scores with temporal variables (Rekart & Dunkel, 1992, Fulcher, 1996). Foster and Skehan (1999) made a distinction between *breakdown fluency* and *repair fluency*. In the former view fluency is measured in terms of the number of pauses while the latter quantifies fluency through quantification of *reformulations*, *repetition*, *false starts*, and *replacements*. More specifically, reformulations refer to repetition of phrases or clauses with some modification to syntax, morphology, or word order. The second aspect of repair fluency comprises *repetitions* of words, phrases or clauses with no syntactic, morphological modifications. *False starts* are in fact utterances that are abandoned uncompleted and *replacements* or lexical items that are immediately substituted for another. More recently, Kormos and Denes (2004) applied a more precise method by analyzing speech in terms of seven temporal features of speech rate, articulation rate, mean length of runs, number of silent pauses per minute, mean length of pauses, number of filled pauses

per minute, and number of disfluencies per minute in one recorded sample (Kormos & Denes (2004).

Empirical Background

Cornerstone in investigations of fluency is the use of tasks which, according to Azabdaftari (2013), “should serve as a means to relieve the language learner of attending consciously to language form and help him focus on the ways of conducting natural verbal interactions”. Most of the task-based studies of fluency were centered on task planning. Research on the effect of different levels of planning (Yuan & Ellis, 2003), the amount of time allocated for planning (Mehnert, 1998), planning and focus on form (Ortega, 1999), detailed and undetailed pre-task planning (Rouhi & Saeed-Akhar, 2008), mixed planning (Birjandi & Seifoori, 2008) support the role of planning in improving various features of language production including fluency. Moreover, positive impacts were reported from fluency strategy training (Seifoori & Vahidi, 2012) and oral output (Seifoori & Goudarzi, 2012) on fluency of EFL learners’ breakdown fluency.

A number of studies addressed the impact of different levels of planning on various features of EFL learners’ oral performance. Yuan and Ellis (2003) explored the effects of both pre-task and on-line planning on L2 oral production. Using a picture description task, they reported improvements in complexity and fluency under pre-task planning and positive influence on complexity and accuracy under on-line planning.

In the context of Iran, the impact of simultaneous pre-task and on-line task planning was investigated on the accuracy of Iranian learners’ task-based speech by Seifoori and Birjandi (2008). They reported significant accuracy gains among the mixed planning group who were allowed to plan their performance prior to the task and during task performance. In a similar study, Birjandi and Seifoori (2009) investigated the impact of metacognitive training on the complexity of Iranian TEFL learners’ task-based speech and found no significant effect.

Rouhi and Saeed-Akhtar (2008) explored the effects of detailed and undetailed planning on accuracy and frequency of speech produced by three groups of English majors who watched a cartoon and narrated their accounts of watching under no-planning, undetailed pre-task planning and detailed pre-task planning conditions. They found statistically significant difference in fluency between the no-planning group and the undetailed group on the one hand, and between no-planning group and the detailed planning group, on the other hand, but no effect was reported on accuracy.

Studies of fluency, however, have not been restricted to task planning. Sadeghi Beniss and Edalati Bazzaz (2014) investigated the impact of pushed output tasks like picture description, question and answer, and retelling on accuracy and fluency of Iranian EFL learners’ speaking and reported positive impacts merely on accuracy. Seifoori and Goudarzi (2012) found pushed output tasks of picture description effective in promoting both accuracy and fluency of EFL learners when preceded by instructions on how to use different fluency and accuracy strategies.

Richards, Platt, and Weber (1985) defined fluency in terms of features such as “rhythm, intonation, stress, rate of speaking, and use of interjections and interruptions which make one’s speech natural and normal” (p. 108). They further accentuated the role of fluent oral performance as an indicator of one’s level of communication proficiency in second and foreign language learning. Although fluent performance might be envisaged as a secondary goal for many learners of English, particularly in foreign language contexts (EFL), it should be borne in mind that university students majoring English Language Teaching (ELT) are expected to function as the sole source of live

English for their prospect teachers and thus need to develop an accurate and fluent command of the language they are to teach. In addition, they need to learn how to control various features of their speech through application of various metacognitive strategies. The impact of metacognitive strategy awareness on accuracy of Iranian TEFL students proved positive (Seifoori & Birjandi, 2008) whereas no positive impact was reported from mixed planning on complexity (Birjandi & Seifoori, 2009). Based on previous research findings, the present enquiry sought to investigate the impact of metacognitive awareness on the fluency of TEFL students' oral output across PTP, OLP and POLP planning conditions. Although investigation of the participants' breakdown fluency would have rendered a more comprehensive account, the executive difficulty involved in measuring oral performance of one hundred and fourteen participants left the researcher with no option but to delimit the measurement process exclusively to repair fluency. The following research questions were thus formulated:

1. Does metacognitive awareness enhance the fluency of TEFL students' oral performance?
2. Do metacognitive awareness and task planning have interactive impacts on the fluency of TEFL students' oral performance?
3. Does metacognitive awareness influence the fluency of TEFL students' oral performance across various planning conditions?

