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EFL Learners' Perception of Task Experience Through Flow Outlook: Task Complexity and Modality in Focus

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Abstract

Regardless of the appreciation of language learners' achievement in task-based language teaching, not much has been hinged upon learners' perception and reception of various elements. This study examined task complexity and modality effects on Iranian English-as-a-foreign-language (EFL) learners' comprehension of task difficulty, competencies, and difficulty-skill balance as well as the learners' task experience. The Flow Outlook features were also applied to investigate how difficulty-skill balance anticipated flow experience. Via a repeated-measures design, and with a focus on task complexity (simple vs. complex) and task modality (written vs. spoken), 49 EFL learners carried out four argumentative tasks (two simple written and spoken vs. two complex written and spoken tasks); then, they ticked the flow questionnaire to gauge their perception of task difficulty, competence, and task experience. Repeated-measures MANOVA revealed that although task complexity influenced task difficulty and difficulty-skill balance significantly, the skill was not affected significantly; task modality influenced task difficulty and skill significantly while difficulty-skill balance received no significant effect. The follow-up post hoc test indicated that complexity and modality significantly influenced flow, attention, and control, but not interest. Linear regression revealed difficulty-skill balance was a predictor for learners' flow experience for both writing tasks and simple speaking tasks but not for complex speaking tasks. Pedagogically, the findings of this research may have some implications for English language teachers, learners, and materials developers.

Keywords: Task complexity, task modality, task difficulty, flow outlook, task experience

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INTRODUCTION

Language learners' evaluation, response, and action on tasks with their fleeting performance will occur while the language learners are engaged in a task (Breen, 1987). Therefore, a task will not be completely comprehended or performed without paying attention to the learner, the learning process, and performing (Cho, 2018). Since learner attitudes and motivation for learning, eventually influencing longer-term learning, are formulated by learner experience and emotion, the research particularly puts great importance on them (Appel & Gilabert, 2002; Schmidt, Boraie & Kassabgy, 1996; Vollmeyer & Rheinberg, 2006; Waterman et al., 2003). The significant role of language learners as active agents in the learning process is also emphasized by the TBLT, as second language (L2) use is highly respected by this approach. Thus designers purposely create tasks to facilitate the gradual improvement of the target language. Considering this and bearing in mind the recommendations by other scholars (Cho, 2018), it has been the researchers' duty to understand how different task elements and factors engage learners in the learning process in which various task characteristics can render examination, performance, and development of learning opportunities.

It is evident in the literature on TBLT that the cognitive domain of learning has received considerable attention whereas the affective realms in the learning process have been partially ignored by comparison despite playing a significant role in learner experience or task engagement (Khatib & Dehghankar, 2018; Phung, 2017; Préfontaine & Kormos, 2015). Robinson's conceptualization of task complexity and task difficulty (2001a, 2001b, 2005, 2011; Robinson & Gilabert, 2007) has proposed a beneficial framework to differentiate between cognitive and affective perspectives of task performance. In Robinson's (2001a, 2003) viewpoint, task complexity is defined as the objectively manipulated cognitive demands of a task, while task difficulty is defined as the subjectively cognitive demands of a task that are influenced by learners' ability and affective variables. Specifically, it

must be adverted that task difficulty considers learner experiences as an outcome of interacting between task traits and learners (Cho, 2018).

Researchers have investigated task difficulty in cognitively demanding tasks in association with task complexity; however, methodological procedures of manipulating task complexity need further investigation to discover whether conceptualization of task difficulty pairs with task complexity (Révész, Michel & Gilabert, 2016; Sasayama, 2016). Although affective and cognitive phenomena are task difficulty's entailment, seldom has task difficulty been examined along with dimensions as comprehensive ability and its effective results such as task experience.

Furthermore, the learner experience is affected by task modality; input, processing, and production modalities are entailed by the range of modalities and modalities sorts similarly such as speaking, writing, and computer-mediated communication (Cho, 2018; Salimi & Karami, 2019). Modality is defined as different productive styles of speaking and writing. Demonstrating unique and specific language learning environments, the distinction between speaking and writing skill is broadly understood and research into what factors are responsible to distinguish between oral production and written production and how they impact L2 improvement is relatively recent (Azkarai & Mayo, 2015; Gilabert, Manchón & Vasylets, 2016; Kormos, 2011; Kormos & Trebits, 2011; Kuiken & Vedder, 2011; Manchón, 2014).

According to Gilabert, Manchón, and Vasylets (2016), there is a difference between speaking and writing due to the two modalities that "coexist inside the similar cognitive zone to comprise an effective scheme," with a continuous association among the schemes for interlanguage improvement (p. 118). Furthermore, the assortment of spoken and written language is a frequent occurrence in real life that necessitates the demand for using, controlling, and mastering both language modes to accomplish real-life tasks. To select the appropriateness, the task model is educationally an essential vexation for task-oriented instruction; although in modality research, elemental consideration has thus far been given to its impact on

task performance and the learning outcomes, the unfamiliarity of its influence on learner experience is persisting (Cho, 2018).

This study bridges these gaps by testifying how these two characteristics- task modality and task complexity- can affect learner experience. First, it probes if intermediate Iranian English-as-a-foreign-language (EFL) learners' perception of task difficulty and skill is influenced by task complexity and task modality. Second, it examines how these two task factors affect learners' task experience as demonstrated in the Flow Theory (Csikszentmihalyi, 1975, 1990), an entirely strengthened regime of being completely engaged in the activity. Finally, as the difficulty-skill balance debatably determines the flow, the influence of the difficulty-skill balance on flow experience is investigated.

