Cognitive Aspects Of Task-Based Syllabus Designs

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Abstract: This article reviews some issues on cognitive aspects of task-based syllabus designs, particularly based on two studies (ROBINSON, 2001; SKEHAN & FOSTER, 2001) that deal with cognitive accounts of task-based designs. First, I will focus on contrasting positions of these two papers concerning attentional resources. Second, I will present some empirical results of studies on the effects of task difficulty and conditions. Third, I will show pedagogic sequencing of tasks. Fourth, I will display the measures of three dimensions of task performance, and the measures of task difficulty. Finally, I will close the article with a call for longitudinal studies to investigate second language learning and development.
Keywords: Cognitive aspects. Task-based syllabus designs. Second language learning.

Recently, one of the hot topics that have been discussed in the field of Task-based research and language pedagogy regards a polemic discussion on how to design task-based syllabus. This article particularly departs from the concept that tasks are "perceived differently by researchers and practitioners, though tasks are all designed to encourage learners to develop cognitive language skills in real-life situations" (BERGSLEITHNER et al., 2007, p. 379, based on LEAVER & WILLIS, 2004). This paper also reviews two relevant studies (ROBINSON, 2001; SKEHAN & FOSTER, 2001) which particularly take into consideration some issues on cognitive accounts of task-based designs.

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The two papers (ROBINSON, 2001; SKEHAN & FOSTER, 2001) chosen to be discussed here present essential rational for task-based research and language pedagogy literature especially regarding second language learners' cognitive resources, such as some aspects that may affect cognitive demands of tasks, others that may cause some impact of task conditions on task performance, and also some pedagogical considerations for task sequencing.

According to the issues on some cognitive aspects discussed in both papers, these studies might, thus, contribute to the development of theories that may help explain second language learners' cognitive development in response to particular pedagogic instruction concerning task-based syllabus design.

Thus, this article aims at tapping some theoretical relevant issues related to this topic, as discussed in both studies (ROBINSON, 2001; SKEHAN & FOSTER, 2001). Particularly in this study, I will center on (a) different positions between the two studies especially regarding individuals' attentional resources; (b) explanations of empirical results of studies on the effects of task difficulty and conditions; (c) tasks pedagogic sequence; (d) assessment of three language dimensions of task performance; and (e) assessment of task difficulty. Finally, I will suggest that longitudinal studies may be profitable for better results on second language learning.

In both papers (ROBINSON, 2001; SKEHAN & FOSTER, 2001), the researchers seem to join form and meaning in task-based designs. However, Skehan and Foster (2001) and Robinson (2001) have posed contrasting perspectives about this issue. Skehan and Foster (2001) state that since second language (L2) learners' attentional resources are fundamentally limited in nature, competitive relationship between form and meaning does exist: "…attentional limitations for the L2 learner and user are such that different areas of performance compete for one another for the resources that are available" (SKEHAN & FOSTER, 2001, p. 205).

On the other hand, Robinson (2001) sustains a multiple resources view of attention:

> … there are no general capacity constraints on attention (Newmann, 1987), and therefore no competition for attention, unless this involves attention switching (an executive/action control problem, not a capacity problem) between resource pools(Wickens, 1989). Consequently, where tasks are made increasingly complex

> simultaneously along dimensions which draw on different resource pools, there should be no competition for attentional resources (ROBINSON, 2001, p. 307).

Compared to Robinson (2001), Skehan and Foster (2001) explicitly depict a distinction between form and meaning. Skehan and Foster (2001) assume that among the three dimensions of task performance (i.e., fluency, accuracy, and complexity), fluency may be a result of second language learners' focus on meaning, that is, when second language learners focus on meaning they tend to have a better degree of fluency. In contrast, accuracy (grammatical correctness) and complexity (risk-taking) may be a consequence of second language learners' focus on form. Furthermore, the last two authors claim that "the performance of L2 learners in terms of their fluency, accuracy, and complexity is sensitive to the cognitive demands of tasks, and that therefore the cognitive dimension of task design is a very important consideration" (SKEHAN & FOSTER, 2001, p. 198).

In the same fashion, Robinson (2001) envisages that the triadic features of task complexity, condition, and difficulty may have an effect on second language learners' task performance. Some problems may occur when examining equivocal empirical results of the previous studies (e.g., see Tables 1 and 2 below).

According to Skehan and Foster's (2001) limited capacity view of attention, the dimensions of accuracy and complexity could not go together, as evidenced by the following remarks:

> … it would appear that performance on a particular task can, at most, help *some* of the areas of language development, not all - for example, in one context complexity might be promoted, but this may well have damaging effects upon accuracy (SKEHAN & FOSTER, 2001, p. 193).

> … a basic tension between meaning and form is complexified by a further tension within form between conservatism and risk-taking, with the former manifested in a greater attention to accuracy, and the latter in a prioritization of complexity, and the use of more demanding (and extending) language (SKEHAN & FOSTER, 2001, p. 205).