Method

Participants

A sample of 114 female (N=91) and male (N=23) Iranian TEFL students at Islamic Azad University-Tabriz Branch participated in this study. The participants were selected from a population of 120 TEFL sophomores on the basis of their proficiency scores, which will be described in more detail below. The sample, comprising six intact classes, was randomly assigned as experimental and control groups with three classes falling in each group that were further randomly assigned as the pre-task planners (PTP), on-line task planners (OLP) and pre/on-line task planners (POLP).

Instruments

Three tests were deployed to collect the research data. First, a Preliminary English Test (PET) was administered to verify the initial homogeneity of the groups. The test results were analyzed via a one-way ANOVA, with the alpha set at .05, which revealed no significant differences among the groups, $F = .31, p = .90$.

Two different picture strips comprising six pictures were used as the pre-test and the post-test and the participants were required to orally produce at least four sentences describing each picture. Both tasks were administered as classroom activities. The recorded data were further transcribed and the participants' repair fluency was quantified and compared. No significant difference was observed in the repair fluency of the experimental and control groups on the pre-test, $t_{(118)} = .83, p = .40$.

Procedure

The awareness-raising treatment which was designed for the experimental groups was a topic-based listening and speaking course that lasted fifteen weeks and was based on Cotterall's (2000) principles of autonomous learning. The selected tasks and strategies were congruent with course objectives and were linked to the "recognition to production" or the PPP Model of language teaching which emerged from Communicative Language Teaching (CLT) (Richards & Rodgers, 2004). Although the tasks were far from authentic and focused on a limited set of grammatical structures (simple past and past continuous) they provided the participants with opportunities to discuss and practice strategies known to facilitate task performance. At the strategic level, six major metacognitive strategies were selected, based on Oxford (1990), at three broad levels of centering learning via overviewing and focusing attention, arranging and planning learning via identifying the purpose of the task and planning for that, and finally evaluating learning through self-editing and self-evaluation.

The tasks were performed under three different planning conditions: PTP, OLP, and POLP in the experimental and control groups. New words required for the completion of the task were provided so that learners could focus on organizational and grammatical planning of the story. The PTP groups were allowed to spend ten minutes to plan the content and the language of the task at hand, take notes if necessary, and to narrate a story based on the pictures without looking at their notes. The OLP planners were first told about the significance of on-line planning of their performance through using complete sentences and fillers. Then, the same picture strips were distributed and two minutes was allocated for previewing the story. The POLP groups were allowed to spend eight minutes on pre-task planning and eight minutes on narrating the story while planning on-line.

Following Foster and Skehan (1999), fluency was estimated in the current study as the ratio of the sum of repair fluency measures, reformulations, false starts, repetitions, and replacements, to the number of c-units produced by each participant. Two independent experienced raters scored the transcript data for fluency indices. The inter-rater reliability of the pre-test and post-test scores was computed through "a coefficient alpha" and the average scores were used as a basis for further statistical analysis after the inter-rater reliability indices were acceptably high for the pre-test (.87) and post-test scores (.93).

Results

The Impact of Metacognitive Awareness

To estimate the influence of the metacognitive awareness on the participants' fluency, as posed in research question 1, the fluency measures of the 58 experimental and 56 control participants obtained from the oral post-test were submitted to an independent samples t-test, as depicted in Table 1.

Table 1
Descriptive Statistics and the Independent Samples t-test for the Post-test Fluency of the Experimental and Control Participants

Group	N	Mean	Std. Deviation	t	df.	p
Post-test Fluency Experimental	58	.36	.25	-2.62	112	.01
Post -test Fluency Control	56	.60	.66			

Table 1 illustrates that the experimental participants, with an averages of .36, outperformed the control participants, with an average of .60 and that the difference between the groups reached significance level $t(112) = -2.62, p < .05$. Hence, the answer to the first research question is positive: metacognitive awareness does enhance the fluency of task-based output, as reflected in the decline in groups' overall repair fluency signifying an increase in their fluency.

Interactive Impact of Metacognitive Awareness and Task-Planning

To answer the second research question, however, I analyzed the pre-test and post-test fluency scores of the participants using repeated measures Analysis of Variance (ANOVA) as well as a one-way ANOVA. The alpha for achieving statistical significance was set at .05. Table 2 presents the groups' average fluency scores.