LITERATURE REVIEW

Task Difficulty and Learner's Experience Through Flow Theory

The most typical learner evaluation of a given task is probably the understanding of task difficulty. Task characteristics and content (Révész & Brunfaut, 2013), learner traits (Ben Maad, 2012a), and performance situations (Wu, 2003) are considered the various variables influencing this notion. Since an intellectual evaluation of the challenge level of a task will be established by task difficulty, it has been employed in the mental-communication approach in L2 learning (Cho, 2018). Task difficulty investigation has mostly focused on task complexity brightness, where it has been widely practiced to guarantee that the manipulated task complexity must adjust to the task difficulty perception (Gilabert, 2007; Révész et al., 2016; Robinson, 2001b; Sasayama, 2016). Similarly, task difficulty thus far has been largely interpreted as an auxiliary conception that can methodologically authenticate/ approve the task characteristics

functionalization (Appel & Gilabert, 2002; Tavakoli, 2009; Zarei & Moftakhari Rezaei, 2017).

Some studies (Appel & Gilabert, 2002; Robinson, 2001b; Robinson & Gilabert, 2007) found a capital association with task difficulty and other related emotional responses specifically stress and interest. For instance, Robinson (2001b) has shown how a learner's understanding of task difficulty is attached to different influencing factors such as stress, interest, and perceived confidence, meaning that learners viewed a complex task harder and more stressful, but also more fascinating compared to a simple task. Likewise, complex tasks were presented to be more stressful by the participants in Ishikawa's (2011) study, and the participants' performance was poor in complex tasks than in simple ones, although, more interest was shown in the complex tasks. Gilabert also revealed (2007) an association between task complexity and progressed task difficulty and stress, and low level of confidence; simultaneously, task complexity did not influence the learners' interest and motivation. Such studies reveal a close connection between task difficulty and learner influence. However, their relationship is not clear; that is, while stress is increased by task complexity, interest is also added occasionally (Ishikawa, 2011; Robinson, 2001b). The results of these studies, however, reveal the generalizability limitation because the learners responded to a few items of a questionnaire.

This study hypothesizes how Csikszentmihalyi's (1975, 1990) flow construct represents multi-aspect learner feelings and influential experiences with a task, and how learners experience enjoyment and interest in performing tasks, with an eye on intellectual concentration, and authority over a task. This flow is a mental state that learners concurrently experience psychologically being glad, motivated, and interested (Moneta & Csikszentmihalyi, 1996). The optimum intellectual situation appears when an optimum activity challenge is authorized; the optimum challenge will be personally discovered in the terms of the anticipated task difficulty and anticipated skills for activity and also when the challenge rank is inside the

accessible rank of an individual's competency to perform the activity profitably (Moneta & Csikszentmihalyi, 1996).

The significance of flow in student experience and learning is attached to the fact that flow causes improved performance in two various directions. Firstly, at a theoretical level, flow is a practical condition (mentally effective and concentrated) that can assist the performance progress. Secondly, when flow specifies a positive emotion and experience, it is more expected that people who have been experiencing flow are apt to exert themselves on experiencing flow again by placing higher challenges (Engeser & Rheinberg, 2008; Safdari & Maftoon, 2016). It resounds to Csikszentmihalyi's (1990) assertion that individuals will touch an advancement sense in self through an uncovering that will urge them to boost performance aptitude. Considering L2 learners' ability and aptitude, their understanding of task difficulty is defined as essential in anticipating the learner experience in L2 tasks. Through an association between a noticed task difficulty and learner experience, Csikszentmihalyi's (1975, 1990) flow suggested a methodical foundation to discover their friendship.

The Role of Task Complexity and Modality in Task Experience

Although abundant task and circumstantial features and learner variables (the presence of language skills and ambition) are included in the learner experience, this section concentrates on two task traits (i.e., complexity and modality) that affect learners' understanding of task difficulty and task experience. First, task complexity reverts to the intellectual requests of the task which can be extrinsically maneuvered by adjusting the construct of a task, for instance, by involving more essential features to endorse (positive or negative features) and elevating mental requests (positive and negative mentality) needed to answer a question in a task (Robinson, 2001a). The task complexity impact on task presentation and learning gained various kinds of research determining that task complexity is a necessary variable in

the area of sketching and ordering tasks (Jackson & Suethanapornkul, 2013). Nevertheless, some studies explore the impact of task complexity on learners' mental and emotional task experiences. The impact of task changes on learner impact is as vital as its influence on task presentation or language learning due to learner experience which is highly connected to improving and maintaining learner encouragement and long-term learning.

Some studies have indicated the association between task complexity and learner experience, but this association has been analyzed through conciliation of the task difficulty. Most aptly, since task requirements are communication productions between the test-taker's skill and the task features, this demonstrates the experimental challenges of disconnecting task complexity from task difficulty (Bachman, 2002). Although plentiful studies considered the task difficulty as an inferior issue in the task complexity research (Gilabert, 2007; Révész et al., 2016; Robinson, 2001b; Sasayama, 2016), studies by Ben Maad (2012a, 2012b) considered it as the superior core of research to examine its impact on learner encouragement. He concluded that the connection between task difficulties can be influenced by task complexity, and that learner encouragement is interceded by a learner's purpose adaptation. The learner's understanding of task difficulty changes into an incapacitating determinant curbing task involvement if learners continue the purpose of indicating their skills through task presentation. Contradictorily, if a learner's purpose is learning from the task, observed task difficulty will develop into an impetus for learner encouragement and involvement.