However, a number of research results have shown that the two

dimensions – accuracy and complexity – could often really come together. On the other hand, Robinson's (2001) multiple capacity view of attention proposes that fluency could go together with the two dimensions mentioned, which is again contradictory to some empirical findings on this specific literature.

I will now try to discuss these ambiguous study results. That is, the assumption that second language learners do not focus on form does not necessarily mean that they focus on meaning instead, which suggests that they may focus on meaning and they may also focus on form depending on different task situations. Also, the assumption that second language learners do not focus on meaning does not necessarily mean that they focus on form instead. Accordingly, it seems rational for the researchers above to consider any combination of research results related to the three dimensions of task performance: (a) fluency; (b) accuracy; and (c) complexity. However, the problem is that even though they could presume individual research results, there is still no consistence with how attention works with varied task conditions and task characteristics.

In addition, Robinson (2001) suggests that second language learning could be enhanced by sequencing tasks from simple and easy tasks to complex and difficult ones. Although Skehan and Foster (2001) do not explicitly state how to sequence different tasks, both studies (ROBINSON, 2001; SKEHAN & FOSTER, 2001) show that the researchers seem to have the same opinion on this concern. They seem to depict this idea from some cognitive constructs of other common learning processes. As for example, let's say that some students are learning how to play the guitar. Generally, they probably start learning each scale and reading music, and only then they will practice playing from easy to more difficult songs. The implication on task sequencing here is based on the prediction that second language learning occurs in a gradual and sequential fashion as instructors try to increase task difficulty in second language classes. Nevertheless, just providing a task with one-step higher degree of difficulty does not guarantee language learning. Many other language aspects should be considered here in addition to some cognitive aspects, such as linguistic, pragmalinguistic and sociolinguistic demands, for example, to the enhancement of reading comprehension in a second language and of tasks characteristics and task conditions on such task performance.

Many researchers in the area of task-based research literature (e.g., Ellis, 2000, 2003), such as task pedagogy, and task design, as well

as the authors mentioned, have investigated the effects of task characteristics and task conditions on task performance. Some measures have been used for the three dimensions of task performance upon which many researchers seemed to be in agreement. For example, accuracy has usually been measured via percentage of error free clauses. I believe that researchers need to investigate if it is a valid measure of accuracy. In a previous study (BERGSLEITHNER, 2007), I proposed a distinct accuracy assessment in the performance of L2 oral tasks, since I suggested counting number of errors in the target structure of the treatment only. Thus, it should be considered that different errors may cause different implications in a given context, and then they may include complexity as well. Some errors may be global errors, which can cause serious communication problems, whereas other errors may be local ones, which may not hinder communication at all. My concern is that the simple counting of error free clauses cannot distinguish the two error types, and can involve complexity as well, conflating their relative implications and significance for second language use.

Taking another language dimension into account, fluency has usually been measured via number of pauses or number of words per utterance. However, it should be considered that native-like performance does not necessarily mean the fastest speech in L2 speaking. On the other hand, there are a lot of communication contexts where slowing down the speech rate and/or having appropriate pauses are highly important for L2 learners to achieve native-like proficiency. In other words, since frequent pauses and slowing down of speech are extremely natural even within native speakers' conversations, it is a controversial postulation that fluency may be measured by merely counting number of pauses or words per each utterance. Thus, further studies should investigate other ways to assess fluency during oral tasks performance.

Another remarkable topic to discuss here is the way in which the authors (ROBINSON, 2001; SKEHAN & FOSTER, 2001) are dealing with the issue of task difficulty. Even though some criteria may be more important than others, they treat them as having equivalent weights. Consider the following figure:

	simple				complex
dimensions of complexity	1	2	3	4	5
planning time (before speaking)	+	–	–	–	–
single task (route marked)	+	+	–	–	–
prior knowledge (of a familiar area)	+	+	+	–	–
few elements (a small area)	+	+	+	+	–
	(simplified data/map)			(authentic data/map)	

Figure 1. *Increasingly complex versions of a map task* (Robinson, 2001, p. 314)

The problem is that this sort of judgment is so naïve that we may mistakenly simplify the complex nature of each dimension. Let's say that there are two tasks and five criteria. One task has three plus and two minus signs, whereas the other task has two plus and three minus signs. Does this necessarily mean that the former is more complex than the latter, so the former task should be presented first?

Most significantly, I feel that this line of research has such limitation that it cannot fully capture the influence of tasks on the second language learning process. The main concern of the two papers is related to manipulations of tasks, conditions of task performance and their effects on the three different dimensions of learners' task performance. They seem to posit that provision of tasks from easy to difficult tasks would lead to subsequent automatic language acquisition. Their studies are largely based on a short period of observation for quasi-experimental treatment conditions. What is missing there is a crucial consideration that second language learning is more longitudinal and unquestionably more multi-faceted than we may expect. Definitely, longitudinal investigations should be encouraged to understand more deeply the impact of cognitive demands of tasks on second language learners' task performance and their subsequent second language development. Table 1 shows the impact of task difficulty on task performance while Table 2 shows the impact of task conditions on task performance.