Table 2
The Pre-test and Post-test Descriptive Statistics for the Fluency

Metacognitive Training		Planning	Mean	Std. Deviation	N
PRE- FLU	Experimental	PTP	.75	1.09	18
		OLP	.50	.48	20
		POLP	.67	.44	20
		Total	.64	.71	58
PRE- FLU	Control	PTP	.80	.82	18
		OLP	.58	.50	18
		POLP	.81	.61	20
		Total	.73	.65	56
Total		PTP	.77	.95	36
		OLP	.54	.49	38
		POLP	.74	.53	40
		Total	.68	.68	114
POST- FLU	Experimental	PTP	.40	.31	18
		OLP	.45	.22	20
		POLP	.26	.19	20
		Total	.37	.25	58
POST- FLU	Control	PTP	.90	.92	18
		OLP	.60	.57	18
		POLP	.34	.25	20
		Total	.60	.66	56
Total		PTP	.65	.72	36
		OLP	.52	.42	38
		POLP	.30	.22	40
		Total	.48	.51	114

According to Table 2, the pre-test averages for PTP, OLP, and POLP experimental planners were .75, .50, and .67. In the control groups the mean scores were PTP=.80, OLP=.58, and POLP=.81. On the post-test, however, the fluency averages for the experimental PTP, OLP and POLP planners showed a radical decline to .40, .45, and .26, respectively, indicating a raise in the fluency of their speech while the post-test averages for the counterpart control planners showed more unsystematic fluctuations (PTP=.90, OLP=.60, and POLP=.34). As for the control planners, the only repair fluency decline was evident among POLP planners whose repair fluency average decreased from .74 on the pre-test to .34 on the post-test. It should be borne in mind that the lower the measures, the more fluent the speech.

A two-way repeated measures ANOVA test was run to determine whether the groups' differences in fluency measures from the pre-test to the post-test were significant. Table 3 presents the results.

Table 3

The Two-way Repeated Measures ANOVA Results for the Effect of Metacognitive Training and Planning on Post-test Fluency

Source	FACTOR 1	Mean Square			
		df.	F	Sig.	
FACTOR 1	Linear	1	2.11	5.95	.01
FACTOR 1* Training	Linear	1	.33	.93	.33
FACTOR 1 *Planning	Linear	2	.95	2.68	.07
FACTOR 1	Linear	2	.33	.93	.39

As indicated in Table 3, the changes from the pre-test to the post-test reached significance level, $F=5.95$, $p = .01 < .05$. However, none of the interactive effects of the metacognitive awareness ($F=.93$, $p=.33 > .05$), planning levels ($F=2.6$, $p=.07 > .05$), and the metacognitive awareness and levels of planning ($F=.93$, $p=.39 > .05$) had significant effects on the fluency of the participants' task-based oral performance.

Metacognitive Awareness across Task-Planning Conditions

Further, the researcher conducted a one-way ANOVA test on the post-test fluency measures of the experimental groups to probe the impact of metacognitive awareness on the fluency of the experimental participants' speech across the three planning conditions. The results of this analysis are presented in Table 4.

Table 4

One-way ANOVA between Groups' Results for the Effects of Planning Levels on Fluency

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.49	2	.24	4.15	.02
Within Groups	3.26	55	.05		
Total	3.75	57			

The findings, as demonstrated in Table 4, indicated some significant difference among various planning levels ($p = .02$) which called for a post-hoc test to locate the difference, as illustrated in Table 5.

Table 5
Post Hoc Test for the Effects of Levels of Planning on Fluency of the Experimental Groups

		Mean Difference (I-J)	Std. Error	Sig.
PTP	OLP	-.050	.079	.797
	POLP	.162	.079	.110
OLP	PTP	-.050	.079	.797
	POLP	.213*	.077	.021
POLP	PTP	.162	.079	.110
	OLP	.213*	.077	.021

The results of the Tukey post-hoc test in Table 5 indicate significant difference in fluency gains among experimental POLP planners who outperformed the other experimental planners and produced more fluent speech. The difference between the POLP planners with the lower average of .26 was not significantly different from that of the PTP planners with a mean of .40. Yet, the POLP planners speech was significantly more fluent compared to OLP planners with an average of .45, $p=.021 < .05$.

Figure 1 illustrates the changes in the fluency of speech produced by the experimental planners from the pre-test to the post-test.