Second, since task modality has been contemplated in terms of various task presentation atmospheres rather than task characteristics, the fashion of language production has received insufficient attention in previous research. Notwithstanding, beyond the increasing curiosity in writing cognitive L2 studies, the modality has newly been investigated in terms of its possibility for L2 achievement (Gilabert et al., 2016; Jafarigohar & Morshedian, 2014; Kormos, 2011; Manchón, 2014), improving a chiefly dedicated research zone to comprehend verbal language improvement.

While an ordinary linguistic cognitive performance will be shared by verbal and written language, foraging one another for language advancement (Ravid & Tolchinsky, 2002), all of their likenesses and differences support awareness regarding L2 improvement. Furthermore, teachers' instructionally relevant and essential worry is determining an acceptable task mode being dependent on predictable corollaries for learner influence with learning effects.

Considering fundamental psycholinguistic structures, the methods of vocal and composed productions are not different, but they alter in their functionalization (Kormos, 2014; Ochs, 1979; Ravid & Tolchinsky, 2002). A broad consideration is that they are differentiated between three elements: (a) a learner's being absent or present during task production, (b) the establishment of producing language, (c) a learner's rank of power or control over linguistic productivity (Ravid & Tolchinsky, 2002). Withal, while speech is momentary and all the oral information should be absorbed in the speaker's mind, a writer's mind is free from cultivating created linguistic information since the writer's dependence is on extrinsic performances of the written text. Seemingly, controlling, planning, and observing chance in writing specify positive situations for writers, and these dissimilarities can be a colleague with the idea of the minor mental amount of writing versus speaking (Grabowski, 2007).

In sum, the previous literature indicates a scarcity of investigations caring about learner experience with different task features; moreover, it proposes that learners' reply to the psychological level of a task is not always related to task difficulty, but intercedes between different task traits and learner experience. Especially from Flow Viewpoint, the significance of learner experience in learning a language demonstrates this point that flow is a salient prognosticator of persisting encouragement, responsibility, and learning presentation (Schmidt et al., 1996). Csikszentmihalyi (1997) symbolically characterized the flow as a lure of learning, considering that progressed task challenge and the skills development that complement to growing challenge, are necessary for continuous flow recognition. Hitherto,

opposite to abundant investigation consideration to the impact of task traits on performance and learning, approximately less is established about learner experience or flow concerning task traits. In this study, these gaps are tackled to discover L2 learners' task experience when it is influenced by task complexity and modality. To perceive learner experience, Csikszentmihalyi's (1975, 1990) flow is approved to symbolize complete psychological and emotional experiences with a task.

PURPOSE OF THE STUDY

The first purpose of this paper is to probe whether intermediate Iranian EFL learners' perception of task difficulty and skill is influenced by task complexity and task modality. The second purpose is to examine how these two task factors can affect intermediate Iranian EFL learners' task experience as demonstrated in Flow Theory (Csikszentmihalyi, 1975, 1990), an entirely strengthened regime of being completely engaged in the activity. And finally, as the difficulty-skill balance debatably determines the flow, the influence of the difficulty-skill balance on flow experience will be investigated. In line with these objectives, the following research questions (RQs) were raised:

1. RQ1: Is there any difference in Iranian EFL learners' perception of task difficulty, skills, and difficulty-skill balance according to task complexity and modality?
2. RQ2: Is there any difference in Iranian EFL learners' flow experience according to task complexity and modality?
3. RQ3: Does Iranian EFL learners' perceived difficulty-skill balance anticipate flow experience?

METHOD

Participants

This study employed forty-nine Iranian EFL learners enrolled in a private institute in Isfahan to participate as its research subjects. They differed in their majors at high school or university, their English background was based on their general English education in Iranian contexts through communicative instructions. There were both male (25.8 %) and female (74.2) learners and their range of age differed from 14-47. Overall, according to their Oxford Placement Test results (M = 48.4, SD = .54) and institutional final Oral and Written Test, the participants had intermediate levels of English proficiency.

Instrumentation

Argumentative Tasks

Four argumentative tasks given to the learners varied in terms of two independent variables of task complexity and modality: (a) simple speaking task, (b) complex speaking task, (c) simple writing task, and (d) complex writing task. The function of task complexity was through +/– features as categorized in Robinson's (2001a, 2001b) Triadic Componential Framework (TCF). The assumption was that the higher the number of traits to be granted for completing the task, the higher the mental demands of the task. This acceptance relates to Campbell's (1988) conceptualization of a complex task as "possessing various interrelation and competitive elements to delight" (p. 42). Then, the operation was done on task modality as another independent variable through speaking and writing. Though spoken and written tasks are monologic, dialogic, or multiparty, the monologic tasks were prioritized for the comparability benefit since speakers or communicative contexts can influence communicative tasks. The contents were similar although the situational contexts of the tasks were slightly different; that is, all options across the four tasks were described in related

terms. The students had the chance to choose the topic for completing the simple tasks, but there was no choice available for complex task completion.

Flow Questionnaire

A questionnaire was borrowed and adapted from literature (Cho, 2018) with fifteen items was given upon completing each task to examine participants' task experience. It was divided into three aspects of learner experience: perceived task difficulty (2 items), perceived skill (3 items), and flow experience (10 items). The Csikszentmihalyi's Flow Outlook (1975) was represented by three components of interest, attention, and control to serve as a complete perception where a learner is completely attracted to the task with full control and basic interest, Egbert (2003). Interest items devoted central pleasure and an individual's free decision to involve again in the task (e.g., "I would perform this task even if it were not required"). Attention items tested how much an individual was engaged in a task or how little an individual lost concentration by other things (e.g., "It took no attempt to keep my concentration on the task"). At last, control items expressed the idea that an individual had a bright aim when performing the task and had a feeling of control on practicing the task ("While I was performing this task, I knew what I wanted to perform"). They checked the chosen item in the questionnaire based on the percentage of complexity or simplicity (e.g., "25%, 50%, 75%, and 100%").