Table 1 - Impact of task difficulty (task characteristics/cognitive demands of tasks) on task performance (summarized from SKEHAN & FOSTER, 2001)

Brown, Anderson, Shillcock, & Yule, 1984; Foster & Skehan, 1996	Tasks based on concrete and immediate information ⇨ greater fluency and accuracy
Bygate, 1996	Familiarity with task contents ⇨ greater complexity and accuracy
Skehan & Foster, 1997	A narrative with a well structured and obvious storyline ⇨ greater fluency Decision-making tasks ⇨ greater complexity
Brown, 1991	Information interpretation tasks ⇨ greater complexity
Robinson, Ting, & Urwin, 1995	'here and now' tasks ⇨ greater fluency, but less accuracy

Table 2 - Impact of task conditions on task performance (SKEHAN & FOSTER, 2001)

Ellis, 1987	Pre-task planning	Unplanned conditions with narrative tasks ⇨ less accuracy
Crookes, 1989		10 min of planning before two information-gap tasks ⇨ greater complexity and fluency, no significance with accuracy
Foster & Skehan, 1996; Skehan & Foster, 1997		Planning ⇨ greater complexity, fluency, and accuracy Detailed planning ⇨ greatest level of complexity cf. undetailed (standard, 10 min) planning ⇨ greatest level of accuracy
Skehan & Foster, 1999		Language and content-oriented planning ⇨ no effects
Wigglesworth, 1997		High proficiency group doing the difficult task ⇨ greater planning effects on complexity cf. low proficiency group ⇨ greater accuracy
Mehnert, 1998		Effects of different amount of planning time (control, 1, 5, 10 min): 1 min ⇨ greater accuracy/10 min ⇨ greater complexity/increasing planning time ⇨ greater fluency
Ting, 1996		Effects of planning on spoken and written description tasks ⇨ no effects
Ortega, 1999		With narrative tasks ⇨ significant effects on complexity, fluency, and one of two accuracy measures
Skehan & Foster, 1997	Post-task	Threat of a subsequent public performance on three tasks ⇨ effects not on complexity and fluency, but on accuracy
Foster & Skehan, 1999		A requirement that subjects transcribe one minute of their own recorded performance ⇨ effects on accuracy

As we can see in Tables 1 and 2, these authors have carried out studies on tasks and many of them have found that planning is important for enhancing accuracy, fluency and complexity. Also, familiarity with tasks may help learners to improve the three dimensions of language performance. In contrast, unplanned conditions may make learners' speech less accurate and probably less fluent and complex in task

performance in second language learning.

Taking all these factors above into account, and analyzing and reflecting upon the two papers mentioned (ROBINSON, 2001; SKEHAN & FOSTER, 2001), which take into consideration (i) the issue of task difficulty, (ii) the effects of task difficulty and task conditions, (iii) the sequencing of tasks, (iv) the measures of three dimensions of task performance, and (v) the measures of task difficulty, one can realize how difficult it is to measure and assess fluency, accuracy, and complexity, as well as to design task-based syllabus. Moreover, it is complex to judge if a language dimension comes before the other or if the three language dimensions or aspects enhance simultaneously. Further studies should investigate these three language dimensions in depth.

In sum, based on this multifaceted issue, I also propose a call for longitudinal studies on second language acquisition, since all the topics mentioned above are related to task designs and to the development of the three language aspects, and it is very complex to assess as well as to analyze whether such task syllabus designs are appropriate and profitable to improve second language development.

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Resumo: *Este artigo revisa alguns tópicos sobre aspectos cognitivos relacionados à aplicação de tarefas, e baseia-se particularmente em dois estudos (ROBINSON, 2001; SKEHAN & FOSTER, 2001) que lidam com questões cognitivas relacionadas a conteúdos programáticos baseados em tarefas. Primeiramente, focarei nas diferentes posições abordadas nos dois estudos no que diz respeito a recursos cognitivos atencionais. Então, mostrarei resultados empíricos de alguns estudos sobre os efeitos de dificuldades e condições das tarefas. Depois, demonstrarei a sequência pedagógica das tarefas. Em seguida, demonstrarei as medidas das três dimensões de desempenho de tarefas e as medidas de dificuldade das tarefas. Por fim, concluirei sugerindo estudos longitudinais a fim de se obter resultados mais concretos sobre aprendizado e desenvolvimento de uma segunda língua.*

Palavras-chave: *Aspectos cognitivos. Programa de conteúdos baseado em tarefas. Aprendizado de segunda língua.*

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