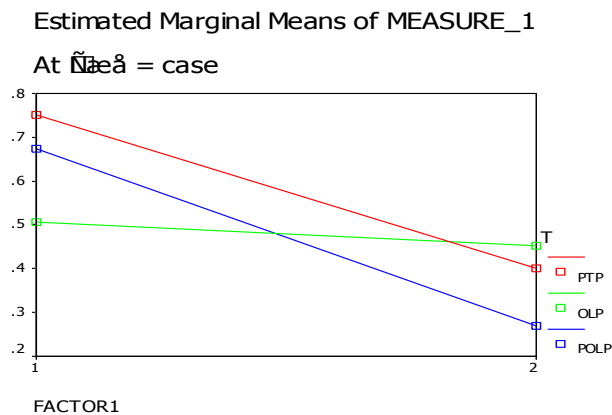


Figure 1. Changes in the dyfluency of the experimental planners' pre and post-test speech

As Figure 1 illustrates, the experimental PTP and POLP planners' speech is marked with a radical reduction in repair fluency features suggesting some improvement from the pre-test to the post-test. Figure 2 illustrates the changes in the fluency measures from the pre-test to the post-test in the control planners.

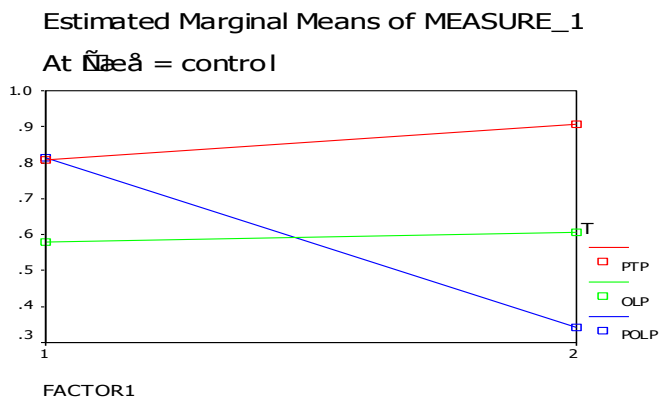


Figure 2. Changes in the dyfluency of the control planners' pre and post-test speech

Among the control planners, as illustrated in Figure 2, only the POLP planners indicated a fundamental decline in dyfluency measures, and thereby, improvement in fluency.

Discussion

Iranian students majoring in TEFL are would be English teachers who are expected to function as models for their prospective students. What they are assumed to develop during the first two years of their studies is a good command of English that allows native-like performance in the four language skills. This rudimentary knowledge base is assumed to facilitate the process of grasping and internalizing theoretical and methodological subjects of the curriculum related to teaching skills in subsequent semesters. Among the four skills, however, speaking plays a more significant role with regard to academic needs of the learners and the global demand for oral proficiency. Meanwhile, achieving an accurate and fluent command of spoken English has proved a daunting task for many adult learners in EFL contexts. Prior scrutiny (Levelt, 1989, 1999; Poullisse, 1997) provided conclusive evidence that the knowledge of a second language (L2) learned after critical period in an EFL context is typically incomplete and that L2 speech is generally influenced by L1 and, thus, less fluent (Pulisse, 1997). Further research findings, however, bore on the effectiveness of strategic investment in optimizing instructional opportunities for second and foreign language learners (Dornyei, 1995; Cohen, 1998; Oxford, 1995).

The research findings suggest that inclusion of some productive tasks along with strategic training on how to plan oral speech as well as sufficient time for pre-task and on-line planning, all subcategories of metacognitive strategies, might prove effective in enhancing oral performance. The applicability of metacognitive training and various forms of task-planning, as hypothesized and confirmed in the present enquiry, seems productive for freshmen and sophomores majoring in TEFL who need to attend to various features of their speech right from the beginning of their graduate studies.

The research findings substantiated significant difference among the experimental and control planners $t_{(112)} = -2.621, p=.010 <.05$, supporting the positive impact of the metacognitive awareness-raising program, as addressed in the first research question. The findings are in line with

those of Seifoori and Vahidi (2012) who reported a positive effect from fluency strategy awareness under on-line planning condition on the breakdown fluency of 25 participants who managed to minimize their use of unfilled pauses as a result of, as they suggest, a gradual 15-session awareness they received in how to use fillers as a strategy to sustain the fluency of their speech. The gains in fluency among the experimental groups in this study provide further evidence to corroborate the facilitative role of task planning in enhancing fluency.

Likewise, figures 1 and 2 suggest some radical decrease in dyfluency measures in the speech of the experimental and control POLP planners. It is, thus, sensible to attribute the significant growth of fluency in the experimental planners to the focused training they received in monitoring their performance. The same developmental increase in fluency illustrated in the control POLP planners, the dyfluency of whose speech declined drastically from .81 on the pre-test to .34 on the post-test, might be associated with the double planning time they had for pre-task and on-line planning.