Data Collection Procedures

Receiving a repeated measure design, learners were asked to perform the tasks. The nature of the argumentative tasks was to signify how both task complexity and modality affected learner perception of task difficulty. Since the occurrence of both spoken and written language in real life is frequent and the participants need to apply and experience both language fashions to finish real-life tasks, an educationally important concern was the selection of appropriate task mode. The task designation was to discover whether

complex tasks caused the students to be stressed out or they were completed more poorly than simple tasks. According to the essence and topics of the task, the tasks were chosen to display elements such as motivation, interest, attention, and confidence in the participants.

At the beginning of each first session, the study purpose and procedures were clarified and participants completed a written consent form. The procedures took place over 2 sessions for each group of students. There was no time constraint for task completion, but overall, the speaking task approximately took 2-4 minutes and was performed individually while the writing task took 15-20 minutes. For instance, in the first session, one participant was first asked to perform a simple writing task and then a complex speaking task was assigned to be done. In the second session, that participant first completed complex speaking, and then a piece of simple writing had to be finished. After completion of each of these four argumentative tasks, the participants ticked a designed questionnaire asking about their experience with the task to reveal task difficulty, the learners' skills, interest, attention, and control. Altogether, 196 tasks including 98 simple tasks against 98 complex tasks were performed, and 196 questionnaire forms were also completed after each simple and complex task. Figure.1 illustrates the paring and ordering of the task set for one group.

Group One: 9 Students	
First Session	Second Session
Simple Writing: 15-20 minutes 9 students (at the same time)	**Complex Speaking:** 2-4 minutes 9 students (separately)
Questionnaire: 5 minutes	**Questionnaire:** 5 minutes
Simple Speaking: 2-4 minutes 9 students (separately)	**Complex Writing:** 15-20 minutes 9 students (at the same time)
Questionnaire: 5 minutes	**Questionnaire:** 5 minutes

Figure 1. Pairing and ordering of the task set

Scoring

The subjects' answers given to the selected items were averaged to make a combined score to express every construct. As a sign of flow (Shernoff et al., 2003), the combined scores of interest, attention, and control were specifically applied to express participants' total task experience specifically. The scores estimation of task difficulty-skill balance was based on this equation.

Balance scoring = Task difficulty + Skill - | Task difficulty − Skill |

A certain value of task difficulty minus skill is shown by the vertical line. The equation refers to two essential elements of ideal balance in flow theory. The first assumption is that the ideal challenge will be comprehended when both challenge and skills are immense, yet due to the balance, this will cause a lack of interest when both are small. Second, heedless of the direction, discrepancies between challenge and skills are pondered on displaying deviation from a balance that can be a negative indicator for the ideal challenge. Pondering this, the calculation of balance scores was obtained by counting task difficulty and skills scores together, and later the deduction of the deviation degree from the balance.

Data Analysis

A repeated measure multivariate analysis of variance (MANOVA) was administered to bring the answer to the RQ1 considering the impact of task complexity and modality on task difficulty, skill, and difficulty-skill balance. The two levels of task complexity and two levels of task modality were considered to be the two independent variables (IVs), and the dependent variables (DVs) were task difficulty, skill, and the balance between them. Therefore, a repeated-measures MANOVA was also administered to realize the impacts of task complexity and modality on the flow experience (RQ2). To observe the impact of task traits on particular

elements of flow experience, the three features of the Flow Perspective— interest, attention, and control— were also tested. The analysis was done on both variables; the two IVs were task complexity and task modality with two levels for each, and the four DVs were named interest, attention, control, and flow. Lastly, to answer the RQ3, a linear regression was conducted to see to what extent the difficulty-skill balance predicted flow experience.

RESULTS

Effects of Task Complexity and Modality on the Dependent Variables

RQ1 asked whether task complexity and modality could affect the learners' perceptions of task difficulty, skills, and difficulty-skill balance. A repeated-measures MANOVA was employed and results are demonstrated in Table 1.

Table 1. Descriptive statistics for complexity and modality effects on task difficulty, skills, and difficulty-skill balance

Variables	Complexity	Modality	Mean	Std. Deviation	N
Difficulty	Complex	Speaking	4.83	.55	49
	Simple	Speaking	4.42	.61	49
	Complex	Writing	5.10	.79	49
	Simple	Writing	4.87	.63	49
Skills	Complex	Speaking	6.97	2.52	49
	Simple	Speaking	8.61	2.08	49
	Complex	Writing	8.40	6.13	49
	Simple	Writing	9.08	2.40	49
Balance	Complex	Speaking	9.10	1.47	49
	Simple	Speaking	8.85	1.22	49
	Complex	Writing	9.59	2.12	49
	Simple	Writing	9.59	1.28	49

Regarding task difficulty, there was a difference between complex (M = 4.83) and simple (M = 4.42) speaking tasks, which was also true about the complex (M = 5.10) and simple (M = 4.87) writing tasks. Concerning the learners' perceptions of skills, there was a difference between complex speaking (M = 6.97) and simple speaking (M = 8.61) tasks, and, not

surprisingly, the complex writing tasks (M = 8.40) and simple writing tasks (M = 9.08) had different mean scores. Finally, regarding the difficulty-skill balance, complex and simple speaking tasks received different mean scores (9.10 vs. 8.85, respectively), yet the mean scores for complex and simple writing tasks turned out to be similar (M = 9.59). To see whether task complexity and modality brought about significant differences in the learners' perceptions of task difficulty, skills, and difficulty-skill balance, the p-values for complexity and modality were checked in the repeated-measures MANOVA.

Table 2. Results of repeated-measures MANOVA for the effects of complexity and modality on task difficulty, skills, and difficulty-skill balance

Within Subjects Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Complexity	Pillai's Trace	.28	6.22	3.00	46.00	.00	.289
	Wilks' Lambda	.71	6.22	3.00	46.00	.00	.289
	Hotelling's Trace	.40	6.22	3.00	46.00	.00	.289
	Roy's Largest Root	.40	6.22	3.00	46.00	.00	.289
Modality	Pillai's Trace	.32	7.49	3.00	46.00	.00	.328
	Wilks' Lambda	.67	7.49	3.00	46.00	.00	.328
	Hotelling's Trace	.48	7.49	3.00	46.00	.00	.328
	Roy's Largest Root	.48	7.49	3.00	46.00	.00	.328
Complexity * Modality	Pillai's Trace	.04	.72	3.00	46.00	.54	.045
	Wilks' Lambda	.95	.72	3.00	46.00	.54	.045
	Hotelling's Trace	.04	.72	3.00	46.00	.54	.045
	Roy's Largest Root	.04	.72	3.00	46.00	.54	.045

Table 2 reports the results of four different statistical tests, of which Wilks' Lambda is the most widely reported one. First, the p-value under the Sig. column across from Wilks' Lambda for complexity is lower than the .05 level of significance ($p < .05$), which indicates that task complexity did cause significant differences in the learners' perceptions of task difficulty, skills, and difficulty-skill balance (as a composite variable). Besides, task modality gave rise to significant differences in the learners' perceptions of task difficulty, skills, and difficulty-skill balance (as a composite variable) since the p-value was lower than the significance level ($p < .05$). To find out if task complexity and modality caused significant differences in all the three variables of task difficulty, skills, and difficulty-skill balance or only in some of these variables, a follow-up post hoc test was conducted.

Table 3. Post-hoc test results for the effects of complexity and modality on task difficulty, skills, and difficulty-skill balance

Source	Measure	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Complexity	Difficulty	6.25	1	6.25	14.63	.00	.23
	Skill	44.12	1	44.12	3.78	.06	.07
	Balance	18.36	1	18.36	6.59	.01	.12
Modality	Difficulty	4.90	1	4.90	9.86	.00	.17
	Skill	65.14	1	65.14	5.96	.01	.11
	Balance	.73	1	.73	.37	.54	.00
Complexity	Difficulty	.41	1	.41	.85	.36	.01
* Modality	Skill	11.27	1	11.27	1.13	.29	.02
	Balance	.73	1	.73	.30	.58	.00

Table 3 revealed that task complexity brought about significant changes in task difficulty and difficulty-skill balance ($p < .05$), but not in skill ($p > .05$). However, modality caused significant changes in task difficulty and skill, but not in difficulty-skill balance. Finally, the interaction between task complexity and modality did not affect any of the three DVs (difficulty, skill, and balance) significantly.

Task Complexity and Modality in Flow Experience

RQ2 addressed whether there was any difference in learners' flow experience depending on task complexity and modality. A repeated-measures MANOVA was conducted to examine the effects of task complexity and modality on flow as a composite variable consisting of interest, attention, and control. Table 4 presents the descriptive statistics for this analysis.

Table 4. Descriptive statistics for the effects of complexity and modality on flow (interest, attention, and control)

Flow	Complexity	Modality	Mean	Std. Deviation	N
Interest	Complex	Speaking	11.57	2.42	49
	Simple	Speaking	11.97	1.76	49
	Complex	Writing	11.83	3.35	49
	Simple	Writing	12.59	2.46	49
Attention	Complex	Speaking	7.71	2.04	49
	Simple	Speaking	8.53	1.87	49
	Complex	Writing	8.20	2.55	49
	Simple	Writing	9.40	2.32	49
Control	Complex	Speaking	7.48	2.26	49
	Simple	Speaking	8.65	1.84	49
	Complex	Writing	8.14	2.87	49
	Simple	Writing	9.08	2.66	49

For the interest variable, there were differences between simple (M = 11.57) and complex (M = 11.97) speaking tasks, and also between simple (M = 11.83) and complex (M = 12.59) writing tasks. For the variables of attention and control, there were also differences between simple and complex speaking and writing tasks. To find out whether task complexity and modality significantly affected flow or not, the results of the repeated-measures MANOVA table were checked.