The results of the one-way ANOVA and the Tukey test, however, revealed that fluency gains were significantly higher among POLP planners who could achieve higher degrees of fluency only compared to OLP planners, $F=4.15$, $p=.021 < .05$. This positive impact might be interpreted with regard to Schmidt's (1992) review of psychological mechanisms underlying fluency and how these could be promoted. Based on this review, fluent performance might be accounted for in terms of three models - *accelerating models*, *restructuring models*, and *instance models*. Accelerating models are based on the proceduralization of declarative knowledge (Anderson, 1985) which is claimed to follow a natural sequence. Fluency develops when rules are applied with less demand on mental resources and, thus, more rapidly. Restructuring models associates fluent performance with more efficiently organized rules, whereas instance-based models highlight the role of contextually-coded exemplars which are the product of consistent rule application. While performing oral tasks, Participants in this study seem to have taken advantage of more prior pre-task and on-line planning time to choose the right attentional direction and to have employed mental resources more rapidly to speed up their task-based speech.

A close link between planning conditions and accurate oral production has been borne out in previous studies (Foster & Skehan, 1996, 1999; Mehnert, 1998; Yuan & Ellis, 2003). Two conditions need to be met for effective planning to happen. Firstly, the tasks should be at the right level of difficulty so that learners do not need to outperform their performance. Secondly, sufficient amount of time should be provided for conceptual and formal planning. Findings emerging from the present study lend support to the hypothesis that the ability to plan form and content can be enhanced through instruction (Foster & Skehan, 1999), concomitant pre/on-line planning might enable learners to benefit more from the instructional opportunities.

Regardless of various quantification measures employed, the findings from this research lend support to the findings of Foster and Skehan (1996), Roudhi and Saeed-Akhtar (2008), Wigglesworth (1997), Wendel (1997, cited in Ellis, 2003), as well as Yuan and Ellis (2003). Quantifying fluency in terms of pause and total silence, Foster (1996) and Foster and Skehan (1996) reported less frequent pauses and less time in total silence in the speech of PTP planners compared to non-planners, with the effect being stronger on narrative task types compared to decision-making tasks.

Of course, a final note of caution should be inserted. Qualified teachers are required to apply task-supported training programs in foreign language classrooms and to make reliable and valid evaluation of learners' progress and achievement. The findings from this study, thus, accentuate the inevitability of a teacher training program with the aim of familiarizing the novice and practicing teachers with the basics of strategic investment and the principles of measuring oral performance.

Conclusion

Like any other studies in the field of human sciences, the present study suffered from a number of limitations and delimitations. First of all, the study extended over a relatively short period of time. Since the development of metacognition is longitudinal, a fertile field for further research is to conduct some longitudinal case-studies to see whether the findings are confirmed or not. Secondly, the study was based on only two oral performances on narrative task types. Other researchers can replicate the study with different types of tasks. Thirdly, the objectives of strategy training are to develop the learners' strategy systems, learner autonomy, and learner self-direction and self-evaluation (Cohen, 1998) all underscoring the process of language learning. The current study made use of quantitative data from pre-test and post-test results to evaluate the metacognitive training program. One fertile direction for further research would, therefore, be to collect qualitative data from sources such as learners' self-reported application of strategies to complement the findings from this study.

Despite these limitations and delimitations, a number of conclusions and pedagogical implications might be drawn from the present study. First and foremost, the fact that Iranian TEFL learners benefited from the metacognitive awareness-raising activities to boost their fluency emanates their need for strategic investment. Regardless of the origins of this need and the contextual factors, this need has to be addressed either officially by teacher educators and materials developers or by well-informed teachers who acknowledge the difference that metacognition can make in the process of foreign language learning.

Secondly, the higher gains in the POLP planners might allude to the tendency of Iranian learners to make the best of PTP and POLP opportunities. This overall preference seems to have its origin in their cultural belief systems and learning styles. Further research would definitely cast light on these variables. Yet, the findings make the recommendation that curriculum developers should give priority to both types of task planning because they help students direct their attention and exploit resources more efficiently, which can bring about escalation in learners' performance in the long run.

Further, even if contextual restrictions in educational settings call the viability of large-scale strategic investment into question and defy systematic learner development programs, individual teachers can incorporate mixed planning condition of POLP as an alternative fluency-enhancing option. Allotting sufficient time for pre-task and on-line task planning before learners start speaking activities and teaching learners how to use the time constructively will definitely help them, at least less dyfluent ones.

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