Table 5. Results of repeated-measures MANOVA for the effects of Complexity and modality on flow (interest, attention, and control)

Within Subjects Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Complexity	Pillai's Trace	.15	2.86	3.00	46.00	.04	.15
	Wilks' Lambda	.84	2.86	3.00	46.00	.04	.15
	Hotelling's Trace	.18	2.86	3.00	46.00	.04	.15
	Roy's Largest Root	.18	2.86	3.00	46.00	.04	.15
Modality	Pillai's Trace	.59	22.32	3.00	46.00	.00	.59
	Wilks' Lambda	.40	22.32	3.00	46.00	.00	.59
	Hotelling's Trace	1.45	22.32	3.00	46.00	.00	.59
	Roy's Largest Root	1.45	22.32	3.00	46.00	.00	.59
Complexity * Modality	Pillai's Trace	.08	1.41	3.00	46.00	.25	.08
	Wilks' Lambda	.91	1.41	3.00	46.00	.25	.08
	Hotelling's Trace	.09	1.41	3.00	46.00	.25	.08
	Roy's Largest Root	.09	1.41	3.00	46.00	.25	.08

Table 5 signifies that the complexity impact on flow (as a composite variable) was of statistical significance as the p-value under the Sig. column across from Wilks' Lambda for the complexity analysis was smaller than .05, and also the modality effect on flow reached statistical significance ($p < .05$). However, the interaction between complexity and modality did not exert significant effects on the flow. Then, to see whether complexity and modality affected all of the three variables of interest, attention, and control, or just some of them, the post hoc analysis table was consulted.

Table 6 results showed that task complexity could significantly affect attention and control, but no effect on interest. Differently, modality could significantly influence all three variables of interest, attention, and control. Finally, the interaction between complexity and modality did not influence any of the subcomponents of flow.

Table 6. Post-hoc test results for the effects of complexity and modality on flow (interest, attention, and control)

Source	Measure	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Complexity	Interest	9.43	1	9.43	2.28	.13	.04
	Attention	22.90	1	22.90	8.87	.00	.15
	Control	14.33	1	14.33	4.83	.03	.09
Modality	Interest	16.57	1	16.57	12.79	.00	.21
	Attention	50.00	1	50.00	51.34	.00	.51
	Control	54.12	1	54.12	51.32	.00	.51
Complexity * Modality	Interest	1.47	1	1.47	2.06	.15	.04
	Attention	1.84	1	1.84	2.53	.11	.05
	Control	.61	1	.61	.61	.43	.01

The Relationship Between Difficulty-Skill Balance and Flow

The last RQ asked whether EFL learners' perceived difficulty-skill balance could predict flow experience. A series of simple linear regression was conducted: once for the variables of difficulty-skill balance and flow under the simple speaking condition, once under the complex speaking condition,

once under the simple writing condition, and finally for the complex writing condition. The results were merged and presented in Tables 7 and 8.

Table 7. Model summary results for the regression analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Complex Speaking Tasks	.26	.06	.04	6.22
Simple Speaking Tasks	.34	.12	.10	4.80
Complex Writing Tasks	.47	.22	.21	.7.46
Simple Writing Tasks	.39	.15	.13	6.62

Table 7 revealed that for complex speaking tasks, the value given under the R Square column was .06, which means six percent of the variance in the flow could be explained by difficulty-skill balance. Under the simple speaking tasks condition, the value was .12, it was .22 for complex writing tasks and .15 for simple writing tasks. To examine the statistical significance of these results, Table 8 was consulted:

Table 8. ANOVA results for the regression analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
Complex Speaking Tasks	Regression	133.53	1	133.53	3.45	.07
	Residual	1818.99	47	38.70		
	Total	1952.53	48			
Simple Speaking Tasks	Regression	147.75	1	147.75	6.40	.01
	Residual	1084.93	47	23.08		
	Total	1232.69	48			
Complex Writing Tasks	Regression	770.01	1	770.01	13.80	.00
	Residual	2621.33	47	55.77		
	Total	3391.34	48			
Simple Writing Tasks	Regression	368.97	1	368.97	8.41	.00
	Residual	2060.69	47	43.84		
	Total	2429.67	48			

Table 8 showed that difficulty-skill balance could not significantly predict flow for complex speaking tasks. However, for simple speaking tasks, complex writing tasks, and simple writing tasks, difficulty-skill could be deemed a significant predictor of Iranian EFL learners' flow experiences.

DISCUSSION

Effects of Task Complexity and Modality on the Dependent Variables

RQ1 explored whether L2 learners' perception of task difficulty, skills, and difficulty-skill balance are influenced by task complexity and modality. The findings indicated that task complexity influenced learners' perception of task difficulty and difficulty-skill balance, but there was no significant change in the perception of skill. Seemingly, the findings related to effects of task complexity on task difficulty contribute to the former findings by other researchers showing that task complexity and learners' understanding of task difficulty revealed a significant association (Révész et al., 2016; Robinson, 2001b; Robinson & Gilabert, 2007; Sasayama, 2016). Moreover, the learners' understanding of their skill is not fixed to a definite framework, and this corroborates prior findings that learners' understanding of their skill level or task encouragement are not influenced by task complexity but only their understanding of task difficulty and stress level are affected (Ishikawa, 2011; Robinson, 2001b). Robinson (2001b) believed the learners' variables connected to their abilities could be approximately constant when compared with affective variables like motivation and feeling. The findings of this study on the differences in difficulty-skill balance along various task complexities can be defined in terms of the existing perspectives in the understanding of task difficulty (Cho, 2018), meaning that when the association between task difficulty and skill resulted in difficulty-skill balance, the learners' competence stays resistant.

There is a description of approximately corresponding balance of learners' recognized skill in a way that how task complexity was managed in this study. According to Levelt's Model of Speech Production (1989), the

productive process of oral language will occur along the linear process of Conceptualization, Formulation, Articulation, and Monitoring, and it can be claimed that the functionality of task complexity in this study can dictate higher mental requests at the mentally-visualized phase. It has been shown by other researchers that the mental requests of the formulation phase influence the learners' understanding of their language skills; thus, the engagement of L2 linguistic skills will not be interrupted (Cho, 2018).

However, the assumption of abstract task complexity elevates formulation requests in a task; Kormos and Trebits (2012) proposed distinct mental requests in any language production phase can be forced by task forms. Since any task features heterogeneous traits likewise in Skehan (2014), it is implied that the manipulated task complexity for the conceptualization phase was unsuccessful to affect mental requests in the linguistic formulation phase.

As well, concerning the findings, the essential variable task modality had significant changes in learners' understanding of task difficulty and skill, but it did not have a significant change in difficulty-skill balance. As the findings in (Cho, 2018), participants believed that writing was easier than speaking, and they demonstrated a high class of writing skill in both situations; the greater rank of the difficulty-skill balance in writing implies that writing determines ace situations for perfect leaner experiences to a higher range than speaking. Cho (2018) believed that nearly less forced writing process authorizes learners to assign their attention under goals and wants, therefore, they concentrate only on the writing process phase as the recovery of linguistic information of planning process; participants also discovered writing simpler than speaking since they had extensive exposure to written language.

Task Complexity and Modality in Flow

The second research question investigated whether task complexity and modality affect L2 learners' flow experience. The findings revealed that task complexity affected two elements of flow attention and control significantly

while there was no significant effect on interest. For the perception of interest over a task, learners showed a tendency that their perceived interest was limited with the gain in task complexity ($p = 0.13$), but this tendency had no significant class. Robinson (2007) signifies that different ranges of task complexity are advantageous for comprehending the task complexity influence on learner experience.

First, our findings on the effects of task complexity on learner experience agree with prior findings that revealed how impressive rising task complexity is in learner interest (Ben Maad, 2012b; Ishikawa, 2011) and concentration (Ishikawa, 2011). This concurs with Csikszentmihalyi's theory (1975, 1990) that learner interest, attention, and control can be provoked by challenging tasks. These agreements soften the controversy of the inadequacy of suitable task challenges for flow (Abuhamdeh & Csikszentmihalyi, 2012a); among other elements, the task pertinence (Shernoff et al., 2003), task essences (Poupore, 2014), and learning atmosphere (Wu, 2003) affect learners' basic interest in a task. Therefore, like this study, adequately various environments to influence learner interest may not have been constructed by the acceptance of equal kinds of decision-making/ argumentative tasks with the same task forms and essences (Cho, 2018). Besides, other studies (Ishikawa, 2011; Robinson, 2001b) on task complexity showed that there was no essential influence on learners' emotional answers in terms of interest and motivation; nevertheless, noticed confidence (Gilabert, 2007) and concentration (Ishikawa, 2011) as mental aspects of learner experience were significantly influenced.

The other attainable point is the optimum challenge assumption, task challenge-skill balance, that is needed for flow (Csikszentmihalyi, 1975, 1990) means various flow experiences between simple and complex tasks are because of some differences in the difficulty-skill balance. (Cho, 2018), although discovering the task complexity role for flow conveyed the flow experience occurrence in either task, learners revealed various experiences in both complexity conditions.

Approximately similar to the findings on task complexity, the findings revealed that all three flow features were meaningfully anticipated by task modality. Writing happened in a top range of interest, attention, and control than speaking where an approving situation for flow in the writing context is explained according to a learner's predisposition and an excellent difficulty-skill balance. In other research (Baba et al., 2013), the writing was found more desirable and well-known for EFL learners, and (Baralt & Gurzynski–Weiss, 2011) an extreme taste of control was found in writing than speaking. Furthermore, (Aubrey, 2016; Baralt et al., 2016; Shernoff et al., 2003) some studies indicated that an obvious target for a task, how to achieve the target, and the sense of having control over a task presentation are basics for learner involvement and motivation for a task.

As learners follow obvious targets and top ranges of self-efficacy about their ability to accomplish the task, interest will be developed (Hidi & Renninger, 2006). Thus, while writers experienced the recursive writing process easily, the autonomy sense on a task may have been developed that influenced learners' flow experience in a proper sequence (Cho, 2018), and since writers had much time on writing, they placed targets for a task and self-managed their manners for the targets which assist them to increase interest in the task.

With regard to the findings on the effects of modality on the variable of attention, (de Bot, 1992) intentional control on language use and attention is needed for producing L2 without considering the production style whereas L2 production means are not automatized yet. Cho (2018) proposes that in comparison to other flow elements like interest and control, this elucidates the complete higher degree for learner attention against task situations.

Lastly, (Cho, 2018) there is an emphasis by flow outlook on the moderate function of an excellent challenge for flow that contrarily conveys that greater flow in writing is through the life of excellent challenge in writing. The findings revealed that writing was easier than speaking and more desirable for learners' ability level as greater harmony scores revealed,

therefore, greater auxiliary situations for the flow experience could be constructed (Cho, 2018). Nonetheless, the definition of this presumed excellent challenge can be various; some studies proved that effortless tasks are more helpful to face the flow in definite situations while Csikszentmihalyi (1975, 1990) put stress on a great challenge and ability in flow experience.

The connection of great skill-challenge harmony was with mental capability aspects in the flow as concentrating easily, however, other emotional and encouragement aspects of flow as being pleased, happy, and motivated were connected to the control situation where great skills were superior to normal challenges (Lambert, Chapman & Lurie, 2013). Following this outlook, this study found the greater level of flow experience in writing might be because of approximate comfort and task manageability, opposite to eminent difficulty-skill situation for experiencing flow.

Task Difficulty-Skill Balance and Flow

The third research question examined to what extent perceived difficulty-skill balance anticipated flow experience. Findings revealed that the task difficulty-skill balance significantly anticipated flow, contributing to Csikszentmihalyi's (1975, 1990) assertion that perceived task challenge and perceived skill adapted the flow. Specifically, the difficulty-skill balance did not significantly predict flow for complex speaking tasks whereas the difficulty-skill balance was a significant predictor of learners' flow experiences for simple speaking tasks, complex writing tasks, and simple writing tasks.

Former studies (Aubrey, 2017; Egbert, 2003; Schmidt & Savage, 1992) found the significance of difficulty-skill balance for flow experience in L2 learning. In line with Cho's (2018) study, it can be claimed that a complete engagement in an activity with a great level of consideration is shown by flow; therefore, the activity will be automatized; that is, an individual for flow condition wants to practice control in various conditions

instead of staying in a control situation. Tasks before being accomplished fruitfully should be challenging, and a learner who experiences the happiness and success feelings is to dress the skill for facing a greater challenge degree (Csikszentmihalyi, 1990). Fundamentally, the observed difficulty–challenge balance is predominant for flow and constant improvement. Like some previous research, (Csikszentmihalyi & LeFevre, 1989; Lambert et al., 2013), this study showed the function of difficulty-skill balance in the flow was approximately similar. Concerning the situations and variables like learners' basic interest, beliefs, and encouragement, the excellent challenge effect differs that the present findings may be clarified by these variables.

The influences of optimum challenge on flow (Abuhamdeh & Csikszentmihalyi, 2012b) are adjusted by the learners' basic encouragement and traits like goal-directedness (Elliot & Harackiewicz, 1994). For instance, (Cho, 2018) flow rarely occurs even in the optimum challenge existence if learners do not accomplish activities with basic motivation or bright purpose. The optimum challenge effects on flow can be managed by task type alternatives, contexts, mental and emotional evaluation of tasks, plus learner motivation (Kormos & Préfontaine, 2017). Some studies clarified the suitable advantageous consequences in mental adeptness and attention at the company (Csikszentmihalyi & LeFevre, 1989) and with activities at school (Bassi & Fave, 2004), and its effects on motivation differed from context to context. On the other hand, the effects of the difficulty-skill balance on flow, in line with other studies that had ample influences (Abuhamdeh & Csikszentmihalyi, 2012b; Lambert et al., 2013), are perhaps because of the contexts where these studies took place. Particularly, (Cho, 2018), the participants might have faced difficulty to discover the task applicability to their language improvement or actual use in life, and the assumption is more difficult that the participants had basic motivation to do the tasks. Therefore, there may be a limitation for a donation of excellent suitable situations on the flow when the presence of such assisting situations is not available.

CONCLUSION AND IMPLICATIONS

Comprehending learners' task experience in answer to differing task complexity and modality was the main focus of this study from the perspective of learners' experience which is effectively the result of task traits and learners' connection (Campbell, 1988; Robinson, 2001a). Considering task difficulty, skill, and flow experience, the learner experiences were explored. Although task complexity influences were specified to the mental aspects of learner experience (task difficulty and difficulty-skill balance) and emotional aspects (attention and control), findings revealed the vital duty of task modality in L2 learners' complete task experience performance. Since the p-value was smaller than .05, it was concluded that all three flow features were significantly affected by task modality.

The discovery that self-stated task difficulty had a connection with extrinsic control of task complexity suffices as practical proof in help of approving the task complexity control which has been a concern in studies on task complexity (Révész et al., 2016). However, Cho (2018) argued that task complexity and difficulty did not occur by changes in learner's understanding of their skills. Since task complexity plays a prerequisite role in designing task and arraying (Robinson, 2001a), the respective resistance of skill is bolstering for proficient reasons regardless of elevated task complexity; the use of task complexity is to improve learning with no probably disadvantageous results on learners' feelings such as disappointment, mental pressure, and anxiety which possibly occur as task complexity is promoted and learners understand limited certainty in their competence. Nevertheless, generalizing the findings needs to be experimental when different kinds and ranks of task complexity control probably adjust learners' evaluation of their competence.

Moreover, the findings on participants' desirable experiences with writing tasks can be applied for the improvement and nourishment of learner motivation particularly at the primary phase of motivational improvement

(Dörnyei, 2009; Schmidt et al., 1996), while advantageous learning experiences are elemental elements for learner motivation. However, purpose, styles, and development are writing and speaking differences, as their use for language improvement is significant (Manchón, 2011), hence, writing task takes priority over speaking to construct beneficial experiences for learners with the advantage of advancing a less anxious context.

Pedagogically, implications can be extracted from the findings on the comprehended task balance role in experiencing flow. This study revealed that the perceived difficulty-skill balance still is relevant as an impetus for learner interest, engagement, and control. Although it is hard to define an excellent degree since task doers define it personally about their realization of task challenge and ability degrees (Cho, 2018), teachers can instructionally attempt to progress suitability and flow experiences and create tasks that increase learners' ability feeling, suggest success chances, and make their confidence improve. In learners' language improvement, (McCroskey & McCroskey, 1988) self-noticed ability is more powerful than real ability.

Moreover, the approximate balance of perceived skills and perceived difficulty-skill balance implies that task complexity is perceived in terms of various language production phases (Kormos & Trebits, 2012; Skehan, 2014). Various kinds of task complexity possibly dictate various mental requirements in each production phase that lead to different consequences related to task difficulty, skill levels, and experiencing flow; furthermore, the findings suggest that employing a variety of modalities along psychological features of Flow Theory may be effective for language learning, education, and instruction since the flow will occur in the high mode of task engagement.

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